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# **THE IMPACT OF INTERNET ON BUSINESS**

A thesis presented in partial fulfilment of the requirements

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## **Abstract**

The purpose of this thesis is to critically examine the impact of Internet on business with a particular emphasis on the New Zealand business situation. The focus is on the human elements rather than the technical aspects affecting organisations. The literature review establishes the context for the study with an overview of the development and progress of the Internet as a key component of the business environment.

The information gathered from early stages of the research provided a cross-sectional analysis of Internet use in New Zealand industry sectors. Information gained served as a basis for selecting businesses for a more in-depth analysis for face-to-face interviews. A range of interviews were held with participants from organisations that were in the high, moderate and low Internet adoption sectors as identified by the questionnaire responses.

Questionnaires were sent to businesses representing the full range of industry sectors via traditional paper channels. An industry- wide, New Zealand- wide sample was sought to give baseline data on New Zealand organisations to gain an understanding of current and future uses. To assess the issues involved in the future application of modern computer communications, issues such as cost-benefit analysis, privacy, security, access to information services and databases, competitive advantage, information management, public relations, marketing and electronic commerce will be explored. A range of issues identified from both the online and offline literature that seemed indicative of emerging and future trends formed the basis of the questions.

Once the paper questionnaires had been returned, a comparable sample of respondents was sought, again indicative of all seventeen industry sectors. All respondents in this sample were from organisations that at least had email, even if they did not yet have a presence on the Internet. These customers of Internet Service Providers were sent a largely identical questionnaire by email. The aim was to gather data about organisations already online to identify any early-adopter characteristics and to gather more specific detailed information applicable to this group as existing Internet users.

The final research phase was a longitudinal study using a case study methodology. Selected organisations were followed through a three-part process of planning for technology, acquisition and implementation of technology and the final stage of evaluation and audit. Trends from the literature and the questionnaires were examined in the context of New Zealand organisations. Structured interviews were conducted with these organisations.

The results of the investigation form the success factors with discussion on the necessary planning, implementation and evaluation for businesses wishing to embrace the medium. As 94% of New Zealand business are small and medium sized enterprises (SMEs), the majority of findings are relevant to that context in particular although a number can be extrapolated to Internet-connected organisations in general.

Three objectives run through the various research phases. The research objectives are:

- to identify the nature and extent of Internet based business activities by organisations in New Zealand
- to examine the motives and impacts of these initiatives
- to determine factors that contribute to the success of these endeavours

The first research phase focusses on the planning issues including perceived and actual information needs of organisations using the Internet. The process of selecting appropriate technology and Internet providers is considered and study made of the competitive advantage offered by the Internet. Implications for organisations such as knowledge gaps, changing power structures with new technology and issues of privacy and controls are also considered. Implications for individuals including workload, communication patterns, training, reskilling and deskilling are pursued.

The second research phase focusses on the acquisition and implementation of the Internet by organisations. Comparisons are made between organisations and their strategies for getting online and managing the process of changeover and transition to an Internet-based business environment.

The third research phase compares expected and actual outcomes from Internet implementation in organisations. A review is carried out with participating organisations by examining the role of the Internet on business effectiveness.

The area of Internet use in organisations needs investigation as the majority are faced with devising an Internet strategy, yet most companies have barely considered the online world till relatively recently. This research considers the implications of this for successful Internet use and presents success factors for organisations. The recent downturn in dot.coms has increased interest in the factors determining success although the cases included in this thesis are not dot.coms as such but ordinary businesses that want to use the Internet.

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# **1 Introduction**

## **1.1 Introduction**

This thesis takes as its theme the impact of the Internet on business. In particular an investigation is made of the key factors that affect the success of an organisation's use of the Internet for various business processes including those with customers and suppliers.

It is increasingly common for businesses to be on the Internet. Some have a brochure-based Web site, others have transactional order taking capacities and others have fully integrated database systems linking their Web presence to the databases and inventory systems of their suppliers.

Significant issues for businesses going online are planning and design; degree of management and organisational support; attention to human resource, marketing and communication aspects; security and the overall contribution towards business effectiveness. Other important aspects include meeting customer demand and the ability of organisations' cultures to embrace change.

These are important issues to look at because the way organisations represent themselves to the wider public, their customers and suppliers is increasingly being mediated via the Internet. Impressive cost savings are being realised by companies that are using the Internet for business-to-business e-commerce and these efficiencies are worthy of further consideration by New Zealand small and medium sized enterprises.

This research will investigate the use of the Internet by organisations to answer the research question "what are the success factors for the use of the Internet by organisations?"

In this thesis, methods were compared and a questionnaire and rating based method developed to answer these issues. A set of nineteen success factors for organisations using the Internet was developed and principal component analysis used to determine those variables having the strongest determinant of success.

## **1.2 Outline of chapters**

The dissertation is arranged in four main sections comprising twenty two chapters.

### **Part 1**

The first part of this dissertation begins with chapter one comprising the Introduction to the thesis.

The second and most lengthy chapter is the literature review which contains definitions of terms, the history and growth of the Internet, advantages and disadvantages of the Internet, as well as commentary on the management, planning,

design, business and consumer needs, implementation, measurement and maintenance issues.

The third chapter gives the problem statement for the current study and establishes the need for the research. Gaps in the literature are identified. The size of predicted Internet growth demands that attention be paid to the best possible use of it by organisations. The study therefore sets out to determine what are the success factors for the use of Internet by organisations.

## **Part 2**

The second part of this dissertation develops the methodology used in the rating scale for the success factors.

Chapter four outlines the methodology that was used in this investigation which consisted of three postal and email questionnaires followed by the case studies. The rationale for doing this is contained in this section. The list of questions for those organisations forming the basis of the case studies is given here also.

## **Part 3**

The third part of the dissertation presents the results of the experimental work performed in the data gathering phase of the research.

Chapter five contains details of the experiment design and how the samples were selected.

Chapters six through eight contain the experimental results comprising three questionnaires. The first questionnaire was a paper-based survey sent to New Zealand organisations that covered the full range of seventeen industry sectors. These results are summarised in chapter six. Chapter seven consisted of the email-based survey to respondents in the seventeen industry sectors about their Internet use. This extended the initial questionnaire by focussing on those organisations that were already using Internet. Chapter eight is the third questionnaire, this time in a paper-based format to respondents on Small and Medium Enterprise Centre databases.

Chapters nine through seventeen are the nine case studies with each chapter detailing the background, survey implementation and results.

Chapter eighteen gives the results and analysis of case studies. An explanation of the success factor ratings is given, as is an analysis of the methodology used. The results for each organisation are given in a series of spider plots and a dendogram.

## **Part 4**

The nineteenth chapter consists of the conclusions and recommendations arising from the thesis research. Implications and suggestions for organisations are outlined. The final three chapters nineteen to twenty two consist of references, bibliography and a glossary.

## **2 Literature Review**

### **2.1 Introduction**

The literature review of this thesis establishes the context for the study with an overview of the development and progress of the Internet as a key component of the business environment.

Because of the rapid changes occurring during the research period, it proved difficult to maintain consistency between the studies and to keep abreast of the developments occurring in the introduction of Web based electronic commerce into many businesses. An example of this is the relative paucity of banks and financial institutions in New Zealand that had a fully capable Web site providing electronic banking services for their customers when the case study research was started. By the conclusion of the case studies, almost all the New Zealand banks had fully functional Web based banking services despite the reservations expressed by some of the case studies. It should also be noted that the majority of New Zealand banks became owned by overseas principals and this may have had some considerable influence on their Web site development.

As a result of these and other rapid changes it was necessary to keep updating the literature and what is presented here is the state of the literature at the end of the research so that any changes in the possible factors could be considered in the final analysis. In general the factors for success did not seem to vary, rather it was the range of applications coupled with changes in style as a result of continuing development in the facilities which could be incorporated in Web pages through changes in such aspects as scripting languages that influenced the development of Web sites successfully or otherwise.

The literature review is presented in section representing the success factors which emerged through the various studies reviewed and organisations which were finally selected for the data collection and analysis.

Both online and offline sources of information are examined. Some sources are more credible than others and there is a lot of hyperbole in terms of claims and gains with the medium. Many of the comments about Internet use, appropriateness and business applications are anecdotal or from reported interviews with a limited sample. Another aspect to consider is the rate of change, which means that material can date quite quickly. At the time the study started there was relatively little literature in the professional research journals describing scientific studies of the success factors for the establishment of a business Web site.

Information in trade journals and popular publications tends to be largely unsourced and not covered in great depth. They do tend to have greater currency than material that appears in refereed journals as that is usually several years out of date; an important consideration when doing research in this area. Some of the online material,

in this respect, fills the gap. There is greater currency and relevance and therefore a need to balance source credibility with the currency of the information.

During the period of study, the Internet has grown immensely and the speed of change has been phenomenal. When the research began in September 1995, terms such as e-commerce were barely heard. At the close of the study, e-commerce, e-business, e-corporation and so on are in current use. It seems that inserting an "e" in front of almost any conventional term guarantees magazine sales.

The literature suggests that Internet usage is growing exponentially and is likely to have a huge impact on the way businesses are run and how they interact with their customers and each other. While there has been a range of research done on the profile of online users, the types of sites, numbers of hits and income generated from Internet sales, there was a distinct lack of research about the impact of Internet on the functioning of organisations and the impact on their systems and processes.

The literature review explores some aspects relevant to the study such as the Internet's history, growth and uses, defines terms such as e-commerce and e-business, looks at the business environment and then examines the literature under the combined framework of the product development structure and software engineering, both of which are relevant to the development of an Internet presence or application. A summary is provided at the end of each section of the literature review of conclusions made with respect to lessons learnt and success factors gained.

## **2.2 What is the Internet?**

This section of the thesis gives a short history of the Internet and describes the change in use from its military and academic origins to its current widespread commercial use. Key developments are highlighted before some of the main Internet technologies that enable business transactions are examined. The terms e-business, e-commerce and Internet commerce are defined. The social demographics, including user profiles, number and geographical spread of users, are explored with particular attention to New Zealand.

### **2.2.1 History of the Internet**

The Internet, which has existed in one form or another since 1969, has been used as a business medium for decades. The scale of business however was very small with very few participants who were specialised in their technical interests. Two events had a major impact on the use of Internet for business purposes. One was the abolition of the Acceptable Use Policy (AUP) and the other was the invention of the World Wide Web (WWW).

The AUP was established in the late 1980s when the US based National Science Foundation assumed the responsibility for partially funding the Internet backbone. The AUP meant that anything other than research and educational traffic on the backbone was forbidden, meaning that the Internet could not be used for commercial purposes.

When the National Science Foundation stopped funding the Internet in the mid 1990s the AUP was dropped, enabling the use of the Internet for business.

Tim Berners-Lee and a few colleagues who were computer scientists working at CERN high-energy physics lab in Geneva in 1991 invented the WWW. As well as the basic architecture of the WWW, they also invented the first browser that was called Mosaic in 1993. This new type of software meant a greater number of people could access the Internet with an intuitive, graphical and simple to use interface. The WWW and Mosaic had been developed initially to make it easier for scientists and researchers to more easily share technical information. This 'killer' technology combined the worldwide accepted computer-to-computer communication protocol TCP/IP developed for the original ARPA network (see below), which gives access in a uniform and simple way to the Internet as a 'network of networks', with a straightforward visual way to access information from any of these sources.

It is generally accepted that the genesis of the Internet took place in 1969 with the formation of the ARPANET (the Advanced Research Projects Agency Network). The name was given to the collection of computers used by the United States military and subsequently, various academic institutions that were connected to each other and adopted basic rules to allow information sharing. At the time, the main use of the system was for email, which enabled thoughts and documents to be rapidly and easily sent between military installations and academics. The system operated under rules, which provided it with several unique and valuable characteristics.

Each computer was independent, but could recognise and interact with every other individual computer in the network. Individual computers could also identify problems with the operation of a system and re-route information around problems. An example of this is if one computer that served as part of the "road" for sending data to another computer had difficulties, the other computers could re-route a message via another computer and the information would still arrive at its ultimate destination. This feature was extremely valuable to the military, who identified this as an effective method of "bullet-proofing" a communication system against nuclear war or other damage caused to a communication installation. If a nuclear explosion took out a military base, military communications could still continue.

In recent years the Internet has seen an explosion of commercial information as businesses have recognised the huge potential of an international communication medium which offers such flexibility in presenting or publishing information. One of the main reasons for this has been the creation in 1991 of the World Wide Web (WWW). This is a hypertext system that provides access to the Internet through programs called network information browsers which made it much easier and simpler for users to find the sites and information they were looking for.

Today the Internet is essentially a vast network of networks, a collection of individual computers and computer networks that can communicate freely with each other randomly, yet effectively. Any or all of the computers connected to the Internet can

access information placed on a computer that comprises part of the Internet. The emphasis has moved beyond solely military and academic information to material of a commercial and entertainment nature as well with a much wider audience and authorship than previously.

Vinton G. Cerf is called the father of the Internet. As a graduate student at the University of California at Berkeley in 1974, he was picked by Robert Kahn of the Defense Advanced Research Projects Agency, or DARPA (sometimes called ARPA), to develop the fundamental TCP/IP protocols that enable computer networks to interact seamlessly, or almost seamlessly.

Cerf is now vice president at MCI-WorldCom in charge of Internet Architecture and is also responsible for moving the Internet away from serving as a technical toy of the scientific and defence community to a private sector phenomenon that has transformed the world's business and communications. It became the great enabler of information technology, or IT, it reorganised corporate functions, provided international information flows, changed the nature of national and international transactions, fuelled the enormous productivity gains of the last decade and left government regulatory agencies behind in many instances (Lucier, 1999).

Digital technology for business had been around for forty years or more, moving from punched tape to punched cards to large-reel tape processed in mainframe computers to 8" floppy disks to 3 1/4" floppy disks to removables or so called mini computers and later "personal computers". Generally, it was a static system for storing data or making long-range economic analyses and was very expensive. With the advent of the desktop PC in the 1980s, the reduced cost of storing data and more capable microchips meant much computing activity could be devolved to the desktop. By 1989 all those workstations could be connected to the Internet and by 1993 the World Wide Web provided a way for the data to be enhanced with pictures, graphics, animations backgrounds and a range of typefaces. Home PCs today have the capability of 1970s computers. The value of a PC has changed from what it contains to what it connects to.

In 1969, the Pentagon's Advanced Research Projects Agency four computer sites comprised the network called "ARPANET." A subscriber could send an identical message to a large number of network subscribers- the first time that news and information could be shared over such a digital network.

Until 1990, commercial use of the Internet was expressly prohibited and even after that, little commercial activity initially took place. Yankee Group suggested this was because of two factors: lack of business-specific content and lack of effective navigational tools (Lobb, 1995). In addition the people using Internet in 1990 were mainly academics with a tradition of information use.

Prior to the 1990s, the Internet was used almost exclusively by a small group of defence related research scientists and computer experts. Until the advent of browsers

that provided a user-friendly interface with the Internet, non-technical users had little incentive to come to grips with the technology (Salter, 1997).

Although the Internet had its origins in the ARPANET, a project of the Department of Defense's Advanced Projects Research Agency, it moved to broader scientific and educational use under the direction of the National Science Foundation, or NSF, in the mid-1980s. With the introduction of commercial use, NSF withdrew in 1995 and the Net has been operated since then by private enterprises using compatible technology on a consensus basis (Lucier, 1999).

Some analysts have been worried about the nature of information being sent over the Internet changing rapidly, with potential implications for the system's cost and ease of use. In the early 1990s, the majority of Net users were transmitting simple text such as email messages and Usenet postings. As users obtained new software and more powerful desktop computers made it practical to send high-resolution colour images, sound files and full-motion video, these uses consumed more capacity, or bandwidth, than text (Dias, 1995). By swamping the network with video signals, it took relatively few users to temporarily overload portions of the Net. This had serious implications for accessibility and reliability of resources in the business setting until new high speed Internet systems began addressing bandwidth problems.

One of the problems of Internet for business use is the limited speed of data transfer especially for applications requiring increased bandwidth. 300 bps was the connection speed for the original modems and 20Mbps is the speed of the Southern Cross cable main line into New Zealand. The capacity of cables is measured in the number of bits sent per second. Megabit (a million bits) defined the capacity of early fibre optic cables. These were followed by gigabit (a billion) and now terabit (a trillion) cables. The latest transatlantic cable is rated as 2.4 terabits (Allen, 2001, p77).

In 1995, congestion on the Internet was already hampering attempts to use it for new applications during peak business hours, said Jeffrey Mackey-Mason, an economist at the University of Michigan (Brody, 1995). The problem becomes particularly acute when some special event occurs and people download the images, slowing large portions of the Internet. There is also no provision for "buying one's way to the front of the line" and urgent transmissions, such as a potentially life-saving videoconference between a surgeon and a radiologist, might queue up behind a home movie that someone put on the Net just for fun. This has resulted in an unprecedented demand for "broadband" access for both business and home users.

A new addressing protocol is required to enlarge the pool of addresses available for devices that want to be connected. Internet2 will potentially address the limitations on IP addresses as the present system can't cope with the projected number of connected computers and other devices.

## **2.2.2 Internet technology**

The following section explores some of the technologies used by the Internet and their effect on business transactions.

### **2.2.2.1 EDI**

The origins of electronic commerce developed over two decades ago with "electronic data interchange" or EDI. Firms in trading relationships were losing time and money by printing, transferring and then re-keying interorganisational transaction data from one firm's computer to the other's. A few firms worked together to establish and agree on common formats and structures for exchanging computer-to-computer electronic data. Early EDI efforts met with problems over the lack of broad-based standards for exactly how the various transaction data types should be represented. Eventually various standards bodies such as ANSI in North America and the United Nations in Europe and Asia created sets of data interchange standards that are used by most organisations doing EDI today.

According to the Boston Consulting Group (BCG) (2000), the most active users of EDI currently include retailers, the car manufacturing industry and logistics companies. EDI enables organisations to send documents directly to suppliers using standardised data fields and is used mainly in procurement, production, logistics and automated money transfers. It allows accelerated and errorless ordering of direct goods as well as providing support of 'just in time' production.

EDI has several drawbacks and is relatively expensive to implement and inflexible to an organisation's changing needs. As a result, its use has been restricted to long-term customer-supplier relationships that support big business volumes, meaning that few small businesses used EDI. The BCG (2000) said that only 10 per cent of Australia's largest companies and less than 1 per cent of all businesses, use some form of EDI. In those companies using EDI, only 20 per cent of their transactions are conducted through EDI itself.

Originally, EDI was limited to non-financial transactions such as order placements and acknowledgements. Payments were still handled by printing and mailing paper cheques because there was sufficient uncertainty about the security and reliability of EDI. It became evident that unless the financial side of a firm's business transactions were included in its EDI processes, only a portion of the potential benefit from EDI would be realised. As a result, an increasing number of organisations in recent years have combined their financial and non-financial business transactions together into complete electronic relationships with their business partners. This has often involved using electronic mail, EDI and electronic funds transfer (EFT) for financial payments. This larger concept of a complete business-to-business electronic relationship became known as electronic commerce.

The rise of the Internet changed the meaning of electronic commerce to "doing business over the Internet." The Internet allows businesses to resolve many of EDI's shortcomings. Businesses of all sizes are able to gain simple and quick access to each

other using well established communication protocols and inexpensive software. Setting up an EDI situation previously required a secure dedicated network that was extremely expensive but using the Internet Protocol (IP) as the basis for communications has made e-commerce much more feasible.

Business-to-business EDI-centred electronic commerce and individual use of the Internet and WWW came together in the mid 1990s. 1995 is usually cited as the first year in which the Internet began to be taken seriously as a basis for commerce (Huff, Wade, Parent, Schneberger & Newson, 1999, p4). Currently the focus of electronic commerce is largely the Web-based business-to-business aspects rather than the EDI business-to-business focus.

Large companies that have relied on EDI for business transactions are now experimenting with Web-based forms to link them to smaller suppliers that have resisted setting up EDI systems. While they view the new technology as promising, they're still not abandoning traditional EDI systems when it comes to their most important business-to-business buying and selling transactions.

What Bell, an analyst at Forrester Research Inc. has seen happening is that companies that have been using leased lines to transport EDI messages are switching to Internet- or extranet- based transport mechanisms (Sliwa, 1999). An extranet is a network that links the intranets of business partners using the virtually private network on the Internet.

Electronic data interchange is clearly a type of electronic commerce, since EDI comprises standard formats for a variety of business commercial transactions such as orders, invoices, shipping documents, and the like. EDI can be conducted over private networks or over the Internet. If conducted over the Internet, it may or may not make use of the World Wide Web. Also, it may or may not involve aspects of electronic funds transfer.

#### **2.2.2.2 XML**

XML is a markup language for documents containing structured information. Structured information has been defined as information that doesn't exist in isolation, pieces of information that are related to other pieces and can be represented by hierarchies; something data modellers have been doing for years. A document is almost anything containing structured information such as a purchase order, cheque, word processing document, spreadsheet, CAD drawing or voice message. Benefits of XML are that it can be used to describe any kind of information, it can be easily read by applications, is self-describing, XML adapters for existing systems can be easily developed, it separates content and presentation, standards are endorsed by all major vendors and it has broad end user support.

The growth in XML and the realisation that a business can make greater savings by investing in business-to-business aspects of e-commerce rather than solely focussing

on those aspects necessarily relating to the consumer has meant a gradual change in focus away from previous EDI functions.

### **2.2.2.3 ERP**

Enterprise resource planning (ERP) systems have come out of an enterprise requirement and have traditionally been used by large companies. They are an integrated software package for the business. The transition of e-commerce from a narrow set of high volume users to business relationships of all sizes is a major driver of business-to-business (B2B) e-commerce adoption. This move has forced vendors to rethink and according to Mark Jeffries, chairman of the Electronic Business Association of New Zealand (eBANZ), "there are now a multitude of middleware (software that helps diverse networked computer systems work together, thus promoting their interoperability) and other solutions to get systems talking to each other which has helped shift the focus to smaller companies." Some examples of middleware that enable e-commerce are Ariba, Vignette and CommerceOne.

### **2.2.3 E-business**

The following section looks at the opportunities afforded by the Internet and defines and describes key terms.

Electronic business includes everything to do with the application of information and communication technologies (ICT) to the conduct of business between organisations and from company to consumer. Electronic business includes electronic advertising, electronic buying and selling, electronic distribution, direct client interaction for marketing and customer service, groupware, email, electronic collaboration, workflow, automated forms distribution and secure email business transactions.

Mukherjee (2001) described an e-business as "an organisation that connects critical business systems directly to their critical constituencies (eg customers, employees, vendors and suppliers) via intranets, extranets and the World Wide Web."

The business model for e-business is new with considerable impact on existing business. Price competition can be fierce driving down margins on products. Companies are thriving on new business models; yet they often show no profit. The market for e-business is new and as a result there is no historical information with the market size, characteristics and user habits changing rapidly. The technology used is new and there can be surprises. While implementation costs can be quantified, this is the tip of the iceberg. The costs of technology are dropping rapidly but customer expectations are increasing even faster.

E-business is the complex fusion of business processes, enterprise applications and organisational structure necessary to create a high-performance business model (Kalakota & Robinson, 2001). These authors make the point that without an organisation adopting an e-business foundation, e-commerce cannot be executed effectively. They say that the first phase of e-commerce (1994-1997) was about presence: making sure that everyone had a Web site and had something on it; often

referred to as brochureware. Not all companies knew why they were doing it but they knew they needed an online presence. Kalakota & Robinson say the second phase (1997-2000) of e-commerce was about transactions- buying and selling over digital media with the focus on order flow and gross revenue. The third phase of e-commerce (2000- ) has a focus on how the Internet can impact profitability by increasing gross margins and Kalakota & Robinson refer to this phase as e-business. It includes all the applications and processes enabling a company to service a business transaction.

In addition to encompassing e-commerce, e-business includes both front- and back-office applications that form the core engine for modern business. Front- office refers to those customer-facing applications such as the Web site while back-office functions include inventory databases and so forth. Therefore, e-business is not just about e-commerce transactions or about buying and selling over the Web; it's the overall strategy of redefining old business models, with the aid of technology, to maximise customer value and profits. Automating back-office processes such as supply chain transactions is reducing costs. Businesses around the world are using electronic commerce and Internet technologies to lower purchasing costs, reduce inventories and cycle times, provide more efficient customer service, lower marketing and sales costs and realise new sales opportunities.

Hartman, Sifonis & Kador (2000) say companies they have studied go through a series of predictable phases: brochureware, customer interactivity, transaction enabler, one-to-one relationships, real-time organisations and communities of interest (COINs). They plot the progression over a series of overlapping one year periods from 1995 to 1998 for the first five types with COINs first in evidence in 2000. They distinguish the six phases as follows.

At the beginning of what they refer to as the Net Readiness era, organisations use the Internet as a bulletin board for brochures, employee telephone directories, and over time, for more critical documents such as catalogues and price lists. For these companies, the Net was a publishing medium and it ensured an online presence but it didn't exploit interactivity.

In the second phase of customer interactivity, companies create a dialogue with customers by empowering the customer to enter, ask, demand and dictate the kind of value that needs to be delivered. The term customer could refer to consumer, end-customer, employee, component purchaser, assembler and so on.

In the third phase, companies begin to use the Net as a transaction enabler to expand transaction-oriented processes such as selling product, procuring supplies and enabling internal processes such as human resource activities etc.

Hartman, Sifonis & Kador's (2000) fourth phase focusses on one-to-one relationships with the Internet being used to create "customised silos of interactivity." Web technology allows companies to deal with customers on a one-to-one basis, meaning

product pricing becomes fluid, dictated by individual customers, often in an auction process.

The fifth phase is referred to as “real time organisations”, where "zero latency organisations" are able to plan, execute and aggregate buyers and sellers in a virtual arena. These companies understand users' needs and deliver value in real time. This refers to the performance of data processing during the actual time a business of physical product transpires, in order that results of the data processing can be used to support the completion of the process.

The final phase refers to communities of interests (COINS) that the Internet enables companies to create in terms of content, community and commerce that closely link various partners in a value chain.

Raisch (2001) writes about E-Marketplaces becoming the new business venue for buying, selling and supporting customers, products and services. "The global development and acceptance of the Internet as the new standard for communication and commerce provides us with a powerful new global Internet-based e-business network that is projected to drive billions of dollars in revenues and dramatically reduce the costs of conducting transactions online."

Message boards and chat sessions are ways to build communities. Content refers to information conveyed over the Web. News stories and stock quotes are two examples. Commerce is where consumers or businesses pay money to purchase physical goods, information or services that are posted or advertised online.

Raisch gives four phases of e-marketplaces that evolve from simple matchmaking services based on transactions and e-commerce to global value trust networks. In phase one: commodity exchanges and marketplaces, the e-marketplaces are focussed on the buying, selling and trading of commodity products and services. The products and services that best fit in this category includes products/services that can achieve a standardised pricing level and that have mature globalised product distribution service delivery systems in place.

The second phase is Value-Added E-Marketplaces that provide value-added services to support their customers with transaction support services, as well as enable the customer-driven creation of customised products and services. This type of new value creation through a combination of digital and physical value delivery systems is now more possible than in the pre-Internet economy. Value-added services also come in the form of services that facilitate the transaction such as financial settlement, in-transit insurance, escrow services, warehousing, and e-logistics.

Raisch's third phase is Global Knowledge Exchanges or The Global Knowledge Network. The development and availability of knowledge tools for knowledge work creates the building blocks for global knowledge exchanges and the knowledge network to become a reality. The capture and use of information that flows through the

value chain of any industry is a critical tenet to successfully solving industry pain points and creating new propositions.

The fourth phase Raisch calls Global Value Trust Networks. These are E-marketplaces that will provide an integration point for business process, people, and technology, as well as products and services. These new Value Trust Networks (VTNs) come together to support industry value chains. The marketplaces in this phase will provide a combination of interoperability and trusted relationships that will forge the foundation of new global innovation. The VTNs will weave enterprises, marketplaces, industries, and individuals together into empowered and productive digital workgroups. These Value Trust Networks will be the new business platform for the twenty-first century, according to their author.

Raisch talks of the three C's of e-business: content, community and commerce. He refers to two types of communities and the first, communities of interest, is similar to Hartman, Sifonis & Kador's (2000) sixth phase (COINS). He defines this as communities of people that gather around an organisation's content because they are truly interested in the subject matter such as music, sports, news, speciality products etc. These may be as small as two people discussing your content or as large as millions discussing news issues on Yahoo.com. Raisch's other community type is communities of commerce that are groups of people that gather around a company and its content and are economically tied to the company because of a business relationship.

Boddy & Boonstra (2000) define e-business as the integration, through the Internet, of an organisation's processes from its suppliers through to its customers, commonly referred to as B2B. E-business can strengthen customer relationships and partnerships and enhance inter-company information flows. E-business is being seen, not as an option, but as a strategic necessity.

Gloor (2000) says e-business covers the application of Internet technology in all aspects of the e-business world. E-commerce is used for the activities of marketing, selling and buying of products and services on the Internet. E-business on the other hand is improving business performance through connectivity by deploying Internet technologies in the value chain over Internet, intranet and extranet to achieve dramatic improvements in quality and quantity. E-business connects the value chain between and across businesses and between business and customers to get better service and reduce cost.

E-business is the integration of processes, organisations and systems through Internet-based and related technologies to create differentiated business value and competitive positions. From a technological viewpoint, e-business and e-commerce make use of a vast collection of IT concepts and tools such as ERP, Datawarehousing, workflow/workgroup, customer relationship management, ECR (efficient consumer response), sales force automation, call centres, document management etc. Open Internet standards are used to integrate and automate the value chain by providing a

common language for systems to transparently interface between processes and to exchange data.

#### **2.2.4 E-commerce**

Electronic commerce sits within electronic business indicating that there are many forms of electronic transactions which do not directly concern buying and selling i.e. commerce. These include advertising of products or services, electronic shopping, and direct after-sales support. It would not include such things as interorganisational collaboration using ICT-based collaboration systems for the development of a new product. Boddy & Boonstra (2000) define e-commerce as the process of selling or buying products and services over the Internet, commonly referred to as B2C.

The United Nations' CEFACT (Centre for Facilitation of Procedures and Practices for Acquisition, Commerce and Transport) Working Definition 12/97 (cited in the Ernst & Young 1999 report) defines e-commerce as doing business electronically. This definition differs from others in which e-commerce is seen as a part of e-business. The United Nations CEFACT definition includes "the sharing of structured or unstructured business information by any electronic means (such as e-mail or messaging, World Wide Web technology, electronic bulletin boards, smart cards, electronic funds transfer and electronic data interchange) among suppliers, customers, governmental bodies and other partners in order to conduct business and execute transactions in business, administrative, and consumer activities."

Boston Consulting Group (2000) talk about the value of e-commerce in terms of richness and reach. In the past there has been a trade-off between the richness of the information (in terms of accuracy, bandwidth and interactivity) and reach (the number of people who participate in the benefit of that sharing). The Internet breaks the trade-off by enabling much easier sharing of rich interactive information, allowing companies to broaden their supplier or buyer base in terms of reach and make existing relationships more effective in terms of richness.

Buyers and suppliers in existing trading agreements can improve their interactions in terms of time, cost and quality. If a business utilises e-business, it can pass on information to suppliers regarding end customer demand which will allow those suppliers to better schedule their manufacturing processes. The business can electronically communicate product designs to suppliers which will reduce the time-to-market for new products, thus enabling e-business in general and e-commerce in particular to take place.

Most popular reports have suggested lucrative rewards from being on the Internet, while a few have labelled the Internet as the Pandora's box of networking- full of unpleasant surprises. Some sceptics have said that the only people making money out of the Internet are people telling others how to make money out of the Internet! While some businesses are making money from being online and more are saving money through their online presence, there yet remains to be seen any significant reporting of money made by companies. One of the results of the range of views from optimistic

and pessimistic writers in the popular literature is that many existing and potential business users are confused about what the medium can deliver and how to incorporate it into their business.

The authors of the Ernst & Young 1997 survey saw the primary value proposition of electronic commerce for businesses as the prospect of increased profits from new markets and new electronic channels. It is not only profits earned but profit lost because competitors have made successful use of the Internet. This is particularly the case in an industry such as banking in the early stages, where most banks were forced into using the Internet in response to competitor activity. More specifically, businesses are beginning to realise the following value elements from e-commerce solutions: streamlined supply chains, reduced costs, improved customer service, entrance into new markets, new sales channels and increased global reach.

Like home users, companies wanting to do business on the Web must connect to the Internet through a third-party organisation- an Internet Service Provider (ISP). In the B2C world, connected customers usually begin with a home page as a starting point for their explorations. "Portals" are businesses that exist to support this need and are typically search engine or directory based, offering a variety of information services and derive revenues from advertising. Some B2C examples are Yahoo, AltaVista and Lycos. In addition to these, a huge variety of other portals have appeared, offering differentiated services and targeting various special interest groups. Portals that target a particular industry vertically through producers, wholesalers and suppliers are called "vortals." The term e-market is used to represent the B2B equivalent of a B2C portal. An important distinction appears to be that portals are about information and e-markets have more to do with transactions and business processes.

Businesses can use the Internet to support B2C and B2B activities in four ways: information, interaction, transaction and integration (Velthoven 1999, cited in Boddy & Boonstra, 2000). The simplest applications provide information and suppliers- either to final customers or other businesses- provide information about the company and its products and services on a Web site for customers to view. Some business customers place their requirements on the Internet, inviting potential suppliers to seek more information. The development of Internet marketplaces in which groups of suppliers in the same industry operate a collective Web site makes it easier for potential customers to compare terms through a single portal (Ferguson, 1999).

"Online services can link a business to an existing world of marketing opportunities, financial data and electronic chit-chat" (Resnick, 1994). An example of this is the growth of portals or "one stop shops" online that offer electronic listing services for various businesses in a particular industry cluster. An example of this is a United States firm, TKO Real Estate Advisory Group, that started an electronic listing service for real estate professionals on the Internet. It allows real estate professionals anywhere in the country to post offers to buy and sell commercial and residential properties. The company has gained a competitive advantage over its competitors because "close to 400 people have signed up for the listing service" (Resnick, 1994).

A New Zealand example of a tourism portal is <http://www.aa.co.nz> In 2001, portals tend to be offered by Internet Service Providers such as Clear, Telecom and Ihug in New Zealand.

Rasmussen (1996) believes that the benefits a customer gets from using the Internet mirror those of firms. Individuals, teams and organisations can all gain a competitive advantage if people can access the Internet whenever they want, whether it is for communications, research, placing orders, support or service, provided the information is relevant, accurate, timely, clear and often, concise. As speed and access to information continue to improve, individuals and organisations need to have both the research skills to locate, validate, decipher and interpret information and have the opportunities to use this.

Despite very limited sales resulting from the presence of companies on the Internet so far, many managers believe that being “in it to win it” now will give them an edge (or first mover advantage) with electronic commerce. Generally, those who have decided to have an online presence established it quickly in the knowledge that much would change within six or twelve months and that they would have to upgrade their site (Banaghan, 1995).

E-commerce is making itself felt even in established organisations but beyond the early adopter advantages, companies will be challenged to differentiate themselves from the competition. The Butler Group (founded by Martin Butler in 1990 and ranked second only to the Gartner Group) is one of the first research organisations to evangelise e-commerce. Butler spoke to NZ IT managers at the inaugural MIS NZ breakfast briefings in Wellington and Auckland in July 1999. In his view, businesses should be changing to embrace an economic environment that is becoming totally dominated by information. The value of that organisation, he says, is associated with that information and not with the company’s products. Butler refers to US company Federal Express which used its online parcel tracking service to temporarily outperform UPS, its main competition, who were consequently forced to introduce a similar system. The first mover advantage was apparent (Bell, 1999).

The Butler Group differentiates between “petite e-business” which attempts to address only the supply-side economies of scale and “Grande E-Business”, which addresses far-reaching demand. Butler says the first law of e-commerce is that “business will go where the transaction costs are the lowest.” What companies need to do, according to Butler, is plug themselves into the developing information flow from customer to supplier (Bell, 1999).

Those who hesitate may turn out to be the long-term winners online. A growing number of retailers have put the brakes on fast-track Internet shopping sites to bolster behind the scenes inventory, shipping and customer service systems. There’s a growing realisation that if they’re going to do it, they have to do it right otherwise companies risk damaging their brands. It’s very important when creating an online presence that it represents the brand. Rushing in can do real damage and that might be

what has been behind the hesitancy of traditional retailers to jump in too quickly (King, 1999).

Factors associated with e-commerce 'false starts' by John Brennan, Andersen Consulting (cited in Bell, 1999) are early over-ambition; lack of integration with the organisation's strategy and infrastructure; failure to adapt strategy, infrastructure and mission; focus on the Internet to the exclusion of existing channels (risking large investment for low returns); unfamiliarity with customer needs; rapidly changing customer behaviour; lack of sustained executive commitment, inadequate resourcing and maintenance planning, implementation shortfalls; public confidence issues, privacy and consumer rights concerns; public concern over lack of privacy of their personal data, destroying the organisation's credibility.

Many organisations have commonly presupposed that having a portal will be of value, but this depends not only on the business that organisation is in, but also on how they define a portal. The word implies a gateway or entrance, but in broader terms it may be considered to be an aggregation of content or of users. It might consist of a search engine, a directory Web page- or both. It is a Web page that's a starting point on a Web, intranet or extranet journey- and it is the advantage of being that starting point that makes the portal such an exciting Web concept. Once the potential advantage of ownership of such a gateway has been grasped, it must be defined how the portal will fit into the company's business model. Some issues to consider are: is the organisation a content provider that will make money selling that content through a portal? Will the portal be used as a means of attracting advertisers? Will the portal be used to attract users and collect customer information for purposes of building a database?

General-purpose portals include such worldwide giants as Yahoo and AOL, against which it is difficult to compete if the desire is to see the portal become industry-specific. There is the opportunity to target particular communities of interest. Businesses can be built from portals that serve specific niche interests, providing communities with value.

Barclays Bank in the UK decided that it wanted to be a portal as they realised that there were too many banks, too few differentiators and too little profit to be made from transactions alone. Banks have calculated that a simple transaction carried out at a bricks-and-mortar branch costs them approximately \$2.00 when overheads are factored into the calculation. The same transaction over the Internet costs about two cents. Barclays decided to launch an advertising campaign offering its customers free Internet access for life (Bell, 1999).

By encouraging customers to enter information and ask questions a Web site can achieve a greater level of interaction with visitors. This may take the form of providing details that a company then enters into a database and uses for targeting potential and actual customers with special offers. A buyer can see a supplier's offer and ask further questions about product specification and configuration, price, volumes or delivery.

This level of interactivity moves beyond the mere provision of information and enables the organisation to achieve a stronger connection with the online customer.

Velthoven (1999) cited in Boddy and Boonstra (2000), said the third business use of the Internet is for transactions. This may be either customers buying goods and services through a supplier's Web site or suppliers seeing and meeting a purchasing requirement from a business through a purchase order on the Web site. In some cases the entire transaction from accessing information, ordering, delivery and payment can take place electronically.

Finally, the strongest level of Internet business use is that of integration: when a company links its information systems and makes a defined part of them available to customers and suppliers. Dell Computers is an example of this with customers deciding their computer's configuration and by placing an order that signals their requirements to the company's Web site, the information moves to the systems that control Dell's internal processes and their suppliers. An Internet electronic procurement system means that information can pass electronically to a buyer, who in turn releases it to the Internet site. Contracted suppliers can access this and indicate their acceptance or otherwise. After delivering the physical goods, the supplier can convert the electronic purchase order into an electronic invoice which passes to the firm for electronic payment. This level of complexity has many ongoing benefits for the organisation, its customers and its suppliers. An organisation's competitive advantage is now not so much in the information that it keeps secret, but in what it shares.

These four levels (in this case from Boddy and Boonstra, 2000) but seen in similar forms by others, provide a useful framework for analysing a company's progress on the path to Internet awareness, uptake and adoption. Those companies with limited experience and Internet exposure usually start with brochure-based or fairly passive information sites. As they add more complex transactions and integration applications, the technology and the organisational issues become more complex.

There is some interest in television-based e-commerce but satellite and cable providers that are deploying services need to listen to what services people want and how much they are willing to pay according to a study by TechTrends (Bartlett, 2001). The possibilities of using interactive television for e-commerce have been rapidly progressing and as the Internet becomes more closely intertwined with television, customers will soon be offered the ability to perform many functions via their remote controls. The TechTrends report includes such services as investing, banking, ordering groceries and restaurant meals, printing product information or coupons or shopping for products typically found in retail stores. "The market for "t-commerce" exists in theory but the providers need to be aware that only one in six cable or satellite subscribers said they were willing to pay a monthly fee for such services", according to Todd Wiener, managing director for TechTrends (cited in Barlett, 2001).

Electronic commerce is developing rapidly on the basis of the Internet and the WWW. More than access to information is needed to make electronic commerce work however. The functionality needed includes reliable and high-capacity communications infrastructure. It also includes electronic payment in all its forms, from electronic cheques to digital money for micro-payments, security for privacy protection and the protection of copyrights on digital content, application-to-application communication, search and navigation to deal with large amounts of information and user interface design. When the technologies become easier to use and more powerful, they will become mainstream tools to implement competitive marketing strategies.

#### **2.2.4.1 New Zealand**

The Hon. Max Bradford, the former Minister for Enterprise and Commerce said in 1999, “electronic commerce is probably the most important technological breakthrough of the decade- its potential impact may rival that of the industrial revolution. By 2002 it could be worth US\$300 billion globally and New Zealand, both Government and the business community, must move quickly to ensure we carve out our slice of this pie.”

The Hon. Maurice Williamson, former Minister for Information Technology, Communications, and for Research, Science and Technology saw the task of Government as establishing a legislative, educational, technological and economic environment in which New Zealanders could take advantage of the opportunities presented by such developments as e-commerce and the knowledge based economies of the future (Ernst & Young, 1999).

#### **2.2.4.2 Internet commerce**

Electronic commerce need not be conducted only over the Internet. A great deal of business-to-business electronic commerce is still conducted today over private networks, primarily using traditional EDI channels and value-added network (VAN) service providers. While this is changing, as more and more companies adopt the Internet for some or all of their business-to-business electronic commerce, it will be many years before the Internet largely displaces the VANs.

Within the Internet commerce domain lies an even smaller subset, termed “Web commerce.” This is the component of electronic commerce conducted strictly over the World Wide Web. The WWW is not the only way of using the Internet for commercial interactions. Electronic mail, for example, works well for certain forms of electronic commerce. Software may be conveniently sold over the Internet using the file transfer protocol (FTP) for product distribution. Nevertheless, the Web is clearly the dominant medium for the large majority of Internet commerce today. Since modern Web browsers incorporate other Internet applications, including electronic mail and file transfer via FTP, users today have the perception that they are relying solely on the Web even as they send and receive email, transfer files, and conduct other forms of Internet application that previously was conducted using separate application programs.

### **2.2.5 Growth and value**

In 1995, International Data Corporation predicted a growth in electronic commerce revenues to more than \$200 billion by the year 2000 (Kambli, 1995). This had enormous implications for businesses that provided services such as couriers, printed directories and catalogues, and for print advertising driven by savings in cost and speed. It was also significant for wealth creation, with organisations offering entirely new services over the Internet.

The Yankee Group (Lobb, 1995) said they believed by 1998 all but “the laggards” would be connected and doing business on the Internet. While there are strong incentives for doing business online, there are a number of implications and restraining factors such as privacy and security for organisations to consider.

There is both hype and high hopes around the future of electronic commerce. ' Kelly (1998) spoke of speculation being rife that a 'new economy' was being created, governed by 'new rules'. A number of commentators have argued that the existing new possibilities will especially benefit fast-moving small companies that are not held back by a legacy and history, the 'gazelles that are willing to take the plunge' (Uyttendaele, 1998). Other writers such as Shapiro & Varian (1998) emphasise that companies above all should not forget about basic and well-established business principles.

Care has to be taken with the interpretation of market research in electronic commerce. The definition that is being used as the basis for measurement of the electronic commerce market is often not clear and usually definitions are not comparable. There is no single accepted way of defining or measuring electronic commerce. The OECD (1997) published a report in 1997 that made a systematic inventory of the different reports about market size and the growth of electronic commerce. It found that predictions were widely different; an example being the predictions for the total value of electronic commerce in the year 2000 ranging from \$580 million to \$775 billion. The level of international business-to-business electronic commerce being transacted by most of the Fortune 500 companies was already measured in the billions of dollars and growing daily.

While buying from Amazon.com is an activity that is commonly talked about and visible as a consumer activity, in 1999 business-to-business transactions were already twice the size of business-to-consumer sales. These sites tended to have low visibility except to those supply-chain partners who used them. B2B worldwide reached \$64.8 billion in 1999, according to the International Data Corp. (IDC), while B2C sales were only \$31 billion. IDC projected that by 2003, B2B worldwide would reach almost \$1 trillion, while consumer sales only would be \$177.7 billion (Lucier, 1999).

The University of Texas study reached its projections on the basis of what it called the four-layered Internet ecosystem, employing 1.2 million people. The first layer is the Internet infrastructure- the backbone that distributes communications, Internet service providers, PC manufacturers and makers of networking hardware and software. The

second layer consists of the network applications infrastructure- consultants, Web server software, multimedia applications, search engines. The third layer focusses on the Internet intermediaries- online travel agents, stockbrokers, content providers and Internet ad brokers. The fourth level is online product sales, subscription-based companies, online advertising and other products more familiar to the individual consumer (Lucier, 1999).

The Organisation for Economic Cooperation and Development (OECD) conservatively estimated that, by 2050, worldwide electronic, computer-dependent commerce will grow from \$30 billion annually in the late 1990s to approximately \$1 trillion a year. People tend to be sceptical about such figures because growth in electronic commerce is not a straight-line trend- it comes slowly at first, then accelerates rapidly till it reaches saturation. For instance, an innovation at one Internet site may create a base that leads to the development of many other sites. The OECD further estimated that, of this commerce, 80 percent would be business-to-business (Reynolds, 1999).

Few commentators on e-commerce disagree that we are experiencing the start of a true paradigm shift though many disagree on just how big it is going to be. Forecasts on the impact of Internet commerce on business range widely. Huff, Wade, Parent, Schneberger & Newson (1999, p1) said that in estimating the increase of business-to-consumer electronic commerce from 1997 to 2000, forecasters varied from a "low" estimate of a seven-fold increase to a high estimate of 180-fold increase. Hartman, Sifonis & Kador (2000) cited International Data Corp that worldwide Internet commerce would top \$1 trillion by 2003. The research firm estimated that most of that growth was accounted for by more consumers buying online, by larger dollar amounts per transaction and by increased business-to-business purchases on the Web.

Business-to-business (B2B) is the fastest growth area in the Internet economy and its potential is just starting to be realised in some quarters. Forrester Research (December 1998, cited in Raisch (2001)) estimated that Internet-based electronic business relationships would account for \$1.3 trillion in sales by 2003. A Boston Consulting Group report (Dec 1999, cited in Raisch (2001)) placed this figure higher at \$2.8 trillion. Deloitte's e-business leader in New Zealand, Alasdair Macleod has said that 93% of e-commerce in New Zealand is business-to-business.

According to Credit Suisse First Boston Technology Group, the global B2B economic activity represented approximately \$47 per year in transactions in 2003. Of all B2B commerce, 65 percent, or \$31 trillion, is transacted electronically; 40 percent, or 412 trillion, of electronic transactions move through a third party marketplace. The average transaction fee recognised as revenue was 3.5 percent, or 400 billion, in third party global B2B transaction revenues (cited in Raisch, 2001).

The NASDAQ (National Association of Securities Dealer Automated Quotation) system is an automated, electronic quotation system for the OTC (over the counter) market, being the trading of stocks not listed on an organised exchange. The fall in the

NASDAQ for tech stocks resulted in the "dot.coms" registered on the exchange dropping in value, however it is still a listing place for many technology companies.

There is also evidence that the investment by some companies in e-commerce was affected by the impact of Y2K. The fear of Y2K prompted an upgrading of computer hardware and software both by consumers and businesses and money that might otherwise have been spent on Web site design or placing orders for products was diverted to ensuring computer systems were safe. Conversely, this investment has subsequently placed individuals and organisations in a much stronger position to effect e-commerce by having machines that are often more powerful.

According to Time magazine (February 21, 2000), the amount of time the average Internet user spent online each week increased by 31.5% in the previous two years. It is predicted that Internet users will spend an average of four hours online, per day, by the year 2025. With this amount of traffic over the Internet, it's easy to see why e-businesses need to be concerned about whether their sites effectively promote business, manage delivery and attract and hold the attention of online customers.

The largest percentage of information technology sales on the Internet and through other consumer outlets remains in hardware and software products. Intel reports a billion dollars a month of revenues from the Web, comprising 65 percent of its sales. US government estimates predicted that Internet commerce in the United States would exceed \$300 billion by the year 2002, but less than 10 percent of these sales were expected to involve pure digital information products. Ironically, the vast majority of what is being sold over the Internet requires physical warehousing and fossil fuel-powered vehicles for delivery (Lipscomb, 1999).

The real Internet sales opportunity is in the ability of millions of customers to buy digitally, pay digitally and receive digital products through digital media, instantaneously, all over the world. This market can generate literally trillions of dollars of sales annually, but firms have made very little progress in accessing these gains. Technology experts with no experience in communications media or information products have often hyped the Web's economic potential, and its poor showing has mystified them. However, anyone with real media experience understands that a medium's delivery mechanism determines what it can carry at a profit. Progress in this area was initially slow, purely because of technological delivery problems and security issues (Lipscomb, 1999) but this has changed with the uptake of broadband.

The Internet's top 22 retail Web sites earned at least \$100 million each in 1998, with at least one of them, Dell Computer Corp., taking in close to \$2 billion, according to a report from ActivMedia Research Inc. Other big earners on the list included Amazon.com, Cyberbian Outpost, Ticketmaster, Egghead.com, Gateway Inc. and Disney.com. The company added that exact revenue figures for the firms were unavailable (Diederich, 1999).

ActivMedia, which tracked the Internet's top 100 electronic-commerce sites, said that on average, the top fifty sites saw revenue above \$50 million in 1998, with the firm lowest on the list earning \$12 million. The research company, in Peterborough, N.H., said the top 100 sites varied widely, covering industries including books, stocks, travel, computers, auctions and entertainment. The report said all of the top 100 firms did one thing in common, though: "They tend to stick to their niches and often use multiple Web sites to address the needs of various markets, thereby personalising information and selling more effectively" (cited in Diederich, 1999).

Projections that online sales would explode in the next few years came as good news to small and large companies, but the numbers should sound the alarm for midsize firms, according to a report from Giga Information Group (cited in Diederich, 1999b).

Large companies would continue to dominate the business-to-business market, and along with small firms, would capture a major share of the business-to-consumer space, the report said. To survive, midsize companies were advised to quickly build an electronic commerce infrastructure, establish brand recognition and find niche market said Giga. This was due to the ability to determine market needs, to fulfil orders quickly and to build and enhance a strong partnership between supply-chain partners.

"In one growth scenario, medium-sized businesses face the risk of feeling competitive pressure from larger companies or being beaten by more nimble small companies," the report said. "Their e-commerce revenue will grow at a 75% compound annual growth rate, compared with small companies (117%) and large businesses (87%)." However, midsize companies -- those with 100 to 999 employees -- that reposition themselves as key players in niche markets stand to increase online revenue 111% vs. 124% for small businesses and 113% for large firms, Giga said. The report from Cambridge, Mass.-based Giga expected e-commerce sales to total between \$580 billion and \$970 billion by 2002 (Diederich, 1999b).

Worldwide e-commerce revenue was predicted to grow from \$98.4 billion in 1999 to \$1.2 trillion by 2003, with the U.S. continuing to generate a majority of e-commerce dollars, according to a 1999 report from New York-based eMarketer.

#### **2.2.5.1 United States**

The University of Texas business school survey said the US Internet economy, which was only \$5 billion in 1995, was estimated in mid 1999 at \$301.4 billion- a combined annual growth rate of 174.5 percent over less than four years. According to the survey, the Internet economy already rivalled such traditional sectors as energy (\$223 billion), cars (\$350 billion) and telecommunications (\$270 billion). If the US Internet economy were a nation by itself, it would rank 18<sup>th</sup> in the world, just behind Switzerland and ahead of Argentina (Lucier, 1999).

International Data Corp (cited in Hartman, Sifonis & Kador (2000)) estimated that by 2003, United States- based users would account for less than half of all Internet commerce, compared with 74 percent in 1999. Raisch (2001) cited estimates from

Forrester Research on the future of e-commerce, predicting that by 2004 in the United States alone, total online trade would reach almost \$2.7 trillion, with roughly \$1.4 trillion coming from online marketplace transactions.

The US Department of Commerce says that growth in e-commerce was "outpacing last year's most optimistic projections." The report says that between 1995 and 1998 the IT industries, "while accounting for only 8 percent of US gross domestic product, contributed on average 35 percent of the nation's real economic growth" (Lucier, 1999).

The US Commerce Department started a program of tracking sales on the Internet, which it referred to as "a major indicator of the nation's economic health" with estimates showing that \$US9 billion (\$NZ16.5 billion) was spent in 1998 through Internet channels (Law, 1999).

The Internet generated more than US\$300 billion in revenue and was responsible for 1.2 million jobs according to a Texas University study ([www.InternetIndicators.com](http://www.InternetIndicators.com)). The study found the Net was growing faster than predicted. The top 20 companies measured had significant Net-based revenues with a combined market value of US\$2.4 trillion. Sponsored by Cisco Systems ([www.cisco.com](http://www.cisco.com)), the study found that electronic commerce worldwide generated nearly US \$120 billion, or roughly 1 percent of the US gross domestic product. The balance of revenues came from computer hardware and software sales, consulting work and Web site design. (Netnews, Net Guide, August 1999).

"One of the things we realised with the report is the degree to which the U.S. is steamrolling over the rest of the world in terms of e-commerce," said Geoffrey Ramsey, statsmaster at eMarketer. Ramsey said e-commerce transactions in the U.S. reached \$29 billion in 1998. This number was expected to grow to \$98.4 billion in 1999 and to \$1.2 trillion in 2000. After the U.S., Germany had the second-highest level of e-commerce revenue with \$1.5 billion last year. Germany's projected e-commerce revenue for 1999 was \$4.4 billion (cited in Dillon, 1999).

"One of the reasons for U.S. e-commerce dominance is that the U.S. has many more users than most countries," Ramsey said. "What we've seen is that there has to be a critical mass of people online in a given country before e-commerce really kicks in." Critical mass, according to eMarketer, is between 10% and 20% of a country's adult population. "At that point, e-commerce starts to become a viable opportunity for business and we see a snowball effect," he said. A few businesses put up some interesting e-commerce sites, these sites attract more users to the Internet, and the new users, in turn, attract more e-commerce vendors, he said. Some examples of countries now on the brink of this "snowball" threshold are France, Sweden, Netherlands, Australia and Italy, Ramsey said. Globalisation is driven by better communications.

### **2.2.5.2 Australia and New Zealand**

Boston Consulting Group (BCG) (2000) estimated that the total volume of business to business (B2B) e-commerce in Australia and New Zealand would increase from A\$17 billion in 2000 to A\$235 billion in 2005- an increase from 2 per cent of total trading between businesses to 22 percent. They said the volume of Internet enabled e-commerce would increase by 265 percent annually while EDI would increase by a modest 6 percent annually, due to its continued use by companies that have already invested in these systems. BCG (2000, p4) predicted that in both countries the value of B2B e-commerce would be ten times that of business to consumer (B2C) e-commerce.

In 2000, IDC forecast that New Zealanders would spend about a billion dollars online in 2001, including business-to-business purchases and business-to-consumer transactions. The B2B component was expected to be around \$354 million (cited in Newman, 2001).

As a nation, New Zealand is a world leader in the use of ATMs and EFT-POS with a unique centralised banking system. Telecom New Zealand was formed as a State Owned Enterprise (a government owned business with a commercial focus) in 1987 out of the telecommunications business of the New Zealand Post Office (a government department). In 1990 it became one of the first telcos in the world to be fully privatised. The Telecommunications (Information Disclosure) Regulations in 1999 required Telecom to estimate and disclose the cost of the benefits that Telecom might receive from being New Zealand's only Universal Service Provider (USP). The Kiwi Share ensured free local calling, including Internet access, for all households. In 2001, about 50 percent of New Zealanders had some form of Internet access with IDC estimating that there were over a million Kiwis signed up, more than half of those surfing from home with that number estimated to double within three years (cited in Newman, 2001).

The Australian federal government and attorney general launched a draft of the Electronic Transactions Bill, creating a framework for electronic commerce and providing a “regulatory framework recognising the importance of the information economy to the future prosperity of Australia” (Law, 1999).

### **2.2.5.3 Number of users**

The Internet has seen a dramatic jump in hosts (computers that can be directly reached through the Internet), climbing from three computers at its inception almost 30 years ago to 43.2 million worldwide as of January 1999, according to a study by Network Wizards. That number was predicted to increase to 100 million worldwide by 2001 according to the United States Internet Council. About 60% of all Internet hosts now are in the U.S.

After a huge increase in online subscribers since the mid 1990s, the number of home Internet users in the United States began to stabilise at approximately 27 percent of households in 1999. At that time, the average Internet consumer spent approximately twenty-five hours per month online. AOL's Steve Case, the CEO of the world's

largest online service (with fifteen million low end subscribers who used the service for email and to surf various sites) forecast that there would be one billion Internet users by 2005. Reasons for this prediction included: consumers would soon be able to use the Internet quickly and easily to download music, video programming, films and video games anywhere in the world. IP proprietors would be able to make the highest quality products available to the largest marketplace ever at the lowest costs in history. They were facing a truly unprecedented explosion in sales and profit margins (Lipscomb, 1999). Related issues include those of copyright such as those faced by Napster, an integrated browser and communications system provided by Napster Inc. to enable musicians and music fans to make bands and music available in the MP3 and WMA music formats ([www.napster.com](http://www.napster.com)). The Napster Web site said some files may have been created or distributed without the authorisation of the copyright owner or authorised by law and it respected the prerogatives of copyright owners to control commercial uses of their material and expected their users to do the same.

In January 2000 Time Warner agreed to merge with America Online (AOL). Time Warner consists of the Warner Bros. and New Line Cinema movie studios as well as Castle Rock studios. Times Warner had thirty three magazines and importantly, cable technology. All these traditional media could ultimately be offered over the Internet. AOL delivered online services, Netscape, MovieFone, Instant Messenger and Compuserve.

Nua Limited, an Internet consulting and development company, estimated that by 2005, more than a billion people would be using the Internet; about 700 million of them outside the United States. While the initial growth of the Internet was in North America, the greatest growth in Internet use during the next few years was expected to occur in the European and Asian-Pacific markets. North America, which represented 43 percent of the online population, would account for just 30 percent of that population by 2005, according to a forecast by Computer Industry Almanac. A third of online users would be in Europe and 25 percent in Asia. Internet use in Latin America continued to grow, with approximately 10 million Latin Americans online in 2001- a number that was expected to grow to 65 million within the next five years (Jupiter Communications, cited in Raisch, 2001). Internet growth was likely to be slower in Africa, India and some remote parts of Asia where high costs and a lack of infrastructure hinder technology progress.

Increasing numbers of workers connect to the Internet every day at the office -- one of many examples that the Net is becoming an ever more important part of daily life, according to a report issued by the U.S. Internet Council (USIC). The report, called "State of the Internet: USIC's Report on Use & Threats in 1999," was a compilation of several studies done about the Net. It aimed at helping policy makers get a handle on the rapidly evolving medium.

According to one study cited, conducted by The Strategic Group, 32 million users used the Internet daily at the office in 1998, compared with 19 million in mid-1997. Thirty seven million people used the Internet at home daily, up from 19 million in

mid-1997, the USIC said. Approximately 34 million homes used the Internet for a total of 65 million hours per day (cited in Ohlson, 1999f).

A 1997 study found the average age of all World Wide Web users was thirty-four. More than four out of ten of all people on the Internet were female, a significant change from recent years. Education levels ran somewhat higher among Internet users: two out of three had attended college. Income levels were slightly higher than the general population, but those with incomes between \$US 30,000 and \$US 50,000 still used the Internet in higher percentages than their representation in the general population. Those who earned under \$30,000 were less likely to use the Internet, although the median income of those using online services had been dropping significantly, to \$48,000- an indication that not only the wealthy have decided to join the digital generation. <http://www.people-press.org/97medmor.htm>)

Meanwhile, according to International Data Corp., business-to-business electronic commerce would see dramatic growth, the USIC report noted. Commerce reached \$27.4 billion in 1998 and was expected to grow to \$978.4 billion by 2003, the council said.

According to The Industry Standard (cited in Raisch, 2001) the global e-commerce market is expanding, with sales which were expected to reach \$1.3 trillion by 2003. Ninety two percent of the world's population represents non-native English speakers, according to the World Almanac. International Data Corporation (IDC) estimated that fifty percent of Internet users in 2000 were non-English speaking and the percentage was expected to increase to 70 percent by 2004. If the global e-commerce market expanded tenfold between 1997 and 2002, from 13 billion to \$1.2 trillion as Coopers and Lybrand expected and non-U.S. e-commerce rose from 14 percent to 37 percent by 2002 as forecast by IDC, the value of non-U.S. e-commerce alone would account for more than \$444 billion.

In 1998, finance and insurance companies had the strongest Internet presence, perhaps followed by manufacturing, Gens said. Retail was next, and last were utilities and health care, he said. "Health care's in a coma in terms of their use of the Internet," Gens said. But he predicted retail and utilities would be the hot new online segments in 1999, as retailers finally decided to make the investment and utilities received a boost from the deregulation currently under way. These new companies -- as well as many Web old-timers -- would demand different returns for their Web investment than companies expect currently, according to Gens. Vendors would be asked to deliver 24-hour uptime, additional language and currency capabilities for electronic commerce, and to convert more visitors to buyers through the use of personalised, targeted offerings. One recent IDC survey showed that sites that have pitches and pages targeted to specific individuals have conversion rates that are much higher than other sites, Gens said (cited in Sykes, 1999).

A survey reported by AT&T (1996) identified a variety of Internet customers:

**New Enthusiasts:** In the past year, eight of ten people in this group had made purchases on the telephone and one in ten via the Internet. Nearly this entire group had access to the Internet at work or at home. They were among the country's highest earners with an average income of more than \$50,000 per year and were amenable to buying items via computers.

**Surfers:** Young, upscale consumers were important buyers on the Internet. This group tended to be impulse buyers.

**Hopefuls:** This group earned less than the average household and had large families but would purchase goods and services if it was easy. The people in this group when surveyed made purchases via infomercials and home shopping channels but the group may be inclined to make computer purchases.

**Faithfuls:** This group rated above average in age, income, education and family size. The report found that the people in this group were already starting to embrace electronic commerce. The survey added that this finding "is one of the most powerful indications that the future of electronic commerce has the potential to be a very bright one."

**Independents:** Three out of four people in this group had access to a computer at work or at home, but these buyers remained a tough sell. The survey found that this group wanted to touch and see products before purchasing them.

**Old-liners:** This group was generally over the age of fifty-five and had limited access to computers. The group "serve(s) as a constant reminder that not everyone in America was interested in learning about new technologies or finding new ways to do things." Electronic commerce ranked low on the list of priorities for this group.

There have been widely differing claims about the number of Internet users and the volume of sales. Some figures include 10 per cent of the population (IDC, 1998) and others, 20 percent of the population (Bernoft, Mines, Van Boskirk & Courtin, 1998). Regardless of the true figure, Internet use has been growing exponentially and will increasingly have a major impact on the way businesses are run and on how they interact with each other.

The US Internet Council, or USIC, reported that the number of computers directly connected to the Internet was 5.9 million in 1995 but had grown to 43.2 million in 1999. In early 1993, about 90,000 Americans had access to the Internet; in January 1999 the figure was 81 million adults, an increase of 900 percent. The Internet was once considered a male province, but is now divided just about evenly between male and female users. USIC said that the Internet reached five percent of households in 1994; it had reached 33 percent by mid 1999. It took the telephone 38 years to reach a market penetration of 30 percent of households, something the Internet had done in seven (Lucier, 1999).

The fastest growing part of the Internet, the World Wide Web (or Web) was predicted by Budde (1998) to have approximately 60 million users in 1997, up from 10 million users in 1990. IDC (1998) estimated the number of online users to have risen to above 100 million users by the end of 1999. It is increasingly being used for commercial purposes by companies that are attracted by the low costs of making information available, the possibilities of reaching a global audience, the opportunity to use the medium's interactivity to have a direct dialogue with the customer, to use the technology available for automating some customer service functions, to integrate various office systems, for public relations and selling products and services. The number of Web sites and content providers has also increased in the last decade. Increased quality and quantity of content attracts new users and the growth in consumers online has in turn attracted new content providers and business-based sites. The combination of strong drivers such as the proliferation of users and falling barriers such as access and cost, means that the medium is likely to continue its explosive growth, at least in the short term.

### **2.2.6 Users by country**

In August 1999, International Data Corp. issued a research report predicting that by the end of that year, almost 60 percent of the world's online population would reside outside the US, and non-US Internet commerce would explode from 26 percent of worldwide e-commerce spending in 1998 to 46 percent by 2003 (Krochmal, 1999).

The number of people connected to the Internet was predicted to mushroom from 150 million in 1999 to 500 million in 2003, but information technology vendors would nonetheless have to work hard to secure a share of the exploding Internet market, market research company International Data Corp. (IDC) said at its 1999 annual Directions conference. "Just showing up [with an Internet presence] has been a key part of the success of the first four years of the Internet economy," said Frank Gens, senior vice president of Internet research at IDC. "But the rules for success are changing." In particular, there would be a dramatic change in the profile of the Internet user, according to Gens. In 1999, for the first time in the U.S., the majority of Internet users would be women, he said. Another first would be a shift in nationality – in 1999, more than half of Internet users would be outside the U.S. and the new users would no longer balk at buying online, according to Gens. In 1999, more than half of U.S. households that were online would buy something online, and that figure was 25% worldwide, he said (cited by Sykes, 1999).

According to the Computer Industry Almanac (July, 2001) there were predictions of over 625 million computers in use by the end of 2001, up from 551.1 million computers in use at the end of 2000. The U.S. was projected to have over 182 million computers in use, or 30.64% of the total in the year 2000. The following table shows the top 15 countries and accounts for over 70% of the worldwide computers in use at the end of 2000 with projections for the end of 2001. The numbers include all computers, from PCs to supercomputers, used in business, educational institutions and homes. The numbers include adult Internet users with weekly usage in businesses and

homes. The Almanac defines Internet users to be over 16 years of age and using the Internet on a regular or occasional basis ([www.c-i-a.com/200107cu.htm](http://www.c-i-a.com/200107cu.htm)).

Rank	Country	Year End 2000 (millions)	Year 2000 % share of total	Year End 2001 (projected) millions
1	United States	169	31	182
2	Japan	48	9	55
3	Germany	32	6	36
4	United Kingdom	26	5	29
5	France	22	4	25
6	China	21	4	26
7	Canada	17	3	19
8	Italy	17	3	20
9	South Korea	15	3	18
10	Brazil	11	2	13
11	Australia	10	2	11
12	Russia	9	2	11
13	Spain	8	1	9
14	Taiwan	7	1	9
15	Netherlands	7	1	8
	Total Top 15 Countries	420	76	473
	Total Worldwide	551	100	626

**Table 2.2.6 Top 15 countries in computers in use Year End 2000 and 2001**

### 2.2.6.1 New Zealand

In 1995, New Zealand was in fifth place behind Iceland, Finland, the United States and Norway, going by the number of computers connected directly to the Internet per 1000 capita (Dias, 1995) and at that time New Zealand companies were joining the Internet at a compounding rate of 18 per cent a month. The then Communications Minister Maurice Williamson said “New Zealand’s Internet growth is high even by the Internet’s own amazing standards. In 1994, New Zealand’s Internet grew three times as fast as the global Internet” (Dias, 1995).

According to the January 1998 survey by United States-based Network Wizards, New Zealand boasted 4702 Internet-connected computers per 100,000 people - more than any other country (<http://www.kiosks.org/newsbits/1998/nb091198b.html>). This made Wellington the world’s most networked city, according to Prof. Howard Frederick. By comparison, Silicon Valley, the headquarters of highly valued Internet stocks, numbered only 3555 hosts per 100,000 people. After New Zealand came Sweden, Australia, Denmark, Canada, Netherlands, Britain, Switzerland, Germany, Japan, Italy and the United States.

In NZ although the Internet penetration (ie the number of people with Internet access) was good, the uptake of online shopping was slow (Morrison, 1999). Stuart Christie,

an e-commerce principal of Ernst and Young believed one of the reasons for the slow uptake "...was because in-store shopping was more enjoyable in New Zealand than in many other countries" (Morrison, 1999, p18). According to a survey by Ernst and Young of online shoppers, the main reason for customers to choose online shopping in countries like the United States was because "it saved time and the stores and malls were too crowded" which were problems not experienced as much in New Zealand (Morrison, 1999). In 1998, "...hardly any Christmas shopping was done online in New Zealand" (Morrison, 1999, p18). However, the number of online shoppers increased during the Christmas season of 2000 (Talbot, 2000). So some growth was seen although "...the business-to-consumer online shopping industry still had not experienced the take-off that had been anticipated" (Talbot, 2000, p23).

### **2.2.6.2 United States**

1996 figures showed that by the year 2000, the number of adults online was expected to reach sixty million. Users of the Internet paralleled the rough demographics of the US as a whole. Whites comprised 86 percent of the total number of users versus 85 percent of the general public. Nonwhites represented 14 percent of the Internet users, the same percentage in the general population, although Asians tended to use the Internet at a higher rate and Hispanics at a lower rate. <http://www.people-ress.org/97medmor.htm>)

The US had almost 52% of the world's Internet users in 1998, according to Computer Industry Almanac Inc., and the number of users was expected to grow from 76.5 million to more than 207 million in 2005.

By September 2001, more than fifty percent of Americans were using the Internet. Use grew rapidly during the year, with Commerce Dept data showing that 143 million Americans, or 54% of the country, were using the Internet as of September. The number was up 26% from a year earlier, a huge rise. The report found that while a digital divide continued, it was beginning to narrow. Between December 1998 and September 2001, Internet use by the nation's poorest citizens, those earning less than \$15,000 per household, increased at an annual rate of 25% (Dreazen, 2001).

More than half of the households in the United States had at least one computer in 2001, up from 42 percent in 1998 and more than 40 percent of these were connected to the Internet. According to a Census Bureau report (September 2001), 65 percent of children aged 3 to 17 had access to a computer at home in 2000, up from about 55 percent in 1998. The survey found significant discrepancies in computer ownership and Internet use along age, racial and economic lines. Among households with incomes of \$75,000 or more, 88 percent had a computer, while in households with incomes below \$25,000, only 28 percent had a computer. Sixty one percent of white adults said they owned a computer, while 37 percent of black adults and 35 percent of Hispanic adults reported they did (New York Times Staff, 2001).

### 2.2.6.3 Europe

The average number of households accessing the Internet almost doubled in the European Union's (EU) 15 countries, but dropped to a mere 8.3%, between 1997 and 1998, according to a Eurobarometer survey from the European Commission. Northern residents, however, were far more plugged in than their southern counterparts, according to the study called "Measuring Information Society 1998." Swedes came out on top, with 39.6% of the population accessing the Internet at home. Sweden was followed by Denmark (24.6%) and the Netherlands (19.6%). Scandinavian countries were widely reported to have more Internet users per capita than any other country, including the United States.

At the low end of the scale, only 2.9% of all Greeks accessed the Internet at home, the Eurobarometer found, followed by 3.4% of households in Portugal, 3.9% in France and 5% in Spain. UK Internet use in the home stood at 10.7%.

While 27 million people in the EU used the Internet from their home, approximately 22.4 million used it at work, representing 13.3% of the working population. In countries where home Internet use was high, so was business use of the Net, the survey indicated.

A lack of need was the main reason reported for the low interest in Internet services: 55% of respondents said they had no need for such services; 24.2% said the services were too expensive; 21.5% said they didn't have the necessary equipment; and 18.2% found the whole issue too complicated.

Regarding basic computer use, an average of 30.8% of EU citizens used PCs at home, again with the majority of use in the northern countries: 59.8% of all Swedes used computers at home, followed by the Dutch (58.8%) and the Danes (56.7%). At the other end of the scale, only 12.2% of Greek citizens used computers in their home, while 18.4% of all Portuguese, 22.8% of all French and 26.6% of all Italians used computers at home.

Although only 11% of European Internet users made online purchases in the last three months of 1998, that figure was predicted to grow to 25% by 2002. In that same year, IDC predicted Internet usage would swell to 35% of Western European customers, which was about the same level it had been in the United States in 1998. It was anticipated such changes would however be slow to filter through to the European corporate sector, frequently perceived by Americans as overly conservative.

Certainly, European consumers have erred on the side of caution when it comes to Internet commerce, but Stefan Elmer, a European research analyst at IDC, dismissed the idea that Europeans were against buying online. "Europeans are definitely not against doing business on the Web- they just need to see a clear reason for doing so", he said (McGrath, 1999).

Booth (cited in McGrath, 1999) suggested UK and German customers were more comfortable shopping and purchasing goods via online media services, whereas southern Europeans seem to be more tied to personal relationships with local shop owners. Firms have needed to act quickly to capitalise on the opportunities presented by new markets. Companies have needed to think globally but act locally to maximise their opportunities in e-commerce, and local marketing needs to be backed up by local infrastructure. The US-centric Web site, where customers buy in US dollars and ship by FedEx, was simply not going to cut it in Europe, according to Levy (cited in McGrath, 1999).

#### **2.2.6.4 Australian and NZ e-commerce figures**

Results of research on business use of the Internet vary greatly but it is generally agreed that the fastest growing group of Internet services users are commercial enterprises. A comprehensive survey conducted by the Royal Melbourne Institute of Technology of Australian Internet users in 1995, found that most businesses had been using the Internet for less than a year and the main uses were electronic mail and research. More than half the businesses connected had more than 200 staff. Almost half the companies had their own home page, in effect, an electronic storefront, making the Internet a popular advertising platform (Banaghan, 1995).

According to the January 1998 survey by United States-based Network Wizards, New Zealand boasted 4702 Internet-connected computers per 100,000 people - more than any other country (<http://www.kiosks.org/newsbits/1998/nb091198b.html>). This made Wellington the world's most networked city, according to Prof. Howard Frederick. By comparison, Silicon Valley, the headquarters of highly valued Internet stocks, numbered only 3555 hosts per 100,000 people. After New Zealand came Sweden, Australia, Denmark, Canada, Netherlands, Britain, Switzerland, Germany, Japan, Italy and the United States.

Ernst and Young sent questionnaires to 500 CEOs of the largest companies and organisations in New Zealand in November 1998. The 103 who replied were distributed fairly evenly across industry and revenue classes. The study found that in New Zealand, e-commerce wasn't enjoying the same welcome and uptake that it had received elsewhere. Less than half the respondents had invested NZ\$50,000 in e-commerce initiatives, while 40 percent said that they had no e-commerce Web presence at all. Less than seven percent of respondents saw themselves as innovators - a fact that seems at odds with Wellington being the most networked city in the world and Wellington as the capital city, as the most net-connected in January 1998.

In its survey of 220 companies in Australia and New Zealand conducted by Delta Outlooks for IBM (cited in Bell, 1999), 76 percent of businesses in Australia and New Zealand rated e-commerce as an important business strategy. However, only 35 percent of these businesses had a strategy in place. KPMG, in its more recent survey, found significantly better planning; although only 33 percent of the respondents indicated that they had allocated sufficient skilled resources.

Research indicates that New Zealand's smaller businesses have not been as quick as larger firms to take advantage of the Internet and e-commerce (Ministry of Economic Development, 2000, p4). The survey from the Information Technology Policy Group of the Ministry of Economic Development (2000, p1) indicated that although New Zealand businesses were well prepared, they had yet to come to grips with the implications of e-commerce. While two thirds of businesses claimed to be engaged in some type of e-commerce with other organisations already, only about one in ten had integrated this activity with their internal business systems.

The Business Practices Survey undertaken by Statistics NZ in June 2001 with a sample size of 2,756 enterprises found that 36% of New Zealand businesses had a Web site and the level of sales generated through the Internet was estimated to be 0.3 percent of total operating income of New Zealand businesses. Seventy nine percent of these businesses regularly used email, with the most common use being to communicate with customers and suppliers. Eighty percent of businesses used information technology for accounting systems (<http://www.stts.govt.nz/domino/external/pasfull/pasfull.nsf/7cf46ae2dcb6800cc256a>).

Large organisations change slowly: heavily ingrained structures and processes are often apparently immovable and change takes time to percolate through. Meanwhile, small organisations don't take up new technologies quickly unless they perceive immediate advantage in doing so, or immediate disadvantage in not making the move.

New Zealand businesses do have some e-commerce success stories to tell but, as KPMG's Aaron Kumove pointed out, overall, conservatism still reigns. "There's a lot of thinking and planning going on and companies are now spending money on e-commerce technologies, but there haven't yet been a lot of major initiatives rolled out," he says. "But I think this strategic planning and technology spend will soon translate into some serious e-commerce initiatives" (Bell, 1999).

### **2.2.7 Summary**

The first section of the literature review began by following the Internet from its military origins to present day commercial and popular use. Next, key terms were defined and described including e-commerce, e-business and Internet commerce. The technologies that enable commercial transactions on the Internet were covered and the number and type of users were explored. The section concluded with a focus on the New Zealand e-commerce figures.

The Internet has enabled business to circumvent some of the shortcomings with EDI, allowing companies to use middleware and Web based forms to deal with smaller suppliers. While there has been a worldwide increase in the number of Internet connected computers and users, there have been a number of impediments to the widespread uptake of e-commerce, both from a business and consumer perspective. Lack of bandwidth has caused congestion with the limited speed of data transfer and slow connections frequently meaning access to Web sites has been frustrating. Lack

of unbiased useful information on e-commerce has meant concerns on aspects such as privacy, security, consumer rights, financial transactions have often been unanswered.

NZ has been named as the world's most Net connected country but as yet hasn't exploited e-commerce opportunities. A number of retail sites found that they needed to pay greater attention to back-office systems such as inventory and customer service to support their Web presence.

## **2.3 Advantages and Disadvantages of Internet Operations**

### **2.3.1 Introduction**

The third section of the literature review examines both anecdotal and documented comments from organisations about the advantages and disadvantages of being on the Internet.

The Internet has created a number of trends that have implications for businesses existing solely or partly online. One is mass customisation where products can be mass-produced and still be tailored to buyers' specific needs such as Dell Computers and Levi's Jeans. Another trend is digitalisation where the physical reality is separated from information such as "virtual" communities on the Internet. Convergence is another trend where several products and/or technologies merge together such as television, telephone and Internet all through the same device. These trends are already changing the face of business and both traditional viewing and delivery methods. They and other trends bring both exciting possibilities and benefits to businesses but also have negative implications for traditional organisational cultures and operating models.

### **2.3.2 Anecdotal evidence**

The importance of being connected to thousands of interlinked networks is important to business users for the unprecedented access to global low-cost communications. The Internet is seen as an enabling mechanism for a growing body of electronic commerce and services therefore being viable as the electronic trade route for the next century.

While retail players like Amazon.com and eBay are almost constantly in the news, entire industries have shifted to the Internet. Not only supply chain management, but also enterprise resource planning and other automation packages have sped the move to the digital economy. "Within five years, all companies will be Internet companies", said Intel chairman Dr Andy Grove, "or they won't be companies." Patty Seybold (1998) expressed a similar sentiment namely "if you aren't online, you'll be out of business by 2000."

The Internet has provided competitive advantages for organisations in a range of ways. One way is the range of new marketing opportunities for firms to reach users, who often fall outside the reach of traditional media. Mercedes-Benz's Internet site

provides detailed information on the firm, its car models, the technical specifications, local dealerships and pricing. Cars are not pictured in exotic settings but the basic information needed, including pictures, is provided.

A New Zealand example is Precision Engineering Company (PEC) who manufactures petrol pumps. They have been on the Internet since 1990 and use the connection for a range of functions including providing 24 hour support, sending design files to Singapore, swapping product specification files with suppliers, maintaining an internal home page (or intranet), accessing internal and external mail and maintaining company documentation. It is also invaluable for contacting staff in Cape Town, Rio de Janeiro, Melbourne, Sydney, Malaysia and the United Kingdom. Management see the biggest gain has been in research and asking questions on technical issues. Searching the World Wide Web for various products they want to use is helpful and problem solving through Internet email has meant quick access and a reduction in paper.

### **2.3.3 Research based evidence**

Tabor (1998) looked at how companies are measuring the success of e-commerce and whether the appropriate strategy is driving business growth. She said research in e-commerce can help determine whether Internet commerce represents incremental competitive advantage, an extension of traditional business processes, or a paradigm shift in the structure of electronic markets and the use of information technology. The study revealed that for the firm investigated, electronic commerce over the Internet was an appropriate and successful tactic in support of the firm's business strategy low-cost provider competitive positioning.

Evidence supported the synergistic relationship between business strategy and strategic fit for this successful electronic commerce project. The study also determined that depending upon the e-commerce strategy, business processes might be minimally affected, rather than dramatically changed as often predicted in electronic markets. Additionally, the historical use of technology is not necessarily a predictor of success or failure in electronic commerce. The firm's very conservative use of technology was successful in a new and innovative area that supported its overall business strategy and focused on its core competence. .

While there are numerous examples of large organisations using the Internet for competitive advantage, one of the founders of Akiko, an American-based Internet site dedicated to information about New Zealand had another view. It was that fish and chip shops, corner dairies and service stations should look to the Internet for customers as it is important for small businesses to realise that information is essential and the Internet's World Wide Web is not just for the big companies as it can be used for research, competitor and regulatory information (McDonald, 1996). Another view is that while the three examples given may not necessarily find more customers via the Internet, they can certainly access a range of useful information about suppliers, perform online banking, find out product information and so on.

There are many reasons, Aaron Kumove of KPMG thought, why New Zealand businesses have been slow on the e-commerce uptake. "Culture is perhaps one of them. The willingness to manage risk is another. There are two ways one can look at risk: It can be equated with fear and failure or with managing opportunities. The people who've gone out there with successful e-commerce ventures in an aggressive fashion have embraced the risk. They've said, "I understand the risks and I'm going to manage them"- with the proviso that the return is potentially greater than the risk. This isn't unique to e-commerce, but the difference with e-commerce is that it's shifting the rules of the game. Many people feel that it's a major discontinuity in terms of the way they've always done business. There are people who are conservative, who are afraid of it, who don't want to upset the apple cart, and others who are visionaries, who can see the opportunities earlier and are more comfortable managing the associated risks and potentially greater returns" (Bell, 1999).

In addition to company concerns about culture have been concerns about costs. The opportunities are there but every customer transaction must be seen to add value to a future transaction. The Butler Group has said for every dollar spent building a Web site, a company must expect to spend ten times that plugging into the information flow: advertising and promoting the site to address these so-called "network externalities" (Bell, 1999).

Factors associated with e-commerce 'false starts' by John Brennan, Andersen Consulting (cited in Bell, 1999) are early over-ambition; lack of integration with the organisation's strategy and infrastructure; failure to adapt strategy, infrastructure and mission; focus on the Internet to the exclusion of existing channels (risking large investment for low returns); unfamiliarity with customer needs; rapidly changing customer behaviour; lack of sustained executive commitment, inadequate resourcing and maintenance planning, implementation shortfalls; public confidence issues, privacy and consumer rights concerns; public concern over lack of privacy of their personal data, destroying the organisation's credibility.

Some of these problems have been due to e-business notions reshaping commerce, turning old ideas on their head and requiring completely fresh approaches especially in B2B but also in B2C. The Internet has driven down the cost of handling information quite dramatically, making it possible for commercial enterprises to turn the tables on competitors. In other situations, competitors may find themselves working together as partners, with each entity leveraging the other's special competencies with speed, agility and flexibility becoming the top priorities. The Internet has also led to the value chain being of greater importance than the supply chain. Access to new markets and additional segments of existing markets have become easier than was previously possible. Among e-businesses, service and quality costs, agility and reach have gone down, significantly enhancing the ability to provide value to customers while taking the competitive lead (Deise, Nowikow, King & Wright, 2000).

### **2.3.4 Summary**

Inconsistencies in the data on user acceptance are similar to the comments that have been made about the statistics of market size. Many reports say that security concerns are a key barrier to the uptake of Internet commerce, particularly in the business to consumer market. Other reports have stated the opposite and instead see lack of evidence that electronic commerce has business relevance as the prime reason that companies have held back from the Web (European Commission, 1997). Other reports found a mix of reasons with none dominating with the perception of barriers to electronic commerce seeming to be quite different between the USA and non-US parts of the world (CommerceNet, 1998). Both the anecdotal and research-based evidence has suggested that Internet business is not "business as usual" but neither should traditional business methods and strategies be entirely abandoned. The size of the market and supplier base has expanded, the necessary speed of response has escalated and the requirement for interfacing Web and back office systems has become essential.

## **2.4 Management of a Solely or Partly Internet Based Business**

### **2.4.1 Introduction**

The fourth section of the literature review examines aspects pertinent to the management of businesses that are either "bricks and clicks" (ie they have a physical and a virtual presence) or exist solely on the Internet. Key issues of managerial and staff commitment are examined. Lessons from the fields of product development, IT project development and software engineering are applied to the Internet in the following section.

### **2.4.2 Managerial commitment**

"Strategy is half deciding what to do and half what not to do" according to Kevin O'Connor, CEO of Internet advertising company DoubleClick (cited in Hartman, Sifonis & Kador, 2000, p5). The authors say the E-economy demands CEOs who can think paradoxically and acknowledge that the strategic landscape can be neither predictably known nor systematically addressed. According to them, formalised strategic thinking, as recommended by Michael Porter in his book *Competitive Advantage*, is doomed to failure in an ever-changing and technologically driven business environment (Hartman, Sifonis & Kador, 2000).

From its early start in consumer goods companies, the product management concept has rapidly spread into other industries. Ames (1981) said successful product management groups are distinguished by four basic approaches to planning. First, written plans are developed for product lines incorporating in some form the five basic elements: overview of industry characteristics, review of current business, basic product strategy, future goals and programs and a performance summary. The aim of the written plans is to define explicitly product and market needs and opportunities and indicate what can be done to meet and exploit them. A written product plan reduces the risk of planning gaps or outright errors and provides a far better basis for top management evaluation.

The second approach is focussed on those areas that can make or break the product and the third involves moving across organisation functions to focus on activities crucial to product success wherever they are located. Personal stature and top management support is required to avoid organisational conflicts. The fourth and final approach is concerned with continuous planning rather than a one-off effort. This involves following up on actual results, initiating new plans and modifying old plans to ensure goals are achieved.

In order to accelerate change towards e-commerce, management needs to drive communication and demonstrate commitment through overt actions such as that outlined in the product management concept. Networks are likely to need redesigning to support change and continuous improvement around process and culture, increasingly so as the business is involved with supply chain and demand chain partners. During the development cycle for example, customers and suppliers must actively participate in establishing a collaborative environment for the development of services. Company employees need to learn to work directly with their partner company colleagues. To create value-added relationships, networked companies must engage in an open exchange of information and ideas.

The vision for change in an Internet organisation needs to be much clearer than that of a traditional company because much of the business is intangible. The necessary speed of innovation and change makes communicating the change vision critical. "You've got to evangelise the concept," said John Chambers, CEO of Cisco Systems (Fortune, 1999).

Organisations that have different cultures may have problems working together. Companies need to adapt and embrace change as their industries are transformed by the nature of the Internet. Those potential partner companies that are risk-averse and avoid change may not be ideal partners with whom to form alliances, as the impact of one company's actions, positive or negative, will directly impact the success of others.

In conjunction with open communication and compatible cultures, new models of behaviour are needed in this radically changed business environment. Management must ensure that employees are aware of what new behaviours are necessary and in many cases, must literally reinvent itself as it leads by example in the face of changing roles throughout the company. Management needs to select individuals who model the behaviours required to meet the challenge of change and who can serve as mentors or instructors for others. Changes in a company's business model also bring changes in employee evaluation metrics that must measure skills and attitudes with regard to external relationships.

### **2.4.3 Staff commitment**

Employees need to know the company's business model in order to manage change successfully. Employing Internet or e-business strategies and technologies frequently alters the business and open communication and employees' willingness to accept and

promote change is essential. Embedding innovation into the company and into the individual learning environment makes possible the evolution of the business model and helps the company adapt to the constantly changing environment. In such an environment, managing change becomes everyone's responsibility.

#### **2.4.4 Product Development and IT Project Development**

The product development structure and software engineering are both relevant to the development of an Internet presence. There are a wide range of stakeholders with management, general and technical staff, marketing, communication and human resource personnel, graphics experts and both retail and business customers. The next part considers the impact of these on the design and implementation phases.

##### **2.4.4.1 Product Development**

“A host of environmental forces, including changes in consumer and competitor behaviour, technology and government policy have combined to make product innovation a vital element in the formulation of corporate strategy and planning” (Rothberg, 1981, p3). The development of new products and services is a difficult and challenging task. The innovation process itself is complex with the co-ordination and control of a multitude of other tasks often in an environment of uncertainty and very limited information.

“Product innovation” like “product” can be defined in several different ways. A product may refer to a physical entity or a cluster of anticipated customer benefits depending on whether the perspective adopted is that of the business or that of the market. That which is considered a product innovation by a business may not be recognised as such by its customers (Rothberg, 1981). A change in the chemical makeup of a product may not be consciously recognised by the customer while an otherwise unchanged product may be repositioned in the customer’s mind by major changes in advertising and pricing designed to stimulate new users and new uses.

Two trends in the marketplace tend to stimulate product innovation: the increasing instability of consumer preferences and the growing intensity and sophistication of competition. Growing markets, rising discretionary incomes and changes in technology also affect product innovation, often leading to radical changes in the character and size of established product markets.

Schumpeter (1950) used the phrase “the gale of creative destruction” to refer to competition that breaks the commonality of a technology base, such that the survival of disadvantaged firms may be threatened. The latter have no choice but to respond in kind if they are to maintain or regain their former marketplace position.

According to Utterback (1994), an emerging technology will show signs of slow growth in the beginning where a reluctance to adopt the new technology is seen but if the new technology has the potential to deliver dramatically better performance or lower production costs, then it is capable of surpassing the established technology. This theory seems to fit with what is being seen with e-commerce. Utterback (1994)

also stated that the established technology would generally offer better performance at the time when the invading technology was first seen. The technology performance can be illustrated using the S-Curve or a product performance curve, which shows the technological progress from infancy to maturity (Foster, 1986).

In 1996, the Internet seemed to have reached a rate of adoption in the United States- roughly 10 to 25 percent of its total market- that indicated the system would gain users even faster than the previous few years. The adoption rate of between 10 and 25 percent of the total potential market remains crucial in what is known as “the diffusion theory” based on the work of Professor Rogers of Stanford University. The theory contends that once a technology has diffused into a segment of 10 to 25 percent, the rate of growth will increase dramatically. These patterns have held true for the adoption of radio and television (Rogers, 1986).

Each stage of a technology is associated with different strategic implications. Utterback and Abernathy (1975) say, "The earliest stage in a technology's life cycle tends to feature frequent major product innovations, heavily contributed by small entrepreneurial organisations, often closely tied to lead users' needs. The intermediate stage of a technology may include major process innovation, with continuing product variation, with increasing numbers of competitors, both large and small. The late stage of a technology features less frequent minor product and process innovations, contributed primarily by large corporations, motivated mostly by cost-reduction and quality-improvement operational objectives" (cited in Roberts, 1987, p18). An organisation's planning needs to anticipate and encompass each stage.

Managerial research has repeatedly demonstrated that 60 to 80 percent of successful technical innovations seem to have been initiated by activities responsive to "market pull", ie forces reflecting orientation to perceived need or demand (Utterback, 1974; Gerstenfeld, 1976; Rothwell, Freeman, Horlsey, Jervis, Robertson & Townsend, 1974). This demonstrates the importance of market research and being responsive to the customer base as part of the planning phase related to organisational products or processes.

#### **2.4.5 Summary**

This chapter highlighted the importance of initial and continued managerial support for either a solely or partly Internet based business. The role of organisational culture and commitment was discussed as well as the importance of mentors and models for new ways of working. The need to communicate change and have compatible cultures within and between organisations was emphasised.

## **2.5 Overall Planning**

### **2.5.1 Introduction**

This section of the literature review examines aspects relevant to the planning process when gaining an Internet presence including business transformation.

## 2.5.2 Planning

Planning has been called “the first...but the least understood of managerial functions” (Brickner & Cope, 1977, xiii) and is a program of selecting goals and determining how to attain them. Brickner & Cope (1977, p2-3) define it by saying, “Planning is a process by which an individual or organisation decides in advance of some course of action. The process consists of a series of steps, some of which may be taken immediately, to reach desired goals” and “the goals of any organisation encompass its purpose, its mission and its objectives” (Leiper, 1989, p94).

Strategic planning focuses on the formulation of an organisation's goals and objectives and upon the policies needed to achieve those objectives, including identification of the organisation's primary resources and priorities. Roberts (1987) says corporate strategic planning as a field of practice has evolved. In the 1960s multi-year budget projections became the earliest forms of financial planning (sometimes labelled "long-range planning"). In the 1970s market growth/share matrices and market attractiveness considerations added a new dimension to strategic analysis. In the 1980s technology as a strategic factor became so widely acknowledged as to cause firms and even countries to realise that financial, marketing and technological considerations needed to be integrated in overall strategy development (Roberts, 1983).

Cooper & Zmud's (1990) six stage model of IT acceptance has been slightly modified from the 1987 proposal by Kwon & Zmud. The six stages are: "initiation, adoption, adaptation, acceptance, routinization (incorporating into usual routines) and infusion" and the later four are identified as occurring beyond the initial decision to adopt and install a new technology.

Turban, Lee, King & Chung (2000, p307) suggest planning and implementation for electronic commerce needs to consist of four steps: industry and competitive analysis, strategy formulation, implementation and assessment. These steps include human, technical and business needs.

The success of Internet initiatives is directly affected by the company's ability to develop a strategic plan and to work to it. To reduce the risk of failure due to lack of existing infrastructure, the strategic plan must identify the major e-business growth initiatives for all areas of the company. The strategic plan should be able to identify gaps in existing practices. Benchmarking against competitive practices may provide one means by which a company can evaluate the impact of a strategic plan.

Strategy formulation consists of the development of long-range and strategic plans for the effective management of environmental opportunities and threats in the light of business strengths and weaknesses. It involves examining or redefining the business or project mission by specifying achievable objectives, developing strategies and setting implementation guidelines for electronic commerce which may consist of a storefront, extranet or an electronic mall. The organisation's mission states the purpose for its existence and tells what the company is providing through electronic commerce. The

company will form objectives for each electronic commerce project based on its electronic commerce mission. Whatever the level of e-commerce involvement, a company has to develop strategies to meet its goals. Unless companies plan and reengineer their organisations appropriately, electronic commerce implementation may not be followed by sales or successes in efficiency, cost saving and links with partners. The level of commitment to organisational redefinition has a bearing on the likely success of any electronic commerce initiatives pursued (Turban, Lee, King & Chung, 2000).

To succeed in the new economy, those intending to do business on the Internet need to consider carefully what is involved, understand the digital infrastructure required to participate, and develop and execute a coherent plan of action. Web strategies should be appropriate to company size and scope and adapted to the competitive situation, industry focus and available resources. Also critical to success is ensuring that the organisation's e-commerce strategy works at a short-term and long-term level, ensuring rapid time-to-market while also incorporating defined plans for future initiatives (Raisch, 2001).

The following sell-side and buy-side processes (relative to the customer) must be reengineered as part of channel enhancement: marketing, customer management, sales (including order management) and procurement of indirect materials. To implement these process changes it is necessary to clearly define the processes themselves during the planning phase. Employees representing different areas of the business should be involved during the design, construction and implementation of new processes, facilitating the buy-in necessary for the processes to be successful. During the planning and design phase employees should be assigned ownership of the processes. As part of their responsibilities, those representatives on the design team should educate members in their functional area on the new processes and seek suggestions to feed back to the design team.

Deciding to adopt e-business involves a number of steps: planning, investigating and evaluating costs and returns, designing a Web site and the necessary infrastructure to support an online presence, implementing an e-business strategy, operating and maintaining an Internet-based or enhanced business.

By placing all contributors toward a given objective in the same group, under a single leader, the project organisation maximises co-ordination and control towards achieving output goals (Marquis & Straight, 1965). However, project structures have a fundamental flaw that seriously affects many technical organisations according to Roberts (1987). He says that the project form tends to remove technical people from organisational groups in which they interact with colleagues of their own discipline. If the project is of long duration, especially when the technology base is rapidly changing, the technical skills of the project members may erode over time (Roberts, 1987).

Aaron Kumove, KPMG's New Zealand's electronic commerce national service line leader, said "I don't think that e-commerce is that much different from any other kind of project in that you have to lead with a business perspective on it, not a technical perspective. Selling technology for the sake of it is probably not going to win, nine times out of ten. Selling a business vision is a better way to do it." The trick, according to Kumove, is in managing to bridge the gap between the technology and the direction the business wants to take" (Bell, 1999).

### **2.5.2.1 Transforming the business**

Gloor (2000) says a company has two ways of adopting e-business, either doing a bottom-up e-business transformation or transforming itself into an e-business from the top down.

A company can automate its existing business procedures by using e-business technologies such as document management, workflow systems, tools for collaboration or packageware to effect bottom-up e-business transformation. A company is performing top-down e-business transformation if it fully embraces the new Internet-based economy, questioning its current strategy and coming up with a new digital business model.

Companies that create an effective Web presence can streamline operations, shorten response time to customer requests, gather more market data, increase their reach, offer richer information on their products and services and ideally sell greater quantities. Application integration is the key to e-business (Kalakota & Robinson, 2001). Successful process integration requires a major application overhaul in order to develop an integrated front-end/ back-end infrastructure to overcome process inefficiencies, inaccuracies and application inflexibility.

Adopting information technology has not necessarily been analogous with effectiveness (Baronas & Louis, 1988). Probably the major reason that information technology is not as effective as it could be (and in some extreme cases actually facilitates inefficiency and ineffectiveness) is that organisations fail to make necessary changes that will more readily permit the integration of such systems (Rossetti & DeZoort, 1989, p29). The concerns expressed by these authors are all too realistic when considering the introduction of an organisation to the Internet environment.

This view is also stated by Deise, Nowikow, King & Wright (2000), who say that if an organisation's adoption of e-commerce is successful, it can literally take over the business and have a huge organisational impact. Increased activity through the Internet can fragment a company by placing great pressure on the sales force and then on the company's back-end processes and those who carry out those activities. Even if a company doesn't intend to disintermediate (remove the layers of intermediaries between sellers and buyers) its distribution network of internal sales people or outside distributors, an Internet sales channel that ties directly to the customer can undermine all of the relationships that have built throughout the offline sales and distribution

system. The company may need to mediate channel conflicts in its own organisation and within its network of business partners.

Regardless of whether an organisation is selling to multinational companies or a handful of local customers, a strong commitment is necessary to become equipped for Internet business. If the Internet is to be an integral part of the way a company operates, the effort to "gear up" for e-commerce and an Internet-enabled value chain must be understood and accepted by key functional areas within the organisation as well as management. This commitment and understanding is necessary because each step down the path towards full integration has deep implications for business processes and organisational culture. Company leadership must be willing to commit the resources in people, money and focus necessary to carry e-commerce deployment through to fulfilment. Managers and employees must embrace new tools and processes for internal communication, sales processing and customer fulfilment. Regardless of what stage of its Web development and involvement a company is at, the organisation is being asked to transform itself, adapt to new ways of working and deliver customer value.

Businesses need to consider how the Web site will combine with other business activities and what changes are required as a result. Electronic commerce may lead to the realignment of current business procedures to maximise the long-term benefits for the company as integrating existing databases and applications with Web-based new applications is not a trivial task. It is essential to have senior management involvement, as the potential impact of the integration on the functional areas of the business as well as the technical sophistication of the new systems can be quite disruptive.

### **2.5.3 Summary**

This section of the literature review stressed the need to plan carefully for all phases of Internet business. As previously emphasised, management and staff communication and commitment to the project must be high and the project fit within the context of the organisation's vision, mission and strategic plan. The importance of the planning and design team was highlighted. Integration of existing systems and procedures with e-business technologies is crucial.

## **2.6 Design**

### **2.6.1 Introduction**

The sixth section of the literature review explores aspects relevant to the design process for an organisation's Internet presence. There are a number of pertinent aspects including whether the design and development is outsourced or performed in-house as well as the business and customer needs. The technical requirements and interface design issues of Web pages are addressed. These are followed by a competitive analysis to ascertain what other businesses are doing online as well as a cost benefit analysis for successful projects. This section concludes with a look at how the decision to proceed was made on various projects.

## 2.6.2 Internal or External Design and Development

This first subsection looks at the decision whether to contract out development of an organisation's Internet presence or to design and develop it in-house. Where it is known, mention is made of whether a reasoned make or buy decision was made. The section starts by drawing attention to some of the issues that frequently cause problems in organisations in terms of the role of their Web site and the content and design issues.

One of the barriers to success named by Hartman, Sifonis & Kador (2000) is "putting lipstick on a bulldog." Companies "webbify" old business practices or models by sticking on a Web front end without regard to underlying process issues. They end up with a broken and inefficient process that has a pretty user interface (a good looking bulldog). The authors say another barrier to success is "islands of Webbification" where companies engage in the creation of discontinuous and nonsynergistic applications or pockets of e-business that are often redundant, without driving towards an overall direction. Hartman, Sifonis & Kador say this characteristic is endemic to most companies of any reasonable size.

New systems need to work with existing or legacy systems within an organisation. Enterprise integration links sales, production and delivery processes and systems electronically into one seamless flow of information among a company, its customers and its partners. Integration between new and existing systems allows an organisation to most effectively help it serve its customers better. According to Deise, Nowikow, King & Wright (2000), the key technology issue for application integration involves the way that an e-business configures applications that are based on different technologies and with different business processes and data models to work together in a common way on a network. The challenge for a company is to understand how best to accomplish the appropriate degree of integration. In its simplest form integration of a company's existing systems with its Internet presence may mean the ability to export data files from one application and import them into another, possibly after undergoing some translation between different data formats.

Another aspect for a business to bear in mind when they are considering having an integrated Internet presence is that of internal records and the way they affect business processes. This would include follow up of staff turnover, personal appraisal interviews and notes taken, records of leave and other business intelligence. Information management in companies is often poor. Consideration needs to be given to whether business information is centralised or localised and both the Internet site and the intranet are dependent on accurate and up-to-date information.

Value chain integration is the joining together of business processes and information systems among customers, companies, suppliers and other business partners to seamlessly transact business (Deise, Nowikow, King & Wright, 2000). Value chain integration requires the ability to electronically communicate and integrate information through the entire relationship, from helping customers design or buy products to

communicating requirements to suppliers through production and delivery. The Internet is a cost effective technology that is able to facilitate value chain integration. Companies with fully integrated value chains can provide customers with a higher level of service, giving them a true competitive advantage. Companies are using the Internet to sell products, receive orders and send order information directly to their manufacturing systems. Enabling the supply chain with e-business technology has helped companies achieve a 20 percent or better reduction in supply chain costs (Deise, Nowikow, King & Wright, 2000). If an organisation wishes to realise these efficiencies either immediately or at some time in the future, this has implications for Web site design.

In addition to anticipating customers' needs, viewing customer information as a strategic asset for both parties and treating each customer as a unique entity with unique needs and desires, a company Web site also provides a single corporate or company face to the customer. It is essential to do this wherever the customer may interface with the company through different departments, in different locations and at different times. Customers increasingly expect integrated, seamless and multi-channel customer service. Deise, Nowikow, King & Wright (2000) write of e-enabled companies that have information systems allowing them to be customer-centric and engineered around customer information touch points. These companies can provide simplified, effortless ordering, personalised Web pages and significant customer service. Once again this illustrates the level of complexity that needs to be factored into the Web site design process and the ramifications for the entire organisation.

#### **2.6.2.1 Plan for the organisation's Web site**

Business success on the Internet involves planning and preparation including strategic thinking, targeted marketing, network systems development and state-of-the-art technology. Planning the Web site for a business, including what products and information will be available, should be in direct correlation with a company's fulfilment capabilities. How the Web site looks, what is offered and the ease of delivery are critical to attracting and retaining new customers. The upside of having a Web site is to increase business as well as performing business more effectively and efficiently. The downside is not having enough capacity to fulfil customers' needs whether through incompatible back-office systems or insufficient staff or products.

Strategic planning is essential not only to create a "sticky" site (one that visitors will explore and return to) but also to ensure that it will interface with all aspects of the business successfully. Hartman, Sifonis & Kador (2000) say most companies have not seen truly transformative impacts of competitiveness and value creation. Their research shows that most organisations have deployed e-business initiatives on an ad hoc, somewhat opportunistic basis insufficiently supported by the structural requirements to execute competently. These organisations have sunk unmeasured resources into e-business initiatives without seeing results anywhere near the returns they expected and have little or no clue about the total costs of ownership of their Web initiatives nor about how they would measure any positive return on investment. The

investment in new information technology is a key decision for both managers and highly skilled knowledge workers (Karahanna & Straub, 1999).

An organisation needs to research customers to find out what they expect from its Web site and if they will use it. They could be asked what they think of other online services they use –what they don't like and what they do, the things they find useful and the sort of information they'd like to see included. This will ensure a good starting point for the content to include on the site and may save the organisation from some pitfalls.

Another aspect to consider is the other audiences that an organisation may attract by being online. The site isn't constrained by business hours or geography so the organisation's systems need to have the capacity to cope with an international audience.

Probably the biggest mistake that can be made is to develop a site without a clear idea of what it is intended to achieve. Consideration needs to be given to whether an organisation's site will be used to sell products or services or whether it will serve as an information brochure. Online selling needs security for online transactions, linking it to the inventory database and responsive feedback and inquiry services.

Thought needs to be given to the focus of the site and whether the organisation wants to build an online community. Two good ways of doing this are mailing lists and discussion forums. The planning team needs to think through how these will work and the content to be used. A mailing list originating from a database that customers join online can be beneficial when offering something of value but may backfire in the forums if misused for junk email posts. An important aspect is considering what competitors offer online- both national and international.

When considering a Web presence, clear goals are essential. The kind of audience targeted should implicitly affect the information contained on the Web site. If the organisation is planning to sell services on the Web, an understanding is needed of the effect this will have on the existing channel. If the site will sell goods and services directly to end consumers, thought needs to be given to the efficiency of the processes. Perhaps the Web site should be integrated with the inventory system so the moment that an item is out of stock or there is a surplus, the item can either be taken off the Web site or presented as a special. The organisation may want the capability to tune the system so that when the price of a product changes this is immediately reflected online. This can however uncover holes in existing processes so thought should be given to how well equipped the organisation is to handle instantaneous purchases. Another aspect is that while some customers will purchase items out of convenience, others will expect some price advantage for buying online (Bell, 1999).

The Internet is an untidy system with millions of individual pages. When developing a site's content it is important to consider the links that tie them together and how users will navigate the site. One way to find out what users will expect to find when they

come to the site, is to ask them and make this a priority when developing the order of content on the front page and navigation tools (Richardson, 1999). Although there is some validity in this, users do not always wish to spend their "online time" helping out businesses when it is often very easy for them to find a competitor of the business already meeting their needs.

The key to a successful site is ongoing development. If an organisation is planning to attract users to their products or services the site needs to give them a reason to keep coming back to the site. Businesses looking to develop and launch their own e-commerce sites can plan on spending \$1 million and five months on average to "get on the map," and more than \$20 million for a place in cyberspace that sets them apart from the competition, a Gartner Group report said in 1999. No matter how much they expect to pay, companies will actually shell out more than budgeted to begin selling goods or services online (Diederich, 1999b).

Gartner Group polled 20 midsize to large corporations launching a first-phase e-commerce site, either business-to-business or business to consumer. Survey participants said building their sites was more complicated than expected. Regardless of how much they spent, none of them claimed to have completed the job "on budget."

Analyst Alyse Terhune, who contributed to the report, said a surprisingly high 79% of the total site cost was spent on labour and systems integration, while software and hardware accounted for a respective 10% and 11%. The ratio of labour to software expenditure was 30-to-1, she added. Labour costs were likely to decline as systems integrators became more adept. However, those savings would be counterbalanced by "keeping up with the Jones," she said. That meant scrambling to stay abreast of competitors as key new technologies and services emerged.

In addition, firms that were delaying plans to get on the Web could look forward to spending more to do so. As technology improves, it is likely the costs associated with developing and launching an e-commerce site would as well. "Clients typically under-budget in the first one or two implementations. But that's OK, because the underlying thrust of the corporation is to get with e-business," Terhune said. "They are accomplishing a critical corporate requirement for not just remaining competitive, but for gaining significant market share and overall survival."

Gerstner, IBM's chairman and CEO, says because customers of all businesses will expect to be able to conduct transactions of every kind over the Web, companies must focus on making their Web sites work seamlessly. "Quality that was acceptable on the Internet last year is no good this year," says Gerstner. Michael Clifford, Dell Computer Corp's vice president and CIO says the way to ensure Web site quality and efficiency is to create an Internet team responsible for the site. Organisations should expect and plan for 50% of sales to be via the Web in just a few years (cited in Lais, 1999).

Various delays and additional costs often result from the unexpected amount of work needed to build the front and back ends of e-commerce sites. One of the keys to a successful site is the ability to translate vision into value.

### **2.6.2.2 In-house design**

Using existing employees for Web site design has a number of advantages. Those working in the organisation are hopefully “up to speed” with the organisation’s aims, structure, stakeholders and existing systems. These employees are likely to be able to react faster to any changes and be on site for meetings, problem solving and training.

Conversely, there are various disadvantages to using in-house staff on the Web site design project. If current staff do not have the skills required, they need to be trained with a resulting time lag before they can make a useful design contribution to the project. Even after training, they will be developing their skills on the Web site which is likely to be their first foray into the area. If employees with design skills (such as HTML coding, DreamWeaver, FrontPage etc) leave either during the initial design phase or after the launch, there will continue to be skills issues. Decisions need to be made about whether future staff are trained in the area, new staff are employed with these skills or the maintenance and upkeep of the site is outsourced. There may be internal politics in terms of divisional or departmental differences which may have been alleviated or avoided with the use of an outside team.

The use of standard content templates makes it easier for employees to contribute and does not require HTML knowledge. Web content should be organised logically and stored centrally, so all can easily locate what they need. The content management team should define workflow procedures for submitting content. This provides the control necessary to prevent inadequate or erroneous content from reaching the Web. The team also needs to agree on how content will be provided to users by writing rules for dynamic population of Web pages. These pages free the content management team members from having to create each page themselves, allowing them to focus on business issues. Dynamic Web pages can also be used to personalise content for users.

### **2.6.2.3 Use of outside expertise**

The planning process includes defining the business and considering the type of image that the organisation wants to project online. Goals and objectives to be achieved through the organisation's online presence should be formulated and contractors should clarify how they see these being delivered. Decisions need to be made about what business resources will be allocated to online activities and a budget constructed. Part of this will include assessment of the current in-house expertise and how much will be outsourced both initially and once the Web site goes live.

A Gartner Group survey (cited by Diederich, 1999) expressed surprise that the firms surveyed didn't get "almost everything they needed" from their e-commerce application vendor. On average, most corporations used two or more external firms; usually including a nationally recognised media firm as well as local systems integrators to help control costs. Using multiple vendors may be a result of having an

incomplete design brief and subsequently realising once a system is in place that either the organisation's needs have not been met or that they have changed. Either way, the situation could have been remedied by careful planning, ensuring the different parties know what roles and tasks they will be required to perform, having a detailed brief with milestones, frequent project briefing meetings between the organisation and the external design agency and holding realistic expectations.

#### **2.6.2.3.1 Web site designers**

The relationship with the Web designer should be considered as an extension of the public relations and marketing arms of the operation. The Web site designer needs to understand the organisation's culture rather than just working from a series of briefs. While a Web site design company may have the design skills and software tools, the organisation has knowledge of how employees work, what they need to know and the types of information required by their customers and suppliers.

#### **2.6.2.3.2 Internet Service Providers (ISPs)**

Access is gained to the Internet through companies known as Internet Service Providers or large companies called online services. Most small business use an ISP as the online services, while excellent for businesses, tend to be too slow and expensive for efficient business use. There are a range of ISPs in New Zealand that provide access either nationwide or a regional geographical area. While finding an ISP and gaining access to the Internet is relatively straightforward, finding the right ISP for a particular business has been more difficult (Booth, 1999).

All communications on the Internet to or from any part of the world begin with the fabled Root Server A, sometimes called the White Pages of the Net. Every computer directly connected to the Net, a so-called host computer- needs a numerical address. The addresses for the whole world are stored in Root Server A. Most individual users connect by subscription through an Internet Service Provider, or ISP. Some familiar names of ISPs are AOL, CompuServe and AT&T, although there are about 6,000 others providing local or regional services such as Clear, Xtra & IHUG in New Zealand.

Newman (2001, p12) said "ISPs have been forced to lift their game from basic dial-tone providers to specialist development houses able to provide technical expertise, online applications, higher speed bandwidth and transaction-processing capabilities." He saw that ISPs have realised that their survival depends on diversification and being able to offer new levels of service such as fast Internet access, virtual private networks, secure extranets and intranets, security software or becoming an Application Service Provider hosting remote software for their clients.

E-business is linked inextricably with the Internet and Web-related technologies. Companies may use an Internet Service Provider (ISP) to manage their connections. In addition to maintaining the physical network, a service provider may also play a key role in hosting Web sites, acting as a firewall or operating electronic commerce servers. Reliability of connection, security, scalability of architecture and overall

capacity are areas where service providers can offer the assurance that an e-business requires (Deise, Nowikow, King & Wright, 2000). The network structure that underlies the e-commerce operation requires careful consideration in terms of selecting an ISP, network security and server availability. Some companies are not content to entrust to the Internet their business-critical connections with supply-chain and demand-chain partners and customers and seek to establish an extranet involving these groups using a virtual private network, a public data network or a private line.

#### **2.6.2.4 Summary**

This section discussed aspects pertinent to the design phase and drew attention to the range of complex issues that need to be covered as part of the design process. Graphic design, technical expertise, Web content and business requirements are some of the areas that need to be considered when an organisation decides whether to contract out or develop the Internet site and accompanying infrastructure themselves. The decision is dependent on a range of factors such as cost, scale, time and available expertise. There does not appear to be much documentation of the process organisations go through to make this decision or how the decision to proceed is made. Anecdotal comments to the researcher have tended to be along the lines of “we just got on with it”, “we went for it”, “some of us decided to have a go” and “they (management) gave us free rein so we thought we’d see what we came up with”.

Both anecdotal and documented research stresses the need for careful research and consultation with employees, customers and suppliers to determine their current and future needs for the Web site. Web site content and layout that are designed for users’ needs determine site “stickiness”; the ability to retain visitors for future sessions. Clear goals are also essential so the desired impact can be measured and progress assessed. Other lessons learnt include the need to place the Web site itself in the wider context of the organisation’s operations and back office systems as well as the need to budget carefully. The section discussed the use of expertise from outside the business and the skills that Web designers and ISPs can provide.

## **2.7 Business Needs**

### **2.7.1 Introduction**

The following section examines the business needs and uses of the Internet. A variety of relevant models and ways organisations can benefit from the technologies are examined. The advantages for organisation and staff support are highlighted as well as those of an organisation’s suppliers. The impact of the business environment as it affects organisations and their Internet presence is explored.

### **2.7.2 Models**

An Internet business model is the method by which a firm plans to make money long term using the Internet and is the system- components, linkages and assorted dynamics- that takes advantage of the properties of the Internet to make money (Afuah & Tucci, 2001). Each of the components- value, scope, revenue sources, pricing,

connected activities, implementation, capabilities and sustainability- are leveraged through the Internet's universality and time-moderation properties to create value for the business.

A company may decide not to embrace e-commerce, to do only passive advertising (also known as brochureware), to open online stores in addition to existing stores (also known as e-tailing), to establish a separate online division within the company or to dissolve regular business and go solely for cyber-business. The choice the company makes depends on the nature of the business conducted, the environment the company is operating in and on the internal resources available.

Internet business models can be categorised as pure play or "clicks-and-mortar." Pure play models exist entirely online and when they started were not an existing bricks-and-mortar model. A clicks-and-mortar model is an Internet business model conceived when a bricks-and-mortar model is already in place. A business with such a model must deal with the impediments of its past models. Whether the Internet business model is pure play or clicks-and-mortar, there are a variety of forms possible. Afuah & Tucci (2001) suggest these include brokerage, advertising, infomediary, merchant, manufacturer, affiliate, community, subscription and utility.

Gerhard Friedrich, president of Friedrich Associates, a consulting firm in Marblehead, Mass., expressed this division also, saying he saw electronic businesses falling into two main groups: "dot.com companies and existing companies that are undergoing business transformation." Friedrich said companies must take advantage of customer information in their e-commerce models. "Many existing retailers have done a notoriously poor job of utilising customer information to date. Retailers should be using customer information for continuous learning, not just for transaction processing", he said. "Existing businesses of many kinds still tend to think of the Web as just a new channel, when, in reality, it is going to become their business."

According to Boddy & Boonstra (2000), the most significant structural issue which many boards and senior managers face is how to relate an Internet business to their established operations. One option is the "brick and click" or "clicks and mortar" in which the new venture operates as part of the established business. At the other end of the continuum is the 'dot.com' or pure play scenario where the Internet business is run as a separate entity with its own name, management and capital structure and based entirely on the Internet. The dot.coms are free of the encumbrance of traditional structures and distribution channels and avoid the problems of transformation that face brick and mortar companies. Their customers tend to be younger and computer literate and often attract substantial amounts of venture capital. The downside to these advantages is the lack of established reputation and brand name.

Lee Neubecker, senior product marketing manager for online community products at Lycos classified the various forms of e-commerce as the three Cs: "communities, content and commerce. Most e-businesses fall short on at least one of these three Cs,"

she said, noting that traditional businesses tend to have the hardest time with the idea of community (cited in Emigh, 1999).

Haim Mendelson, a James Irvin Miller professor of information systems at Stanford University in Stanford, uses a grid to compare electronic business models. This grid contains parameters such as type of market (business-to-business, business-to-consumer or consumer-to-consumer); type of product (physical goods, information content or service); and selling environment (cyberspace vs. brick-and-mortar).

Sushil Vachani, associate professor of management policy at Boston University, suggested adding a geographic dimension (international, national, and regional) to the grid. Vachani maintains, for example, that Amazon.com's agreements with existing players in Europe have been prompted by the need to help keep pace at the international level with Barnes & Noble (cited in Emigh, 1999).

Vachani also cautioned that customers could be lured away by sites that offer the same product at a lower price. "After you've poured out millions for marketing, someone else might come in three years later and undercut your pricing," he warned. To avoid that, companies should "try to produce business models that will prevent duplication by others," he said. One way is to invest so much money that you create barriers to market entry by others. Another way is to keep innovating so quickly that competitors find it impossible to keep pace. These are not, of course, new ideas limited to the Internet but normal business problems made faster by the Internet. What may be different is the speed businesses can change direction or trial new designs or approaches via the Web site.

Gulati & Garino's (2000) study of retail companies and their range of choices from creating a separate Internet business to integrating the new venture with the existing one, found the decision depended on four aspects of integration- brand, management, operations and equity. A major decision is to select which processes or functions of the business to conduct over the Internet. Goods, services and processes that can take a digital form, are portable and can be described in standard terms are most suitable for the Internet.

While many B2C estimates touted in the popular press may be overly optimistic for a small business to realistically consider, there are still compelling elements of wealth creation, productivity gain and efficiency that the World Wide Web can bring to businesses. Oliver (2000) gave seven laws of e-commerce for strategic planners operating in an Internet business world. He said there was no such thing as a sustainable advantage with everything moving at Internet speed so it is necessary to constantly plan and react and rethink a whole business strategy at a moment's notice. No longer is the business master of their customers; they are the master of business. Another area of change is the need for businesses to share information rather than keeping it secret to gain an advantage. With much of the information about businesses being open and available, it is necessary to offer some added value to the transaction to win and keep customers.

### **2.7.2.1 New business models**

The Web has added new dimensions to conventional business practice and created new types of business strategies. For example, electronic business has created a new class of Web-based middlemen that has displaced some long-time intermediaries like traditional distributors and full-service brokerages. Monster.com for example has taken advantage of the Web's capabilities for two-way interaction by linking job seekers with human resources recruiters, said Jeff Taylor, Monster.com's president and CEO.

Some of the new middlemen, like eBay Inc. in San Jose, are operating auction sites that use dynamic pricing, a model that exploits the real-time capabilities of the Web to let pricing fluctuate freely based on supply and demand. Evan Schwa in his book *Digital Darwinism* says, "Dynamic pricing is Darwinian, in that you have to satisfy both sellers and buyers in order to survive."

The Internet offers new opportunities to the marketing arm of the business in terms of building customer profiles and using various customer relationship management (CRM) systems to gain further insights into customers' buying behaviour and preferences. CRM systems can also be used to support each phase of their relations with customers- acquiring new ones, enhancing their profitability and retaining them.

The Butler Group calls customer relationship management (CRM) 'customer asset management' – and defines CAM as adding value to the organisation's relationship with its customers. This involves not only installing a real-time infrastructure into your business, but also the total integration of data and processes. CRM extends the functionality of, and integrates with ERP (Bell, 1999).

The Butler Group philosophy is reinforced by the Gartner Group data: By 2000, 75 percent of businesses were predicted to be using e-business of some type to augment their ERP systems. On average, said Gartner, 75 percent of direct and indirect costs associated with classic order fulfilment could be eliminated via a "closed loop", Internet-based order process.

According to Keen (1999), the e-commerce winners have all three: IT management, customer relationship and a profit structure. Cisco's formula is typical: manage the sales transaction side, then provide research and evaluation tools for comparison shopping and self-configuration. By turning the back office into the customer's self-management front office, organisation processes can be streamlined and the customer relationship cemented. Other suggestions are to customise the front-end interface, add seminars and interactive access to experts and open up spaces for communities to form, extending the variety and range of options offered to create a branded hub.

### **2.7.2.2 Disintermediation**

E-commerce is changing the way companies and their customers interact with each other. Established ways of doing business and traditional distribution channels,

especially in the business-to-business sector, are being challenged. The Internet allows manufacturers to sell directly to their end-users by disintermediating or removing the layers of intermediaries between sellers and buyers. Buyers and sellers who used to rely on brokers, dealers, wholesalers, and field salespeople now deal directly with each other. Companies can communicate quickly and cheaply regardless of distance enabling business to be done with people and organisations that were previously beyond reach. The challenge for managers is to make profitable use of these possibilities. Boddy & Boonstra (2000, p19) conclude that as managers use the Internet to support more of their companies' core activities, they also need to make progressively more significant organisational changes.

This challenge to intermediaries - referred to as disintermediation - is the elimination of brokers and the middlemen who stand between buyers and sellers. In effect, portals become the middlemen.

### **2.7.2.3 Auctions**

Internet auctions are also changing the playing field. Businesses with excess inventory can auction it through the Internet to any buyer who is willing to purchase the goods without the intermediation of a broker. Similarly, businesses in need of particular raw materials or merchandise can look for them and acquire them through online auctions.

Double-blind auctions offer the unique opportunity to buy or sell products where the seller doesn't know the identity of the buyer and vice versa. This can be important when the seller doesn't want to disrupt traditional distribution channels. The seller can liquidate excess inventory and the buyer can obtain special pricing, all without upsetting normal pricing and supply chain practices.

Schumpeter's ideas of "creative destruction", as mentioned earlier, exist at the heart of entrepreneurial activity and are as relevant in the early 2000s as they were when he was professor at Harvard in the early 1900s. When placed in the context of the entrepreneurial aspects of the Internet, the message is that much of the conventional management wisdom which may work well in stable environments is not always appropriate when attempting to create new business models in a time of volatility. The challenge for managers is to develop, communicate and enact a vision that embraces the organisation's use of the Internet. Is it the number of hits on their Web site or the number of orders taken? Can commercial sites be compared with Government departments? Should pure plays be assessed in the same manner (presuming such a measure can be determined) as those businesses that are clicks and mortar? Existing companies favour efficiency improvements of current activities such as supply chain integration via B2B solutions while start-ups use the new technology to provide new value propositions through redefining business models.

Measuring instruments and standards on which to measure "success" need to be determined. One of the problems with defining success is that the standard metrics like free cash flow or ROI do not work in the investment phase in a highly uncertain environment. One approach is to look at how companies measure their success.

#### **2.7.2.4 Technology for business**

The relationship of information technology to an Internet organisation is critical. An organisation's choice of technology raises complex issues about accommodating various business models to ensure responsiveness to an organisation's current and future strategic needs. The focus of information systems has changed from automating internal (or backroom) processes to enabling multifaceted mechanisms for directly delivering products or services to the consumer. The increased complexity of these systems is compounded by the fact that many are used for competitive advantage, giving them great urgency. The central argument now is how to organise IT to achieve higher levels of competitive advantage (Hartman, Sifonis & Kador, 2000).

Hartman, Sifonis & Kador (2000) say that proficiency in technology requires organisations to adhere to a number of principles. These include the ability to build and drive standards embracing all areas of the infrastructure including applications, network and security across the enterprise. Another is to ensure that existing infrastructure such as network services, hardware, software and security is ready and can be scaled both up and down to meet emerging requirements. Further principles are to maintain a business-driven technology strategy and to insist on simplicity by avoiding complex solutions and non-standardisation. The two remaining principles are for organisations to align human resources with business goals and to buy what they cannot easily build.

The right technology for e-business is open, scalable, controllable, rapidly deployable and easy to use (Raisch, 2001). By being an open standard it reduces operational costs and leverages outside innovation, time-to-market is reduced and market reach is extended by a scalable architecture. Deploying a controllable solution manages risk and allows for constant innovation and reinvention. Being rapidly deployable is another factor in reducing time-to-market and accelerating returns. Ensuring it is easy to use promotes wide adoption and reduction in operational costs.

#### **2.7.2.5 Speed, innovation and flexibility**

Other components of a successful Internet business are speed, innovation and flexibility. While big businesses can have a lot of resources, an immense workforce and huge power, more agile adversaries can defeat traditional players. A related component is scalability with businesses requiring systems that allow them to expand or adjust rapidly as the environment demands. Companies that will enjoy sustained success in the Internet economy are flexible and open to continual change and reinvention.

Oliver (2000, p10) says successful leaders are building flexible organisations designed around customers. Rather than dictating strategy from above, they let strategy flow from the organisation. Fast growing companies tend to share a common trait: they demonstrate an amazing ability to fine-tune their strategies reflexively, nimbly moving to where their customers want them to be.

### **2.7.2.6 Advantages for organisation and staff support**

Using e-business technology, the procurement process for indirect material is radically changed. Because all indirect material purchasing information exists in an electronic catalogue, there is no need for valuable time to be spent searching for materials and services. Procurement staff are relieved of an administrative burden and, as a result, buyers have more time to focus on more value-added activities, such as negotiating long-term contracts with preferred suppliers.

Using an extranet e-procurement solution, requisitioners can check product availability, pricing, and order status online. Procurement processes are streamlined even further as a result of the requisition approval workflow provided by e-procurement solutions. Using e-procurement solutions results in reduced requisition-to-delivery times and this in less inventory. All of the cost savings associated with e-procurement, including streamlined process flow, lower inventories, and better contracts with suppliers revert right to the company's bottom line (Deise, Nowikow, King & Wright, 2000). An organisation that has seen the benefits of staff accessing this information instore to answer customer enquiries is Dick Smith Electronics.

E-procurement can have a large impact on most members of large organisations. The technological change can be quite small but the resulting change in culture significant. In complying with the new buying arrangements, employees will not use the fax or phone to order but will use the intranet accessed through their desktop computer. For individuals there is some loss of choice in the buying process as that control shifts to the organisation's head office. Local buying arrangements also change as can any informal arrangements that have historically cemented many of these relationships. Buying decisions become less political, more directly based on price and increasingly based on service level.

In the digital world, the company that owns the customer relationship and the customer knowledge is king. Companies must determine if they are (or can become) the party in the value chain that owns the customer relationship. Whatever a company's position, leadership must not only know what it knows, but know what it does not know. It must also be able to find and create networks with partners who can fill that knowledge gap (Deise, Nowikow, King & Wright, 2000).

Deise, Nowikow, King & Wright (2000) say service is one of the biggest issues in the e-commerce space and refer to a survey of online buyers by rating service BizRate.com. Buyers ranked "level and quality of customer service" last in an evaluation of electronic merchants' performance, expressing disappointment in what was currently on offer. The authors say that companies must begin utilising data warehousing and data mining technology in order to implement customer service successfully. While data warehousing and data mining are often thought of as tools for selling, customer-service data is one of the most important sources. By understanding the post-sale customer relationship, a company can learn about how it needs to design, build, and service its product and conduct the sales and service transactions in order to improve customer satisfaction.

### **2.7.2.7 Advantages for an organisation's suppliers**

In addition to changing the way a business meets the needs of retail customers or consumers, an Internet system changes the way suppliers' staff work. Internet or e-procurement eliminates the effort of staff correcting or returning invoices submitted manually as invoices are now in a standard form rather than unique to each supplier. Suppliers must complete all fields before an invoice can be submitted electronically and the system contains many automatic checks eliminating employee effort.

Internet technologies offer the ideal environment for business process outsourcing with the Web providing open standardised information access, seamlessly linking a company and its outsourcing providers enabling companies to stick to their core competencies and outsourcing all non-business critical activities.

Effective B2B applications require that business processes between customers and suppliers fit with each other. Moving a business to the Internet may lead to a change in suppliers if they are unwilling or unable to adapt to the Internet. Some organisations have taken the initiative of e-enabling their suppliers by working with them to implement structures and systems to ensure they can interface with each other. Companies that invest significant amounts of time and money in their e-business infrastructure will want to utilise it to maximum advantage and suppliers that transact electronically help realise the Internet's value for the company.

Businesses that seek to capture lasting value from B2B e-commerce should start the transition to B2B promptly with indirect goods and services and begin to gain an advantage through proprietary solutions and differentiation by collaborating with strategic suppliers (Boston Consulting Group, 2000).

### **2.7.3 Business environment**

One of a number of recent changes in the New Zealand business environment that will affect the uptake and adoption of e-commerce is the Electronic Transactions Bill. It will expand the existing legal framework to include electronic documents, digital signatures and concepts familiar to the online world. Documents in electronic form will be considered legal and businesses will no longer have to print out everything and keep them in hard copy.

The exact nature of what constitutes a legal transaction, including what communications records and documents will be permitted under New Zealand law and how information should be stored and retrieved has yet to be decided. By June 2001, it was predicted that 40 per cent of all public service forms would be available online along with necessary online payment systems (Newman, 2001). Businesses that want government contracts have an added incentive to get online with a move towards interdepartmental purchasing and e-procurement. Some government departments are already using secure communications using three encrypted email packages: MailMarshal, Tumbleweed and Secretsweeper. The use of digital certificates at

departmental gateways to ensure authentication was scheduled by mid 2001 for up to 3000 public servants (Newman, 2001).

The Crimes Amendment Bill No. 6 that is currently before the house will make hacking into private information or databases a criminal offence. The Privacy Act 1993 will also be amended to ensure New Zealand laws are in line with European Union directives on data protection. Other legislation including that covering intellectual property is also under review with tax and consumer protection issues also being looked at.

In the United States, the Federal Trade Commission and Department of Commerce held a public workshop in April 2001 on a provision of the new digital signatures law that requires companies to get consent from customers before using electronic documents in business dealings. The workshop was aimed at assessing the benefits and burdens of the consumer consent provision included in the Electronic Signatures in Global and National Commerce Act (ESIGN) that took effect in October 2000 (Weiss, 2001). One of the aims was to learn whether the consent requirement was working to protect individual consumers and whether the absence of the provision would increase consumer fraud and whether changes should be made to that part of the ESIGN bill. The Act gives digital signatures the same legal weight as those physically signed on paper documents. The law requires that customers should be able to choose whether they want to receive their business documents electronically and that they have to be provided with the correct software to ensure they can receive and read documents sent in electronic form.

Changes to the law are a useful part of the business framework but they're not necessarily a catalyst for e-Business according to Mark Jeffries from eBANZ (cited in Newman, 2001). What businesses perceive in the marketplace and what their competitors are doing tend to be much more of a motivator.

### **2.7.3.1 Global**

One aspect of Internet business is its global nature with Oliver (2000) saying businesses need to ensure their strategic thinking is global, both in breadth with how to sell globally and in inspiration of what works best in different global situations. As companies move from the "not-com" where they are very much grounded in time and place to "dot-com" where they are situated within the electro-mechanical spectrum of the Internet and other wired and wireless networks, nothing changes more than how companies must deal with customers. In the traditional marketplace, success is often characterised by making it easy for customers to come to the business with location being an essential element. In the Internet marketplace, the business must go to the customer with what happens to customers once they are on the Web site of immense importance. The customer now has a say in determining the relationship, the product or service offered, delivery criteria and often price. Success in "space" as opposed to "place" means that the company needs to make the customer a true player rather than a spectator.

When doing business internationally over the Web, the cost factor of the target market needs examining. Some items to be considered are the legal requirements, delivery costs, tax charges and account costs for such localised operations such as after-sales service and customer help lines. Marketing is far more effective in the target market's native language. Web sites can be centrally managed and standardised, but product pricing and backup services are better localised. Cultural differences play an important role in determining the pace of e-commerce development. Europeans are more reluctant than Americans to buy online, although research suggests such resistance is crumbling.

### **2.7.3.2 Knowledge economy**

There are two views about the knowledge economy. Some believe that the new economy is a break from the past; a discontinuity. "For the past decade, organisations and people have been buffeted (and many battered) as they have been working their way through the final stages of a great transition. The period that links the end of the decline of the industrial-based economy and the rise of the new knowledge-based economy is being described as the most traumatic period of change in the history of civilization" (Bendaly, 1999, p1).

Others believe that the new economy is not that new and the nature of change is what is different. "Technology changes. Economic laws do not. If you are struggling to comprehend what the Internet means for you and your business, you can learn a great deal from the advent of the telephone systems a hundred years ago" (Shapiro & Varian, 1998, p1).

Depending on whether organisations view the nature of the change as new or not that new will determine their reaction. If the new economy is perceived as not that new, organisations will respond to it in an evolutionary way whereas if it is seen as a break from the past the response is likely to be discontinuous change. "If e-commerce innovation is the cause of a revolution in the rules of business, what is the effect? In short, structural transformation" (Kalakota & Robinson, 1999, p6).

### **2.7.4 Summary**

This section has considered the business needs and uses of the Internet. A range of relevant models and various ways organisations can benefit from the technologies were examined. Advantages afforded by the Internet for organisational and staff support as well as their suppliers were highlighted. The impact of the business environment as it affects organisations and their Internet presence was explored.

## **2.8 Customer Needs**

### **2.8.1 Introduction**

The next section examines the customer needs as opposed to the business needs in the previous section. Areas covered are the use of technology to meet customer demand, advantages afforded by personalisation, problems faced by customers and the need for organisations to respond to customers.

### **2.8.2 Using technology to meet customer demand**

Established companies moving towards the Internet have three broad types of customer: those who insist on doing business the traditional way, those who are willing to move gradually to the Internet and those who want to use the Internet immediately. Each company needs to decide how to interact with these groups during their move to the Internet. Many established retailers use the Internet to complement conventional channels by recognising existing strengths such as a trusted brand, established customer base and their distribution and payment infrastructure. An advantage of a new dot.com or pure play business is that all their customers, of necessity, are online already so efforts do not need to be made to migrate existing non-Internet customers.

One example of a business culture that has embraced ongoing change is Cisco. One of their principles is the focus on the customer, not merely in terms of customer satisfaction but in exceeding the customer's expectations. Cisco's approach has always been to solve "customer-facing problems" that have an impact on its customers and that, if not solved, would lead to a drop in customer satisfaction. The problems were solved through a series of activities that streamlined processes resulting in end-to-end solutions. By this means and through the development of a customer self-serve Web application, Cisco increased its customer satisfaction ratings significantly (Hartman, Sifonis & Kador, 2000).

An Ernst & Young LLP study of 1,363 households found that security concerns and the need to handle products remained the big barriers to online shopping, but the next two concerns were that consumers couldn't talk to a sales representative and that they couldn't get enough product information (cited in Orenstein 1999b). A suggestion to alleviate anxiety and build customer confidence in the business and its products is the use of a voice chat mode to allow customers to get more information.

### **2.8.3 Advantages of personalisation**

E-commerce applications are customisable to accommodate specific customer needs, nuances, and interests, as well as to set up particular accounts, special terms, and tailored conditions, enabling customers to receive personalised service. Personalisation involves tailoring a Web site's presentation to individuals or groups based on profile information, demographics, or prior transactions. The Web can be used to provide personalised and responsive service specific to a particular customer—an individual, a family, or a company. Unlike a broadcast channel such as print, television, or radio,

where most consumers receive the same content, each Web user has an individualised channel to a company's online presentation. Personalising a site may be done for business or merchandising purposes. Users of a B2B catalogue, for example, may see different prices, based on the volume discount negotiated by the user's company. In addition to custom pricing, pre-approved product configurations and other pre-negotiated packages of goods and services can be displayed. Personalisation is where much of the added value is located.

E-business leverages two fundamental forces in commerce by combining supply-side commoditisation of products or services with demand-side customisation. To balance adding value through personalisation while maintaining the cost base associated with commodity-based companies, e-business seeks to add information content to a transaction. The goal is to develop a personalised experience coupled with rapid order fulfilment. In this way, a customer may reap an actual or perceived bonus that adds value to transactions including goods and services (Deise, Nowikow, King & Wright, 2000).

Internet technology provides online support and service that enhances the "faster, better, cheaper" model of Internet buying. The Internet medium allows the approach to customers to be highly individual and responsive, developing trust and a personalised response with the customer during the sale and afterwards.

The self-service channel model offers companies the opportunity for relatively low-variable transaction costs. Some organisations give customers access to databases that only company employees could previously use. Customers need to get better, more timely, and more precise information about products and suppliers. Internet technology can provide a way for customers to get real-time data about products, availability, and pricing. Internet technology allows a high degree of interactivity so the customer can easily create, edit, send, confirm, and track orders through systems that are highly effective, responsive, and flexible.

Deise, Nowikow, King & Wright (2000) claim that research has shown that only delighted customers are truly loyal customers. Customer delight provides a level of customer satisfaction that keeps customers coming back. Providing a relationship that is merely "satisfying" as opposed to "delightful" leaves a company vulnerable to others seeking to take customers away because they are easier for the customer to do business with. Creating new or added value can be accomplished through strengthening customer relationships by integrating sales, configuration, planning and design processes with customers through new and existing channels.

Overall customer satisfaction with buying products online was high, in spite of customer service and delivery problems, according to a study issued by Dataquest, a unit of Gartner Group Inc. 505 households were surveyed and 88% said that they were satisfied with their online purchasing experience, particularly the ease of placing orders and making reservations, Dataquest said (cited in Ohlson, 1999b).

The integration of customer relationship management (CRM) into e-commerce means that, gradually, customers are gaining better access to information. Elsewhere, companies are selling their products direct to customers, cutting out intermediaries –an indicator that e-business is forcing companies to find new ways of rising above the competition.

Hartman, Sifonis & Kador (2000) say the Internet redefines every assumption about dealing with customers. They claim the "E-economy" throws the well intentioned but unworkable management discipline of customer relationship management on its ears. Internet customers have so many options to choose from in any product or service category that it is not the customer who is being managed as that system is far too passive. Instead, it is the customer who manages the relationship, requiring organisations to let go of the arrogance that customers and clients can be managed. The authors say that in the E-economy, customers can only be served, listened to and valued and then, if the company does everything right, the customer may agree to be served.

The Net is changing business in several dynamic ways. It allows businesses to have a much more personal relationship with customers. The promise it allows is in the so-called market of one as well as allowing a personal relationship between all parts of the supply chain. The Net is also changing our perceptions of distance and boundaries between customers and also of time. Customers can buy things at any time of the day. This new Net world means that companies must be flexible to meet customer demands. If an IT department is too married to a new particular architecture or set of solutions, this can be a barrier for a company which needs to change quickly.

#### **2.8.4 Customers' Problems**

Out of an estimated 37 million US homes with Internet access, one third had at least one person ordering or reserving online between February and April 1999. From those homes, 2.4 million experienced problems such as orders that never arrived and with the bills for those orders, the research firm Dataquest said. A quarter of the households that faced problems were unable to email the merchant's customer service department.

According to Dataquest, merchants hadn't implemented effective links to back-office systems or given much attention to online customer support. As a result, retailers were offering 24-hour shopping but not 24-hour support, possibly making it difficult to win customer loyalty (Ohlson, 1999b).

The unexpected popularity of an organisation's Web site can also be a problem. Within six months of its 1998 launch, American Airlines Inc.'s redesigned Web site was racking up some impressive numbers. Thanks to new personalisation technology, more than one million frequent fliers had clicked on [www.aa.com](http://www.aa.com) to check their account status. Another two million people had signed up to receive weekly emails about low last minute fares to their favourite destinations. A press release proclaimed, "customer enthusiasm for the new site surpassed anything the airline ever anticipated" (cited in King, 1999).

Internally however, the site was drowning in its own success. Providing customers with the added functionality of a personalised site made huge demands on the eight-person Web publishing group. "The advent of personalisation drives additional challenges for content management which the Web team didn't see up front", said John R. Samuel, American Airlines' vice president for interactive marketing. "With personalised information, we can make customers happier than ever before," Samuel said. The team underestimated the effort it would take to keep new, customised information flowing into the site. So they recruited workers in virtually every other department to write copy to post to the new Web site (King, 1999).

As the Internet evolves, companies will lose control as customers become empowered. Customers won't care about business matters; they'll care about their own needs and expect them to be met, according to Horowitz (cited in Ohlson, 1999e). Businesses will have to personalise content to satisfy those customers, he said. That will lead to difficult obstacles for businesses to overcome.

Companies will also have to close the trust gap with customers by creating a bill of rights, Horowitz said. Customers "will need to know that the cyberworld won't take its money and information and will stand behind the transaction" in the event instructions don't get to their destination, he said.

Businesses will still need personal interactions with customers, as well as a Web presence. Horowitz also cautioned businesses and consumers alike to be aware of the dangers of Internet growth. The Internet holds much promise, but there is "no distrust checkpoint, no truth standing." And that, he said, can lead to "information madness" (Ohlsson, 1999e).

"What is fairly easy to do on the Web is to replicate your worst real salesperson," said Elizabeth Van Story, a vice president at OfficeDepot.com. "The challenge is replicating your best salesperson." The company designed its site to help customers narrow down product choices in some cases and see alternatives in others. Some of its catalogue call centre staff are trained to handle questions about the site. "It's nice that they can get to a human," Van Story said (cited in Orenstein 1999b).

There are differences between online transactions and online relationships. Building strong customer relationships is the key to e-commerce success, not excellence in transaction processing, important as that is. The reason is straightforward: the cost of acquiring customers and investing in infrastructure and support are so high that repeat business is essential. If organisations get stuck at the transaction level, they may have superb IT, but they don't have relationships with their customers. As previously mentioned in connection with the Ernst & Young survey, suppliers could introduce a voice chat mode to alleviate problems.

### **2.8.5 Responsiveness to Web customers**

The large volume of incoming email that they receive often surprises companies that establish a Web presence. Measures are necessary to deal with communication received via the Web site and adequate resources in terms of time and money need to be allocated. The growth of email as a form of customer interaction often outstrips companies' ability to handle it. In 1998, approximately 1.9 billion email messages were sent each day. Pioneer Consulting estimated that this number grew to 4 billion by the end of 1999 (Deise, Nowikow, King & Wright, 2000).

Email tends to be a default channel on the Internet and companies, especially those involved in e-commerce, are flooded with email. Various surveys have been done to test the responsiveness of various businesses to email queries. Amazon.com, which tends to be very customer-responsive, had slowed from a 34-minute response in 1999 to no response after the third day in 2000. In 1999, eBay took an hour and 37 minutes and a year later hadn't replied after three days. While these two companies, although well known, can be seen as individual examples, it appears the volume of customer email may be overwhelming other companies as well. Jupiter Communications tracked how fast the top 125 Web sites responded to customer email. They found that 46 percent took five days or more, never responded, or did not post an email address on their site (cited in Raisch, 2001).

Another study examined the Fortune 100 and how they handled email. Twenty three of the companies including GTE, Hewlett-Packard and Intel couldn't be contacted via email from their Web site. Of the 77 companies that could be contacted by email, a third didn't respond after three months, including American Express, Motorola and Walt Disney (cited in Raisch, 2001).

Email is an important low-cost customer service tool. It is ideally deployed in three ways: by conveying complex information to customers who require detailed answers to product or service queries, by updating order status and by generating leads by informing customers that the products they are interested in are now available through the company's Web site. An interactive site will reduce costs further by enabling orders to be taken by the computer rather than needing human intervention. This enables an immediate response and reduces cost.

E-business technology eliminates the need for a customer services representative (CSR) to be available by phone every time a customer has a simple question or requests a simple answer. In some situations, CSRs may respond to emails for customers who could not be serviced directly from the Web site. It is crucial that customer emails are acknowledged at least as promptly and efficiently as fax or physical mail as failure to do so results in dissatisfied customers and poor perception in the marketplace. Several early major corporate Web sites with customer response email capability found they were swamped with messages and were completely unprepared to deal with the flood of inquiries—a potentially great opportunity became a marketing disaster.

## **2.8.6 Summary**

This subsection highlighted the importance of considering current and future customers' needs and planning the capacity to address and service these needs. A number of customer service problems were given as examples. Although Internet technology offers opportunities for personalisation, delivering this may make considerable demands on a business.

## **2.9 Technical Requirements**

### **2.9.1 Introduction**

This section considers the technical requirements necessary for an organisation to offer good customer service online. The importance of competitive analysis and cost benefit analysis is also explored.

### **2.9.2 Customer service and technical requirements**

Customer service on the Web requires integrated systems to cope with fielding phone calls, email and Web site queries. But immature technologies, stovepipe systems (standalone systems that perform only one function) and separate staff can prevent some companies from providing good customer care. A problem at BankBoston Corp. illustrated what can go wrong when companies don't integrate their customer-service systems and staff. When Forrester Research tested BankBoston's ability to respond to email queries in September 1999, it clocked the financial giant at three hours. But when the research firm tested the bank's email response more recently, it took a month to get an answer.

In one report, Gomez Advisors Inc. rated BankBoston near the bottom in customer service among Internet bankers. Forrester attributed the lag time to the bank's promotion of its new HomeLink online banking service, which produced a flurry of consumer Email. But the lag also occurred because a phone representative couldn't access the earlier Email queries from his workstation.

"This demonstrates what we know already and is true of a lot of companies: There is a disconnect between their E-mail and call-in channels," said James Punishell, an analyst at Forrester. "If I send an E-mail, the guy who is picking up the phone should have access to that." A BankBoston spokesperson said customers who call on the phone do have the option of dealing with an online services agent. He suggested that perhaps Forrester didn't select the right prompt.

Many companies are incorporating an email group into their call centres that answers Web queries. There's some overlap between the tasks, but "no one is integrating the two very well," said Donna Fluss, a research manager at Gartner Group. Charles Schwab & Co. said it's trying. The financial institution has thousands of customer-service representatives collecting customer inquiries from bank branches, the Internet and call centres worldwide. "Integrating all that information has been a big issue for us. The vendors all talk about customer relationship management, but really they're

just talking about relationship management for a particular touch point. For those of us who are multi channel, that's not good enough" (cited in Fusaro & Cole-Gomolski, 1998).

Doug Holden, a consultant at KPMG Consulting in Mountain View, California, said that until the technology matures, companies would need to rely on customised data warehouses (process by which related data from many operational systems is merged to provide a single, integrated business information view that spans all business divisions) that collect all customer data and inquiries. For example, Atlanta-based Coca-Cola Co. has a 105-person consumer affairs group that handles letters, email and phone queries. All the consumer questions coming from each channel are handled by staff dedicated to that channel but are entered into one database.

Nashville-based First American National Bank, integrated the email with its call centre and has offered customer service via email. It requires that "you redefine what a call is," said Jay Elshaug, service-level manager. With an integrated system, a "call" may be a phone call, a fax, email or a visit, he said.

The threat of not doing well at handling multiple customer-service channels has held back some companies. For example, Goodyear Tire & Rubber Company does some Web-based customer service with its distributors, but has been leery of fielding email from customers, said Bruce Smilie, Goodyear's manager of customer service for North America. "The big fear is that we won't be responsive enough," he said (cited in Fusaro & Cole-Gomolski, 1998).

### **2.9.3 Competitive and cost benefit analysis**

Industry and competitive analysis entails monitoring, evaluating and disseminating information from the external and internal environments with the goal of identifying the critical factors that will determine the success of the project. One tool for doing this is the SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis. Another such tool is the PEST (Political, Economic, Societal, and Technical) analysis that comprises a series of factors that play an important role in the value creation opportunities of a strategy. Careful consideration of these factors to analyse their environment can help organisations with planning new initiatives. The SWOT and PEST tools are often used during brainstorming sessions.

Since technology is available to any business with enough capital, competitive benefit will go to those who best manage the organisational context (Boddy & Boonstra, 2000). There are a number of ways to measure the effectiveness of the Web site and Internet operation for a business. These include the number of new customers received via online channels, the reduced speed of answering queries, the comparison of sales from the Web site and other channels and reduced cost of printing written materials such as forms and brochures.

## **2.9.4 Summary**

This section looked at the technical requirements that need considering for an organisation to offer good customer service online. This may be offered via email, Web forms or other call-in channels. It also examined both competitive and cost benefit analysis of this.

## **2.10 Implementation**

### **2.10.1 Introduction**

The seventh section of the literature review examines aspects of prototyping and pilot testing, commitment by management and staff to the project launch, integration with existing organisational manual and computer based systems and project management.

### **2.10.2 Prototyping or pilot test**

An implementation plan is needed before beginning to implement what was prescribed by the strategy. A pilot project is often a successful way to start with small investments in infrastructure to begin with. The creation of an Internet project team for the organisation is an important part of this phase.

A number of organisations have conducted market research and asked customers and suppliers what they'd like in a Web site. In some cases such as New Zealand Internet grocery retailer Woolworths Online, this has been extensive and ongoing with the subsequent development of new software allowing customers to type in the items they want, triggering a computer search to locate the items and process the order (Sunday Star-Times, 2002).

Other organisations have foregone a pilot test as they were running behind the original timeframe and have used the experience of "going live" as a means of finding problems. Tauranga based Carrie Evans from Excelso Coffee ([www.4coffee.co.nz](http://www.4coffee.co.nz)) said "I didn't really have a plan...I just thought we had to do it...Now we try to gear everything we do to the Web; we've really changed our whole outlook because of it". The advice of a friendly Web designer has seen ongoing experimentation with Web design and content, especially to solve problems with abandoned shopping charts on the order page.

There has been a lack of material documenting the process of pilot testing or prototyping organisations' Internet presences. It appears this is due to reported research focussing predominantly on outputs. Little if any mention is made of the initial stages, with any comments being made in hindsight. These have included uncertainty about what users would find useful on the site, the expected volume of traffic, the likely impact on employees and how soon any site updates would need doing.

### **2.10.3 Project launch**

The information used to launch the site is important. A common occurrence used to be a screensaver or fake front to a Web site with the message that the site was going live on a certain date and to return then. This practice has become far less common with organisations learning that any announcements about URLs should be made once the site has gone live when they have something tangible to offer.

Information about the Web site's launch can be included in other printed material such as brochures and newsletters, on business cards, signage and in radio, newspaper and television campaigns. Some organisations have included their URLs in phone voice messages and email messages.

The initial material on the Web site is critical to ensure those who visit for the first time translate into regular customers. Information needs to be relevant, targeted appropriately and of benefit to site visitors. Appropriate site design, layout and ease of transacting are all crucial aspects to have organised prior to the launch.

Most Web sites contain product descriptions and service information. A feedback method is essential so opinion can be monitored about the site and desired changes made.

#### **2.10.3.1 Management commitment**

Roberts (1987) considered the management of technological innovation was the organisation and direction of human and capital resources toward effectively creating new knowledge; generating technical ideas aimed at new and enhanced products, manufacturing processes and services; developing those ideas into working prototypes and transferring them into manufacturing, distribution and use.

A study by Sviokla (1996) found that in implementing any radically new technology, managers need to assemble constellations of actions, consider the political ramifications throughout the organisation, manage the momentum of the project and work to achieve economies of scale.

"Since the 1960s, we have seen the management of technology become universally recognised as the key element in international competitiveness in both military and commercial arenas, encompassing concerns for effective product and process design, development and implementation" (Roberts, 1987, vii).

Information technology implementation in organisations has gone from automating back office clerks to supporting the complex tasks of autonomous knowledge workers. "Creating a model that will predict the successful implementation of any new technology is almost as challenging as creating a general-purpose thinking machine. Neither has come to fruition." Despite the vast literature on technology implementation and the universal recognition that we have entered a "post-industrial" economy, there are only a few examples of systematic research on the implementation of new tools by knowledge professionals in a field setting.

Internet technology offers an unprecedented opportunity for electronic commerce. Management need to understand how electronic commerce can improve marketing and promotion, customer service and sales. Furthermore, new business opportunities can be found through electronic commerce. To capitalise on the potential of electronic commerce, management need to view electronic commerce from a strategic perspective rather than just an advance in technology.

Kalakota & Robinson (2001, p27) say to implement any e-business strategy managers need to understand the three elements of the e-business execution framework: provide a structure for defining, communicating and monitoring new realities, redesign core business processes to align with the new organisational vision, and enable the IT infrastructure to support change, innovation and business goals.

IT projects are famous for failure. A paradigm shift is difficult. The first mistake many businesses make is the failure to accurately assess the true scope of their e-business projects. IT teams are often forced to define business requirements, design the system and build it simultaneously, without a clear definition of project scope. The next mistake is that nobody is held accountable for the e-business project's success or failure. The vast majority of technology investments fail to deliver the expected returns because they were poorly linked to long-term plans, the strategies and techniques used were flawed, or the organisation failed to understand everything needed to support its objective (Kalakota & Robinson, 2001).

There is no theory that can predict the outcome of an implementation process. Markus & Robey (1988) characterise three categories of implementation: variance, process and emergent. Variance theories assume an invariant relationship between independent and dependent variables. These factors often include top management support, an effective champion and training. Other researchers have focussed on implementation processes, ie how people adjust to the technology during its implementation (Markus & Keil, 1994). Some complex models incorporate both process and factor variables.

Lucas, Ginzberg & Schultz (1990) constructed a complex model of implementation with twenty seven variables. In what Markus & Robey (1988) call the emergent school, there is a more phenomenological argument in which the implementation process emerges, as do the important variables for analysis. These occur as the implementation process unfolds. Kling & Iacono (1984) thought about the phenomenon of interest in an even more elaborate model. Although informative, few if any of these theories have been tested for predictive validity.

Boddy & Boonstra (2000) found that the majority of issues management face when doing business on the Internet are organisational rather than technological. Successful implementation appears to have required constant adjustments to the organisational infrastructure, including changes in culture, people and structures.

Corporate leaders must be the drivers of any type of initiative if it is to succeed. Unless a company has commitment from the top needed for enterprisewide culture change, any strategic initiative is doomed to failure, especially in the case of e-business initiatives (Deise, Nowikow, King & Wright, 2000). Following buy-in from top management, the project team must then maintain the effort. Poor project leadership and lack of communication between groups leads to e-initiatives that are not completed on time or on budget or fail altogether.

Leadership is especially important when the future is uncertain. Many managers are good at planning strategy and looking at things strategically but not at implementing a strategy. Almost always the commitment to change happens at the top. For a successful Internet implementation program to take place it is necessary to have a champion and Kalakota & Robinson (2001) suggest these champions and especially those involved in e-business, need to be on the senior management team. Without its sponsorship it is likely that the implementation will fail. It is that team's responsibility to lead the firm into the e-business era using strategy with senior management commitment to it.

A large majority (76%) of CEOs in traditional consumer businesses participate in the strategic decisions for their online initiatives. But only 24% of the total view these initiatives as an integrated part of their core business, according to a study by Jupiter Communications (cited in Ohlson, 1999f).

#### **2.10.3.2 Staff commitment**

Hartman, Sifonis & Kador (2000) say that it is true that the soft stuff is really the hard stuff when dealing with Internet-based organisations. They mean the most challenging aspect of managing an organisation and e-initiatives is marshalling the will and talents of the ultimate software assets of an organisation: its people. Winning the loyalty of a team, aligning its strengths with the mission of the organisation, maintaining a sense of dedication, installing agreements about ethics and values, measuring the effectiveness of a team and compensating individuals appropriately is much more problematic than developing or selecting and deploying the right technology.

Previous research has shown that environmental context can have a significant influence on the likelihood that an organisation will adopt new technology. The nature of the industry sector and patterns of product and process design have an important relationship to the nature of innovation. Company strategy also shapes the nature of technology use. All of these different contextual factors influence the adoption of new technology. Within individual firms, the organisation structure, distribution structure, compensation systems and product and service mix are important variables with training, job roles and potential career paths all interacting with the adoption of a new technology (Lucas et al, 1990).

#### **2.10.4 Integration with other systems**

Hartman, Sifonis & Kador (2000) refer to Net Ready companies as having leaders who embrace the Web and extend it to every corner of the organisation. Cisco's John

Chambers believes that everything pertaining to Cisco belongs on the Web and if something is not on the Web, there has to be a good reason. These leaders not only embrace new technologies and new applications that are enabled by the Internet; they push its use within every level of the organisation by setting the tone and expectation level for the rest of the organisation.

As organisations become increasingly flatter and deal with knowledge-based products, successful managers of Internet organisations need to be able to control and understand their organisation's cultures. The history of IT projects shows that success or failure has depended more on the quality of the management than on the technology itself (Sauer, 1993). Those managers who anticipate, plan for and adjust their business processes in the face of changes brought by the Internet have gained some benefits. Those who have seen technology as a magic bullet with which to solve their problems have made things worse (Markus & Benjamin, 1997).

Kalakota & Robinson (1999, p24) say, "The tough task for management is to align business strategies, processes and applications fast, right and all at once. Strong leadership is imperative." They also talk about the real threat to the firm coming not just from outside but being inside their own company. "In order to navigate the treacherous waters of technology, leaders must plunge into them; they cannot manage e-business at a distance by hiring consultants or knowledgeable people and giving them adequate resources. E-Business methods and technology must not be a black box to managers, because their ability to position the company, respond to market changes, and guide internal innovation depends on this knowledge" (p25).

There are various levels of technology involvement when adopting e-business. These range from ensuring all employees have an email account and access to the Internet to building a brochure-based site, to a Web site that is capable of taking orders and interfacing with any back-office systems, being able to transact externally with suppliers through an extranet and internally with employees through an intranet.

### **2.10.5 Project management**

The literature on diffusion of innovations suggests several key aspects are necessary for implementation: the role of the technology sponsor (willing to support the technology's implementation), the role of the champion (an active participant and leader of the implementation effort), the design of the implementation and the rationale for change (Leonard-Barton, 1988). All four independent variables have been identified as integral components of achieving "fit" between the project and the overall organisation. Walton's (1989) study of new IT in organisations has noted the importance of how management frames the meaning of new technology. Orlikowski (1993) in a study of adoption of software by software designers, found that the successful projects made a conscious rhetorical link between the current task and the strategic organisational goals. These studies point to the importance of a project champion or advocate who engenders support for the project by seeking "buy-in" and lobbies for project acceptance and resources.

A variety of roles must be carried out by one or more individuals during the innovation process (Roberts & Fusfeld, 1987):

- *Idea generating*: Analysing or synthesising information about markets, technologies, approaches or procedures from which is generated an idea for a new or improved product or service, a new technical approach or procedure, or a solution to a challenging technical problem (Pelz & Andrews, 1966 cited in Roberts & Fusfeld, 1987). The analysis or synthesis may be implicit or explicit and the information formal or informal.
- *Entrepreneurship or Championing*: Recognising, proposing, pushing and demonstrating a new technical idea, approach or procedure for formal management approval (Roberts, 1968 cited in Roberts & Fusfeld, 1987).
- *Project leading*: Planning and co-ordinating the diverse sets of activities and people involved in moving a demonstrated idea into practice (Marquis & Rubin, 1966 cited in Roberts & Fusfeld, 1987).
- *Gatekeeping*: Collecting and channeling information about important changes in the internal and external environments. Information gatekeeping can be focused on developments in the market, in manufacturing or in the world of technology (Allen & Rhoades, cited in Roberts & Fusfeld, 1987).
- *Sponsoring or Coaching*: Guiding and developing less experienced personnel in their critical roles; behind-the-scenes support, protection, advocacy and sometimes "bootlegging" of funds (Robert, 1968).

#### **2.10.5.1 Organisational impact**

Success with the Internet requires continual changes in organisational culture, structures and personnel (Boddy & Boonstra, 2000). While the technical and design aspects receive a lot of focus, doing business on the Internet also depends on making coherent changes to other "softer" aspects of the organisation.

Organisational culture is a balancing act between turbulence and stability, caution and challenge, continuity and change, tradition and new paradigms. As a result, an organisation that is continually reinvesting itself in the face of widespread or massive environmental and industry change will, by its very nature, have a more fluid culture than one with more conservative leanings. To some extent, this difference can be seen in organisations that are "pure play" versus those that are "clicks and mortar." Some cultures are more receptive to change than others and some sub-cultures develop that see the Internet and online customers in a different way to those within the more traditional culture. Sometimes this is because of the work they have done as members of the Internet project team, because they are relatively new to the organisation or, in some cases, are younger in age.

In today's business environment, organisations face the harsh choice of either adapting to technological changes in management information systems or declining in organisational viability. Therefore, the relationship between information technology and organisational change has become a central concern" (Rossetti & DeZoort, 1989, p29). As soon as an organisation takes the initial steps from data to information, its decision processes, management structure, and even the way its work is accomplished

will begin to be transformed (Drucker, 1988). Companies aiming to do business over the Internet face three possible structural issues: whether the current structure will itself help or hinder them, whether to work in partnership with another business and whether to integrate the Internet activity with the existing business or to create a separate unit.

"An organisation's culture reflects assumptions about clients, employees, mission, products, activities and assumptions that have worked well in the past and which get translated into norms of behaviour, expectations about what is legitimate and desirable ways of thinking and acting. These are the locus of its capacity for evolution and change" (Laurent cited in Evans, 1990). The way an organisation presents itself and operates is shown via its online presence. Having a Web site in turn has an impact on the organisation's culture through the responses it receives from the messages sent and displayed, through the visual images, logos, branding and artwork.

"The culture of an organisation defines appropriate behaviour, bonds and motivates individuals and asserts solutions where there is ambiguity. It governs the way a company processes information, its internal relations and its values. It functions at all levels from the subconscious to visible" (Hampden-Turner, 1990, p1). Those organisations that have existed prior to going online will have a culture that needs to translate online by permeating the Web site, emails and other online functions. To some extent this may be merely an extension of existing customer service and marketing functions and in other ways it may involve a sizeable shift from traditional paper-based communication and offline processes.

Managing knowledge is important for an Internet organisation and connectivity is a prerequisite for the management of knowledge. The technical aspects of connectivity are not always the issue with human attitudes and biases lagging behind the introduction of new technologies, limiting the full potential of investments that bridge distances between people. Many employees may experience a loss of power and autonomy as the organisation becomes increasingly connected. Leadership needs to be in place to model how connectivity increases power and autonomy by enforcing a value of sharing knowledge and expecting everyone else in the organisation to do the same. Business intelligence through computing power and information and insight can provide competitive advantage.

Among traditional companies, e-business has the potential to change everything including strategy, process, structures, systems, people and culture (Deise, Nowikow, King & Wright, 2000). In terms of technological change, the Internet provides another tool for some companies to leapfrog others by reinventing themselves for the future. Those companies that are creative and fast moving may benefit from having the "first-mover advantage" while others are more likely to prosper from adopting a "fast-follower" stance. The Internet is a technology-based communication mechanism that through its attributes of speed, collaboration and personalisation allows people and businesses to communicate more effectively. The technology holds this potential but the organisational culture and its degree of readiness to embrace change and accept

fundamental shifts in commonly held beliefs and processes is the determining factor to successful uptake and adoption within the business.

"While New Zealand has demonstrated an internationally high level of infrastructure uptake of technologies, systems and products developed offshore, nonetheless, fears still exist that New Zealand firms may not be as well placed to themselves develop new products and applications based on electronic trading" (Boles de Boer, Evans & Howell, 2000, pp. 57-58).

In some industries in particular, moving quickly to establish a superior e-enabled position can create significant value. If however most participants in a particular industry access the benefits of e-commerce then competition will probably drive down prices throughout the supply chain, especially in the area of B2B e-commerce. The cost savings generated would be competed away with customers the main beneficiaries.

The Boston Consulting Group (2000) say that Australian and New Zealand businesses stand to gain from e-commerce but suggest that this will not be in the way these businesses are expecting, rather they must quickly evolve beyond their current defensive focus. They suggest the real value of e-commerce will derive from restructuring distribution and supply chains and embracing collaboration with trading partners. To sustain lasting advantage, businesses need to influence standards, use their market power shrewdly and lock up critical alliances.

Boddy & Boonstra (2000) researched staff in a major European financial services company and examined the views of staff in several organisational areas towards various Internet proposals. They found those in an 'internal process' culture that typically performed routine back-office data processing functions were hostile to Internet ventures. They tended to be described as being 'stuck with their own systems' which were so large and interlinked that any change was threatening. The staff in new business areas of the company or 'open systems' were much more positive, seeing the Internet as a way towards new business opportunities.

If the prevailing culture supports the Internet proposal, then people are more likely to accept it with enthusiasm and commitment. A supportive culture as shown by managerial promotion of Internet initiatives and openness to change is essential to organisational survival and success in an environment where organisations are competing on service rather than price margins. If there is a mismatch between the culture and the Internet use envisaged, there will be resistance, resentment and a lack of commitment.

Managers must identify and communicate the need for any changes in behaviours related to putting a business on the Internet. Sometimes employees perceive that change is occurring for the sake of change so managers can show their "cleverness." It is also essential that the message be disseminated throughout the organisation accurately, in a timely fashion and with sufficient detail. Accurate messages reduce

misunderstandings and uncertainty. Timeliness provides urgency and currency and detail provides the proper context for employees to evaluate business and skills requirements. These three aspects are especially important for organisations shifting to e-business rather than those that begin as an e-business.

Organisations undergoing change may face several types of resistance; resistance based on the need for additional information, resistance based on lack of understanding and uncertainty and resistance based on deep mistrust (Deise, Nowikow, King & Wright, 2000). The need for more information is a common type of resistance that can be alleviated through use of active communication by strong leadership and employee involvement in the change.

#### **2.10.5.1.1 Internet and the advantages of organisational change**

Nearly 600 business leaders around the world said they felt strongly that the Internet was beginning to transform the way all companies do business. The 1999 Booz Allen & Hamilton survey ([www.bah.com](http://www.bah.com)) found 92% of them believed the Internet would reshape the world marketplace by 2001. Louis Celi of the research project said he was surprised by that high figure which showed that “companies across the board were shifting gears to meet the challenges of the Internet.” Because of the Internet, 61% of the participants said their companies would be better able to achieve their strategic goals. They believed the technology helped them improve customer satisfaction, reduce cost structures, globalise operations, foster innovation and accelerate speed-to-market. At the same time, 30% of respondents said that the Internet was forcing them to overhaul their strategies- or risk losing to nimbler competitors who had learned to harness the power of the Internet. They were divided on how long it would take before they saw economic benefits from going online. The survey found 68% thought there would be “no payoff” from the Internet until 2001, but 28% had seen some benefit already (Net Trends, 1999).

#### **2.10.5.1.2 Changes in organisations**

With constantly evolving product and/or service offerings, companies may need to shift their corporate structures and the responsibilities within those structures. Doing so allows the company to better meet customer needs. Simultaneously, companies must restructure their compensation, recognition and rewards policies. If employees are expected to provide innovation and to drive change as part of their day-to-day activities, they must do so within an environment that supports flexibility and discourages working individuals, groups, departments or divisions from maintaining the status quo.

Companies must manage cultural change proactively to anticipate employees' changing needs and must consider that those needs will extend beyond recognition and rewards to include such areas as medical benefits, savings plans, investment opportunities, training, work-life balance and family-friendly environments.

The Internet also erodes conventional barriers between organisations with opportunities to reinvent the supply chain. Joint ventures are also supported by

Internet applications with alliances between organisations in related industries. New structural forms require new management approaches, especially in creating appropriate institutions to manage the relationship (Boddy, Macbeth & Wagner, 2000).

At the outset of the transition to putting an organisation on the Internet, the business must work to communicate the correct message by demonstrating openness to employees willing to undertake the changes and challenges of the e-business environment by integrating the individuals. In e-business, companies must connect the right individuals to each other at the right time and create an interaction. In its research on differently structured e-businesses, Forrester Research (cited in Deise, Nowikow, King & Wright, 2000) argued that the challenge lay in meshing 20-year veteran employees with telecommuting Web employees who define loyalty as sticking with one job for at least the time required before they can cash in their stock options.

Innovation management is the ability to stimulate and apply useful new ideas. An innovative company has five fundamental characteristics: high degree of management trust, active flow of ideas, few organisational levels between executives and customers, explicit idea management processes that people adhere to and the ability to recruit and retain talented managers who delegate decision making, involve others in developing ideas into actions, routinely envision the future based on intimate market knowledge, do not rely on the board alone for significant new ideas and take a balanced view of risk (Deise, Nowikow, King & Wright, 2000).

#### **2.10.5.1.3 Change management**

Historically, most businesses have difficulty managing major change, regardless of whether the change is driven by technology, merger, acquisition or some other source. People are resilient and will embrace change if management properly prepares and educates them on its personal impact. However, much major business change is so complex that management is focussed on survival of the bottom line and not necessarily on factors motivating employees. At a time of rapid industry transformation where current standards of major business change are being eclipsed by fast-moving decisions to merge, form alliances and joint ventures, it is vital that managers carefully consider employee interests and well-being. In business transformation, the only stable element that a company will have, and that its ultimate core competency will consist of, will be the knowledge base of its employees (Deise, Nowikow, King & Wright, 2000).

Boddy & Boonstra (2000) say managers are more likely to develop an effective Internet business if they create a climate that is supportive and encouraging of employee effort towards the project. They say managers need to put time and effort into the issues related to a positive Internet culture such as ways to ensure operational and IT staff remain committed, ascertaining whether customers and suppliers are able and willing to change and considering whether the Internet activity will be a separate operation or integrated with the current business.

If the current structure rewards stability, a continuation of current methods and strategies and a respect for tradition and hierarchy, change in terms of migration of all or part of the enterprise will be slow. Alternatively, a structure which reflects a positive approach to innovation and which rewards those who challenge existing structures and systems will encourage people to propose and support Internet initiatives which are likely to result in rapid change.

Dutta & Segev (1999) comment that those organisations likely to do best on the Internet are those that transform their internal structures to make the most of the opportunities the Internet offers. The Internet has made possible the transfer of information round the business to support a unified and flexible response to both internal and external customers. This is only likely to happen if established structural barriers which impede information flow are broken. Burns & McFarlan (1987) say organisations have little choice but to become information-based, given the numerous benefits associated with new technologies such as enabling the speeding up of changes in corporate policy, helping managers allocate resources more effectively, aligning disparate parts of the organisation with company-wide goals and facilitating collection of data for strategic and operating decisions.

#### **2.10.5.1.4 Organisational issues of change management**

The mark of a twenty first century organisation includes certain characteristics that will set it apart from its old economy counterparts. These characteristics include key guiding principles such as having a highly focused customer-centric culture that is aligned from the top down to provide exceptional customer value throughout the entire company. Relatively flat management structures will encourage an environment that fosters rapid decision-making. Internal processes and systems will be optimised knowing they must build their business processes and technology platforms in a way that integrates with external organisations, including customer enterprises, trading partners, exchanges and suppliers (Raisch, 2001).

The entire workforce needs to understand the changes involved in moving from a traditional environment to one that operates online and has electronic partnering with other organisations. The new business case or model and the vision for change should clearly define the organisation's refocused strategy and the anticipated changes. Frequent and open communication is required to reinforce new patterns of behaviour as the company changes its business operations and makes increased use of the Internet throughout the business. Communications need to clarify what has changed, what may change and what has not changed.

Drucker (1988) says one primary area of an organisation to be affected by the integration of information technology is the organisation structure. Specifically, the shape, composition and degree of decentralisation in an organisation's structure must be adjusted to accommodate the surge of information systems.

Deise, Nowikow, King & Wright (2000) see e-business as a disruptive technology and the use of it has serious implications for the ways that companies manage their day-to-

day operations. Channel enhancement requires fundamental changes in the way existing processes are executed. While these new processes may not be completely different from previous systems, they do represent a new way of doing things. Some processes may be eliminated through channel enhancement, freeing up resources to focus on more value-added activities. In addition to existing processes, channel enhancement also requires businesses to develop processes in new areas. In particular, management of e-business related content is critical for successful marketing, buying and selling over the Internet. Not only must businesses create processes in this area but they must assign ownership of these processes and train their employees to execute ownership of them (Deise, Nowikow, King & Wright, 2000).

When customers buy through a Web site, the roles of employees change. If effective systems are in place, staff can spend less time handling the routine aspects of the transaction such as payment and delivery requirements. More time can be spent on tasks that build the business such as understanding customer needs and being proactive towards them. "These changes in staff responsibilities mean that different types of skills are needed and rewarded. There is more need for creative qualities and a tendency to define staff roles less, resulting in a fundamental change to a company's culture" (Financial Times, 1999).

A similar situation exists with B2B applications as it does with B2C. Using the Internet to transmit applications automatically from one business to another means less need for routine data entry or transactional tasks, allowing employees increased time to take on more value-adding tasks.

### **2.10.6 Communication**

The next subsection looks at aspects related to communication such as communication with customers via a Web site, the use of an Intranet for internal communication, communication with customers and the role of communication in building online communities.

#### **2.10.6.1 Communications via a Web site**

An organisation's Web site is an important channel for communication with customers. Planning for the Web site needs to be closely aligned to the organisation's communication strategy.

It is important that the site uses the available visual and sound effects to communicate information and persuade visitors to take some action such as placing orders or providing personal details that give the business valuable data to use in future communications and targeted marketing. While it will become increasingly common for customers to have broadband access, some video connections are still far too slow (at 56 kpbs dial-up speed) for acceptable video to provide some form of face-to-face contact.

Ease of use and readability are key aspects that should be considered when a business constructs a Web site. Providing details such as physical locations, mailing addresses

and telephone numbers (if the business is not pure play), are not only common sense but add credibility to the business.

The growth of Web sites for businesses, institutions and individuals has led to a huge amount of advice on how to develop and maintain a successful site. More often than not, this advice is theoretical, prescriptive, based on conventions rather than evidence, or focused primarily on technical and commercial aspects of a site rather than its ability to engage with the site's visitors according to Durham (2000).

Some of the major communication faults of Web sites are caused by not paying enough attention to the aims of the site and the audience's needs, leaving major communication choices to the technical experts, an overly strong focus on the visual communication elements and lack of analysis about the communication effectiveness of the site.

Durham's (2000, p3) research resulted in four general findings that can add to the current knowledge about research and information about Web sites, their communicative nature and effectiveness:

1. Although the number of studies about Web sites is growing, interest is still predominantly on other aspects of the Internet, including more ephemeral or informal writing such as email messages and chat room dialogue.
2. The literature on effective Web sites suffers from the same problem that until recently characterised literature in the technical writing field, that is, the popularity of unsubstantiated and idiosyncratic guidelines and the dearth of research-based information.
3. Empirical studies about Web sites, especially considering the Web sites as texts, are still small in number but the results help to identify communication issues.
4. The current empirical studies often lack theoretical frameworks to help make sense of Web sites and the communication choices that they embody.

Some guidelines about Web sites appear to rely on Web writing and design "folklore" with little substantiated evidence. One commonly mentioned example is that readers should never be more than three clicks away from desired information but no rationale for this rule is evident. Other guidelines provide principles or prescriptions that are difficult to quantify. Durham (2000) cites one source that identifies "bad" Web pages as ones that are "unattractive" or "lack a logical organisation" and another that tells the Web site creator to "write clearly."

Morkes & Nielsen (1997) researched Web writing styles by manipulating a Web site's text to create five different writing styles and then used readers to test for comprehension and reaction. They concluded that written material for the Web needed to be concise, scannable (able to be read easily) and objective. Usability analysis of a document's language and visual design choices can suggest its impact on readers' ability to orient themselves in the document, find information and process it effectively (Truchard & Katz-Haas, 1998).

Organisations are considering the level of interactivity available on their site and moving from email links, a search function and downloadable files to subscription services, voter surveys, order facilities and in some cases bulletin boards and chat rooms. More research needs to be done about audience involvement on organisational Web sites and the cost-benefit analysis of interactivity from a business perspective.

Durham (2000, p9) referred to studies in the human-computer interface (HCI) field that analysed how well Web sites communicated with their users. Carroll, Mack & Kellogg (1988) have done research on the development of metaphors, with attention to what may be intuitive for users to comprehend and use when working online. Other HCI studies consider the breadth of depth of structure in a Web site (Larson & Czerwinski, 1998) in terms of helping users find and comprehend information. Durham (2000) cited a study by Anderson, Campbell, Hindle, Price & Scasny (1998) of editing levels that includes considering what the authors call the 'big-picture issues' such as audience definitions, information categories and hierarchies and screen layouts.

It is also important that Web site designers and organisations commissioning Web sites understand the various needs of the expected and actual users. Various user groups- young, academic, professional, elderly- have different needs and successful sites cater for a range of groups and sectors by providing content and design relevant to their interests, needs, ability with computers (such as downloading files), spending patterns and comfort levels with online services such as transferring funds and accessing help files.

Communication and collaboration are the critical success factors when building a successful knowledge enterprise (Raisch, 2001). Building an open communication climate between employees, customers and partners is critical. One way of achieving this is via an organisation's Web site that serves as a communication conduit.

#### **2.10.6.2 Intranet for internal communication**

Companies are discovering that in addition to its external applications, the Internet has a number of internal business uses. An intranet is an electronic information repository, similar to a corporate encyclopaedia stored on a computer (or computers) that all employees can access using browser software. Browsers use the existing and largely free Internet infrastructure of computers, software and phone connections to reach the intranet (McCune, 1996). Intranets are cheaper and more efficient than other electronic technologies, particularly for companies with widely dispersed employees, some of whom work from home. Reduced set up and running costs, ease of filing and updating, time saved locating information, better collaboration and a way of building company unity are all reasons given for having a company intranet.

In a large organisation of several thousand people based in several countries, the construction of an internal net based on Internet protocols, called an intranet, means that employees of that company can work together more closely and more productively. The construction of a private external net, or extranet, means that a

company can have confidential communications with its clients, suppliers and contractors. This synergy and impressive leverage with data, means that companies have to reorganise, merge, downsize or redefine their business plan.

Intranets are a cost efficient method for communicating with internal customers and stakeholders. Internal documentation, business forms, announcements, product specifications and so on are served from Web servers onto the network, either with or without linking them to the outside world. (Brooks, 1998) said when employees are empowered to go online and change their own demographic or financial data, it helps to ensure the data is accurate. Employees may also perceive that their company is making an investment in them through the development of an intranet, giving them the information and tools they need to make intelligent informed decisions.

According to Forrester Research, in April 1997, 64 percent of Fortune 1,000 companies already had an intranet. Another 32 percent were building them (Maddox, 1997). The major generic functions that intranets can provide according to SurfCONTROL (1997) are corporate, department and individual Web pages, database access, search engines and directories, interactive communication, document distribution and workflow, groupware, telephony, integration with electronic commerce and extranets. Internal networks are not unusual as they have been around for a long time.

A study conducted by InformationWeek with 988 responding managers (Chabrow, 1998) found that the information most frequently included in intranets are corporate policies and procedures, document sharing, corporate phone directories, human resource forms, training programs, customer databases, product catalogues and manuals, data warehouse and decision support access, image archives, purchase orders, enterprise suits and travel reservation services. This range of information can be used via intranets for electronic commerce, customer services, reduced time to market, enhanced knowledge sharing, enhanced group decision and business process, empowerment, virtual organisations, software distribution, document management, project management, training, facilitating transaction processing, eliminating paper-based information delivery and administrative process support (Robinson, 1996).

The negative aspects of intranets don't receive as much coverage as the benefits. One of the disadvantages is the ease of posting documents online that may mean a proliferation of ill-organised material. Another issue can be that the presentation and content doesn't conform to any particular style guidelines meaning that the quality and tone can be uneven with some pages not checked for accuracy.

Companies need to be sure that they have sufficient resources and staff knowledge to set up an intranet. The size of the organisation needs to be considered and a cost-benefit analysis done. If the organisation is not large and already has satisfactory systems for sharing information, the expense may not be justified.

Gloor (2000) said e-business technology enables new modes of operation, creating numerous new business models and employment opportunities and requires not only IQ but also emotional intelligence. It also requires that information is shared and accessible to everyone. Companies need to invest in creating a culture that values sharing of knowledge and accepts change from the inside and the outside. An organisation's intranet can help achieve this by providing a medium for the sharing of information and enabling discussion and employee questions on change to be answered. Gloor (2000) identified continuous e-business education and a collaboration infrastructure as two e-business critical success factors.

Gloor (2000) also saw that companies based in more than one location needed to invest in setting up an adequate infrastructure for collaboration via a computer network. Using extranet technology small businesses need not hesitate to make this investment. After the physical infrastructure is set up, a company culture that values collaboration and the sharing of knowledge is a "must have." Although setting up a successful e-business collaboration infrastructure still requires substantial up-front investment, it will pay back rapidly in improved communication and co-operation between the employees working at different sites. This allows companies to streamline their business processes and to create new products impossible in a company consisting of isolated islands.

Internet, e-commerce and e-business have tremendous potential to create new business opportunities, jobs and wealth. Companies that have the information will get a competitive advantage, but companies that create a culture that values the sharing of knowledge will achieve sustainable success. One way to "capture the culture" is via an intranet.

The network of a large corporation may have dozens, maybe hundreds, even thousands of baby "intranettes" in various nooks and crannies of the organisation. The Boeing Company in Seattle, for example, discovered more than one million pages hosted by at least 2,300 major intranet sites on more than 1,000 Web servers. There could be even more intranet sites, company officials acknowledged (cited in Sliwa, 1999b).

Intranets have sprouted like weeds in many corporations, which isn't surprising because they're reasonably cheap and easy to set up. Some of those far-flung intranets grow up unsupported by the information technology department, a problem that already exists with independent PCs. Gene Phifer, an analyst at Gartner Group, calls this semichaotic state of affairs the "Wild West intranet." Companies face a balancing act in trying to "rein in" the intranets while leaving employees enough freedom to meet their business needs. Too much control can dampen the entrepreneurial spirit that made the intranets grow and thrive in the first place.

Left unchecked, however, unsupported intranets can give company officials a headache. Boeing, for instance, was happy that an industrious employee had built a corporate "Boeing Look Up Everything Site," or BLUES. Colleagues had grown to

depend on it. But when the employee left Boeing for another job, the company had to find a new owner to tend the orphaned site.

Stale content can be another problem. A major company reorganisation, for instance, wasn't reflected on every intranet page at Charles Schwab & Company, so some employees got incorrect information.

Inappropriate content for a business-oriented intranet, whether a personal page, offensive information or sensitive company data, is another persistent concern among companies with loosely controlled intranets. "You wind up with some aberrations, and the fear is that the aberrations are going to be the majority, and that scares you to death," said Graeber Jordan, Web program manager at Boeing.

At US West, any sites deemed critical to the business must conform to company standards to be included on its Global Village home page. That means using a designated set of servers, conforming to design requirements and carrying the site creator's contact information. For capacity planning purposes, US West audits its 600 sites to monitor network activity and track growth rates.

US West does not have plans to stitch together its grassroots sites "unless there's a compelling reason to do so," Laube said. He said he prefers to let the evolutionary migration process take place for the sites that carry the most value. At the time, the company's next project was figuring out what corporate data was on the sites, so it could decide if it wanted to label sensitive content "US West confidential" or place it inside password-protected sites (Sliwa, 1999b).

Charles Schwab, which has close to 100 Web servers dishing out intranet content, planned to take an extra step and get as many sites as possible to use a new, structured content-management system. "More and more (sites) will migrate as people see the benefits of this," said Tom Voltz, managing director of the San Francisco brokerage's intranet services.

Consultants and analysts agreed that some level of central IT department control is needed to ensure an intranet stays up and running, security policies are maintained and content is managed. But where a company fits on that chaos-to-control spectrum may depend on its needs, stage of intranet development and corporate culture.

For companies just getting started with intranets, that could mean adding a front-end search engine requiring page design templates or building a centralised intranet portal that provides structure and navigational aids. Companies that already have portals can add a more sophisticated search tool or content-management system or try to bring more grassroots sites into the fold.

Eric Brown, an analyst at Forrester Research Inc. said having a portal "is the new bar that defines what an intranet is." "It's not sufficient to just have a bunch of [internal] Web sites and browsers," he said. "It's not an intranet until I have some unifying force

that pulls all of these things together into something that's useable." However, several intranet managers said they don't like to link every site to the main portal page, because some departmental sites may be useful only to small groups of people and consolidation will inevitably face turf battles. "The single biggest challenge in this kind of project," Walsh said, "is to achieve organisational consensus to bring unity to all of the different intranets" (cited by Sliwa, 1999a).

### **2.10.6.3 Customer communication in crisis situations**

Customers who send email expect instant results, and companies must respond that way, Trusky said. They need to send instant messages saying they've received the email and will have an answer in 24 hours, she said. Companies also shouldn't have messages sent to a general address for a huge range of issues, Trusky said. Instead, it needs to be clear to whom messages are sent to and who can act on them, she added (Ohlson, 1999f).

The US Bureau of Business Practice was predicting that online users would receive more than seven trillion messages in 2000, according to the bureau's Call Centre Manager's Report. With that magnitude of email usage, businesses need to stay on top of their customers' messages, the report advised. In 1999, 50% to 60% of email wasn't answered by businesses at all, and only 20% was answered within one day, the Bureau of Business Practice said.

One problem is that marketing and sales divisions don't include customer service when deciding on an email system, said Anna Maria Trusky, editor of the report. Those divisions may not know how equipped customer service is to handle customer requests, she said. For example, the customer service manager may be the only one who is Web-enabled, Trusky said. Big businesses need to set up an email direction service or aliases so that the appropriate people in the business deal with email related to their area such as [enquiries@mybusiness.co.nz](mailto:enquiries@mybusiness.co.nz), [sales@mybusiness.co.nz](mailto:sales@mybusiness.co.nz) or [service@mybusiness.co.nz](mailto:service@mybusiness.co.nz).

Email is ideal for communicating with customers during crisis situations if it's managed properly. In the case of the airlines, email is cheaper to deal with than phone calls. Companies equipped with automated systems can send emails to frequent fliers to give them information about alternate flights or direct them to the Web page for more information.

American Airlines initially underestimated customer demand when they launched their Web site. Since then they have used email and the organisation's Web site to send communication to and receive communication from customers when about 450,000 passengers were caught in the middle of an American Airlines pilot strike. A spokesman at American Airlines said since it started on February 8 1999, the airline's Web site received hundreds of thousands of unique hits per day, a 40% increase at the peak of the crisis from normal levels. Customers sought real-time information about flight cancellations and refunds.

Email was up, but most messages were "opinion" postings from passengers lashing out at the pilots. "I don't think our customers view email as a method for solving [short-term] problems," said Tim Smith, an American Airlines spokesman. He declined to say how the company handled incoming email but said American Airlines had revamped its Web site and had no problems handling the increased traffic (cited in Fusaro, 1999).

Northwest Airlines faced a similar crisis when its pilots went on strike for almost two weeks but the airline used an automated email response system to send canned responses and updates to travellers grumpy about having their travel plans up-ended. Paul Long, analyst for online distribution at Northwest, said the strike prompted a 30% increase in email and a 10% boost in page views at its Web site. The company wasn't overwhelmed over by the increased volume of email. In fact, it realised a 50% increase in productivity (measured in number of emails answered per day compared with previous numbers).

Email-based customer service isn't universal among airlines, however. For instance, Southwest Airlines won't accept email because, according to its Web site, "our ability to support E-mail in a manner consistent with our service expectations isn't fully in place." Site visitors are encouraged to send postal letters, not email (cited in Fusaro, 1999).

#### **2.10.6.4 Communities**

If an organisation's online presence supports a virtual community, typical communication activities of an online community can include chat rooms, threaded discussions, bulletin boards, email, electronic magazines, newsletters, bulletins and general Web postings. The various forms of communication cover synchronous (real-time) and asynchronous (delayed) communication and may be between one: one, one: some or one: many. To ensure prompt feedback and effective communication occurs, organisational resources need to be deployed to ensure each form of communication is adequately catered for.

Whether virtual or not, communities generally share the three I's: interest, incentive and interaction ability (Raisch, 2001). Internet communities often form for the purposes of exchanging information and knowledge and to facilitate commerce. Members of a community must have the ability to interact with each other and the easier it is for a potential community to interact, the more likely it will interact and the stronger it will grow. Providing services to users can contribute to providing a vibrant online community such as the Xtra site, especially those services that facilitate communication among community members and between community members and the organisation. Raisch (2001) suggests these services could include free email, chat rooms, threaded discussions, search engines, maps or directions, yellow pages, bookmarks, free downloads and news clipping services where appropriate.

Identifying and serving the needs of community participants is essential for building and maintaining a strong community. The greater the relevant content and

functionality, the stronger the relationship with the community member or participant. Communicating with the community during the community building process may be through focus groups, advisory boards and through researching the content and format of both online and offline media addressing the target audience or segment. The research should include potentially competitive and complementary sites. Attention needs to be given to membership and maintaining databases. Ongoing market research should include both monitoring and active involvement in community activities.

Involving community members in site activities and integrating the site into the regular routine of the community member and where appropriate their organisation can build loyalty and value. Building a feeling of investment in the community by providing opportunities for input can also be useful for determining the evolution of the site. While online involvement can take many forms, those entailing person-to-person communication tend to build the strongest loyalties (Raisch, 2001). Strong community building minimises the need for the visitor to go elsewhere for function or content by maximising the number and duration of visits by making the environment as rich and compelling as possible. Jupiter Communications (cited in Raisch, 2001) reports that online customers can sustain only ten significant relationships with Web sites at any one time.

Personalisation, as defined by Raisch (2001), can be looked at as the distillation of an individual's demand curve for his or her online experience. The more options offered to the community member, the more he or she can fashion their own space to reflect their needs and preferences. The more personalised their experience becomes, the stronger the attachment to the community grows and in turn, the greater the barriers to switching to another community.

### **2.10.7 Marketing**

This subsection of the thesis looks at those organisational issues related to marketing. An organisation's Web site marketing aspects, Internet advertising, branding, email and permission marketing are covered to determine those areas that strengthen an organisation's Internet presence.

Kotler (1991) defines eight functions of a marketing channel and most of these are also present in the Internet when viewed as a marketing channel. These are collecting and disseminating market research information, promotion to attract new or existing customers to products and services, negotiation, ordering, delivery of information and services, payment, risk taking such as online trust services, and financing.

According to Kotler (1991), marketing communication consists of advertising, sales promotion, public relations and personal selling. The communications mix depends on communications objectives, target audience, nature of the message, available communication channels and communications budget. A number of writers (Hoffman & Novak, 1995; Kalakota & Winston, 1996; Vassos, 1996) have considered how the different nature of the Internet is changing marketing communication. Hoffman & Novak (1995) state the Internet enables marketing communications to become more

interactive, available on demand, targeted through micro-marketing, individualised through one: one marketing and enables differentiation that helps to reduce price competition.

In most marketing studies B2C interaction has been addressed, rather than B2B. As yet, a model for B2B electronic marketing communications does not seem to exist that provides an integrated approach to deal with several possible marketing communications channels, including the Internet (channel coherence) and also takes into account the characteristics of Internet-enabled industrial markets (Timmers, 2000).

"Internet companies are based on low margins and high volumes and it is critical to attract customers quickly to achieve profitability. Marketers must balance their expenditure on attracting, retaining and servicing customers with the revenue stream generated by customers" (McNaughton, 2000). "Basic marketing principles are a sound foundation for Internet marketing. It is the context in which the principles are applied that is changing. Internet businesses have relatively few tangible assets, yet the Internet can offer significant cost advantages for technology based companies over traditional businesses."

McNaughton (2000) feels the Internet offers marketers the ability to measure effectiveness and see how their actions influence the value of firms and how marketing activities create wealth. Internet marketing business models are also more readily adjustable or scalable to cater for changing market dynamics. For example, Internet businesses can be scaled upwards to serve global markets quickly with less investment than traditional businesses. Professor McNaughton said: "Until now the important Internet marketing levers of transparency or nakedness, scalability, network effects and speed have not received much attention as elements of marketing strategy. Traditional firms could benefit significantly from applying these levers to their own business methods."

#### **2.10.7.1 Consideration of site's marketing aspects**

Aspects of Web site design are a frequent focus of popular magazines. Visuals including product shots, 3D images, illustrations, diagrams and graphic support are important in the purchase decision process. It is important to include as much relevant information as possible about how customers can benefit from a company's products and services. The effort will result in more sales to a broader customer base and ensure repeat business.

Advertising on the Internet is not the same experience that customers are accustomed to having with print, radio or television where prospects who want to take advantage of an advertisement's value proposition can go to a physical location. Many e-businesses are discovering they need to use traditional marketing methods such as those used in television and radio advertising in addition to Web based advertising such as online banner ads.

Jackson (2000) illustrates the fact that many companies have Web sites which customers find deeply unattractive with the following figures. "Around 70 per cent have a visit-to-buy conversion rate of two per cent or less. Approximately two-thirds of the shopping carts that users fill with possible purchases are abandoned before they reach the check-out." While some of this can be attributed to poor Web site design and lack of customer confidence in site security, failure to complete the final stage in the purchase process illustrates some problems with marketing as well.

### **2.10.7.2 Internet advertising**

Growth in Internet advertising (or Web advertising) in the US has been extremely rapid since its introduction in 1994. The Web is likely to remain a secondary advertising medium for advertisers in the short term because of its low reach, limited intrusiveness, low bandwidth and lack of standardised measurability. Web advertising is also unlikely to have a negative impact on the amount of money spent by companies on more traditional advertising media. Current revenue from Internet advertising in New Zealand has been minimal and research indicates New Zealand is well behind the United States in its use of the Internet as an advertising medium (Vosper, 1999).

Vosper's 1999 study of New Zealand SMEs and Internet advertising found that the lack of coherent and reliable information about visitors, the lack of effectiveness and impact of Web advertising are major deterrents to Internet advertising. SMEs wanted to understand more about how to use the Web to better effect and recognised that the potential of the medium as an advertising vehicle lies in the immediacy of its delivery, the ability to create relationships with customers and its cost-effective nature.

In 1998, Web marketers spent \$1.5 billion in total advertising online in the United States, and that amount was predicted to grow to \$2.6 billion in 1999, according to a report released by eMarketer. In non-United States markets, Web-based advertising revenue was predicted to rise from \$206 million in 1998 to \$694 million in 1999 with revenues predicted to reach \$7.3 billion in 2002.

According to the report, the United States retained 93% of the worldwide online advertising dollars in 1997, with the United States share dropping to 79% in 1998 and predicted to decrease to 55% by 2002, the consulting firm said. Meanwhile, by 2002, worldwide advertising on the Web would total \$16 billion, eMarketer said.

Despite its infancy, the Internet is proving to be an emerging advertising medium to reach consumers. Internet advertising garnered \$1.92 billion in revenue in 1998, exceeding the more traditional advertising category of outdoor advertising, with an estimated \$1.58 billion, according to a report by the Internet Advertising Bureau (IAB). Outdoor ads are generally billboards.

According to the IAB report, consumer-related advertising led the pack in online spending (29%), followed by computing (20%), financial services (19%), telecommunications (8%) and new media (7%). Banner ads were the most

predominate with a 56% share, and sponsorships were in the second slot with 30%, the report said.

The report is produced by the New Media Group at PriceWaterhouseCoopers for the IAB and issued quarterly. Data is tallied from more than 200 companies representing more than 1,200 Web sites (cited in Ohlson, 1999b). EMarketer's report consisted of compiling and analysing research information from different sources, including Forrester Research Inc., Gartner Group Inc. and the Internet Advertising Bureau (cited in Ohlson, 1999c).

### **2.10.7.3 Decisions on marketing mix**

Companies must also decide which marketing materials to post on their Web sites. Web technology allows customers to directly access information on products and services, place orders and get answers to specific questions. As all of these transactions can now be captured with e-business technologies, businesses are able to analyse purchasing trends, identify geographic, demographic and cultural differences in buying habits, and to predict seasonal buying trends and consumer behaviour.

As a result, marketing departments within a business must figure out the appropriate promotion and advertising campaigns for their target segments. Web technology allows these marketing campaigns to be delivered, analysed and modified in real time, gaining a significant advantage over conventional marketing methods. As an example, organisations can analyse buyer data to determine the correct point-of-sale promotions including cross selling (selling a related product such as shampoo with a conditioner purchase) and up-selling (selling a larger size or quantity from that originally desired by the customer) offers. All of these considerations have a significant impact on the new processes that must be developed in the marketing area.

Channel enhancement provides a drastic change to the way companies perform sales and order management activities. Those employees who formerly took sales orders over the telephone are now free to perform troubleshooting on orders or to perform other value-added activities, including maintaining sales data on the Web site, such as pricing and product descriptions. Another advantage of Web-based marketing is that the effects of price changes can be assessed by quickly measuring the change in sales volume that results from a temporary change in price. In addition, sales representatives are now able to obtain up-to-date information in real time on products, markets, customers, and competitors. This capability allows the employees to concentrate on increasing revenues and sales (Deise, Nowikow, King & Wright, 2000).

### **2.10.7.4 Branding**

Product brands have often been barriers rather than links to customers. Brand economics work best when an umbrella or "banner" synergy is in play. Sustaining a separate portfolio of brands is less tenable in a cluttered media and business environment. Success requires integrating the efforts of all stakeholders, especially staff (Deise, Nowikow, King & Wright, 2000). Corporate branding, which works through staff, is about managing the company's reputation across all audiences. This

management is even more critical as the competitive emphasis moves from products and transactions to meeting needs through two-way relationships, where trust is the main currency.

The winners in this new networked environment will be those businesses that master digital and physical branding and leverage their brand through all customer channels (Raisch, 2001). While the Internet represents a new channel for marketing and selling to customers, the future opportunities are greater. Initial e-commerce applications targeted the implementation of online advertising, catalogue and order fulfilment systems, producing good bottom-line results for many companies. The online market has now embraced dynamic commerce, which is the buying and selling of goods and services through flexible pricing mechanisms that change with supply and demand. Information technology spending matched what traditional retailers with strong brands spent on marketing but was dwarfed by the amount pure play retailers used for marketing, a survey of 158 retail sites found. Marketing may need to command more of the budget of traditional retailers as they may underestimate the need to push their sites and brands online (Orenstein, 1999a).

#### **2.10.7.5 Email marketing**

In the United States, email marketing is considered the ultimate commercial application of online advertising — the so-called “killer app” (Jayne, 2001). Email can be a very powerful cheap direct marketing tool providing one-to-one, interactive communication with willing customers, and able to generate quick real-time response to specific offers. It can be used to reinforce branding, drive customer loyalty, generate new customers or offer new products to an existing customer base.

Two main aspects of its use are short-term transactions such as short email notes to highlight product specials and long-term relationship building, where permission or “opt-in” marketing can be leveraged for maximum advantage. Information is offered by product or service providers that they know will be appreciated by particular customers and in turn, they can be assured of growing their trade with those customers. Ann-Marie Brown of eVentures (cited by Jayne, 2001) says “when you have the opportunity to deliver something on a one-to-one basis, you have to be very careful about what you deliver. If you do it well, there are huge benefits; but if you do it wrong, it can be very negative.”

Some of the barriers to the use of email marketing are security and traffic volume issues. The lack of email databases has definitely curtailed growth according to Debbie Mayo-Smith of Successful Internet Strategies (cited in Jayne, 2001). She says the value of collecting customers' email addresses has yet to be realised.

Marketing must develop a strategy to get customers to the company's site, such as links from other sites or relationships with portals. At the same time, it should not forget the power of established media and the possible synergies between old and new marketing methods.

### **2.10.7.6 One-to-one marketing**

A key marketing concept that is often discussed in the context of Internet commerce is one-to-one marketing that is enabled by the Internet and technologies like databases, customer profiling and data mining. Peppers & Rogers (1997) define one-to-one marketing as using customer databases and interactive communications to sell to one customer at a time, as many products and services as possible over the entire lifetime of that customer's patronage (instead of selling one product at a time to as many customers as possible in a particular sales period).

One-to-one marketing is based on the knowledge of the customers and company flexibility to deliver customised products and services. This necessitates knowledge of individual customers, assessment of the lifetime value of customers rather than their one-off value, increasing the level of interactive communications with customers, keeping customer records and development of the customer needs in addition to the development of the internal flexibility to respond to a potentially wide variety of customer needs by customised development, production and delivery of products and services (Timmers, 2000, p159).

### **2.10.7.7 Permission marketing**

Seth Godin ([www.permission.com](http://www.permission.com)) sees permission marketing as the only solution to the 3000-a-day message attack on people's time and attention span. Traditional "interruptive" advertising needs to be quirkier or more controversial, and to hit harder or more often to break through the communications clutter. Godin sees permission marketing as based on getting a customer to "opt-in" to your marketing communications and "it's what will unlock the power of the Internet." Unlike traditional marketing channels, what the Internet offers is the capability of personalising communications to each customer's needs and wants.

Permission marketing is increasingly being seen as an effective alternative to banner advertising and it represents a growing share of total online marketing spend. In 1999, US businesses spent US\$97 million on it and that figure was expected to reach US\$7.3 billion by 2005 (Jayne, 2001).

Australian writers predicted permission marketing or one-to-one "opt-in" email marketing as a big growth area during 2001 because it is better targeted and more cost-effective than traditional advertising channels. In New Zealand, there has not been a great deal of online marketing but there are signs that this is changing. In 2000 several new companies launched with the aim of gaining an early share of the emerging market. Blue Chilli reported a "phenomenal increase just in the last quarter" in their range of front-end services from strategic aspects and overall marketing objectives to the detail of running online campaigns (Jayne, 2001).

Brave New World is another New Zealand example of a newcomer convinced that email marketing is destined to become a bigger part of the overall marketing mix. It claims so far to be the only New Zealand company that handles every aspect of email marketing from strategy, design and copywriting through to email hosting and doing

the tracking and monitoring analyses that feed back into planning. They also have their own database collection function.

Email marketing is seen as a way to break through the volume of messages with direct one-to-one messages that support both on and offline brands. Dave Clark, communications manager for Brave New World says "Certainly our shareholders' interest was to move quickly toward a totally integrated marketing and communications approach in order to establish a position in this emerging area." Despite nearly a third of New Zealand's population being connected to the Internet (Jayne, 2001), one of the reasons for a slower uptake of email e-marketing techniques has appeared to be the adverse publicity given to failed B2C initiatives. People are also adverse to spam and unless email offerings are well tailored and targeted, they can be perceived as an irritation. On the other hand, sending customised messages to people who actually want them generates the sort of response rate that is a vast improvement on traditional direct marketing rates.

### **2.10.8 Policies**

The following subsection looks at policies, privacy, legal and security issues that are critical for an organisation's online presence.

#### **2.10.8.1 Formal Internet policy**

An important part of the planning process is the setting of strategy and writing of policies. Businesses are learning the hard way that there need to be rules and restrictions on the access staff are given to the Internet. One large NZ corporation was delivered a legal letter threatening defamation action after an employee in work time had got carried away in an argument on a newsgroup dealing with computers. While the discussion may have been indicative of the debate that is carried out in newsgroups, the corporation decided it would have to pay damages to the person on the other side of the world because the posting to the newsgroup contained email address including the corporation's name. Legal advice given to the corporation was that the message could have been construed as an official communication from them.

What is libel in the Internet world is an issue that is still being clarified although it is safe to assume the rules of defamation apply to the word on the Internet as they do in any conventional printed form. More complex problems arise when the communication is global. Rulings in employment tribunals and courts in NZ and overseas have come to the same conclusion; what you do on a computer provided by an employer and done in office time is the business of the employer and employers are within their rights to take action if they disapprove. This applies to physical correspondence such as letters as well as virtual correspondence such as email.

The inappropriate use of email by employees can be a liability for a business. One potential concern is an employee sending a message from work which draws a complaint of it being racist, sexist or in some other way inappropriate. Another risk is a loose communication with an employee at a rival firm which could end up being seen by those at a high level and misinterpreted as being an official communication

from the firm as it has been sent from a work rather than a private email address. Some emails can hang around for years in archive files even if employees think they have deleted them from their computers, and can come back to cause trouble for the organisation later. Some organisations are employing filtering devices that trigger alarms if certain key words are used in emails and blocking access to certain sites. It is not uncommon for businesses to run random checks on what sites staff are accessing. This may be done in cases when firms consider employees are wasting too much time surfing the Web on non-work related business. As the Internet is still a relatively new medium as a business tool, guidelines are still being formed.

Some organisations have an acceptable Internet use policy containing guidelines that employees are being asked to sign. Acceptable uses are likely to include discussions with others who work in the same field, researching issues in the employee's field of work and activities that support the individual's line of work.

Unacceptable uses can be split into "users" and "IT specialists" within the business. Uses that aren't condoned are likely to include any private or personal business activities except for occasional email messages, distributing viruses, personal money making activities, anything which invades the privacy of others, playing computer games, online trading that isn't work related, any interference with computer systems such as harassing users, hacking into systems or damaging equipment.

Some suggestions for appropriate email and Internet use in organisations include respecting copyright, not passing on junk mail, sending email only to those people known personally or the employee has had contact with, taking care with tone and clearly identifying the sender in messages. Employees need to remember that the company they work for is automatically identified in any postings and sometimes it is assumed by readers that comments made represent company and not just individual views. It is a good idea not to forward any email messages without the permission of the person who originally posted it, to realise that email may not be confidential and not to access or transfer to the organisation's computer or network anything which could be considered offensive. All employees need to be on the alert for viruses and care should be taken not to import files from unknown or disreputable sources. Users need to take care not to share their passwords with anyone and they should be changed on a regular basis (Horrocks, 1999).

In November 1998, the Ministry of Commerce (renamed the Ministry of Economic Development in February 2000), published a policy framework paper, "Electronic Commerce: The "Freezer Ship of the 21<sup>st</sup> Century"" [[http://www.oecd.org/olis/1998doc.nsf/linkto/sg-ec\(98\)9-final](http://www.oecd.org/olis/1998doc.nsf/linkto/sg-ec(98)9-final)] that aimed to provide a comprehensive basis for all policy areas including trade, consumer affairs, evidence, tax, commerce, privacy and security. The Ministry co-ordinates the various government agencies working on separate aspects relevant to their scope in order to avoid gaps or overlaps.

The policy paper maintains "any government intervention should be, as far as possible, technology-neutral and purely facilitative in nature. A need for government intervention should not automatically arise simply because commerce is being undertaken via a new technology... In view of the rapid development of new technologies, the private sector will have an increasingly important role in developing market or technical solutions [<http://www.oecd.org/dsti/sti/it/index.htm>]."

Gartner Group predicted that by 2000, 80% of companies that didn't have policies and guidelines for their intranets would suffer some loss of important data and encounter one or more breaches of internal security.

### **2.10.8.2 Privacy**

Over the past few years, the advent of customer-information systems has allowed a company to capture data about customers in hopes of identifying unique buying attributes or trends (Deise, Nowikow, King & Wright, 2000). It is not till the application of the Web that businesses operating in a mass production world have been truly able to personalise relationships with customers. This ability has led to new competition from businesses to achieve lifetime value from customers and to put strategic plans in place to go after lifetime value from new customers and in new markets. With e-business, companies have the opportunity to replicate the personal customer relationship that existed prior to mass markets. Companies are able to use knowledge of the customer to personalise customer service while continuing to sell standard products.

While e-business enables companies to market to a mass audience on a niche basis, customers are increasingly being attracted by the ease of interface, fast fulfilment, reduced order processing costs and enhanced customer service available through the medium. These customers have the ability to change allegiances rapidly and at little or no cost and to quickly search for the greatest level of customer service possible. Customer relationship management approaches via the Internet use the technology to build stronger bonds with customers by anticipating their needs and treating each customer as unique. Business processes that do not support customer requirements and do not encourage a tight customer relationship need to be re-engineered or eliminated. Companies need to examine their business processes to prepare for providing information to actual and prospective customers. E-business profoundly accelerates the potential for customers to move and for companies to try to keep them. E-business decisions across the whole company need to be implemented with the customers' needs and perspectives in mind. Some companies are beginning to view customer information as a strategic asset, utilising data-warehousing and data-mining techniques to their advantage.

While the ability to gain and store vast amounts of information on customers exists, it is important that customers are advised that information is being collected and what it will be used for. They should have the right to that information not being on sold or used for purposes other than that for which it was collected.

### **2.10.8.3 Legal issues**

Legal issues were left to the Law Commission which released its report, "Electronic Commerce Part One- A Guide for the Legal and Business Community", in October 1998 [<http://www.oecd.org/dsti/sti/it/index.htm>]. The Law Commission in its report identified four guiding principles:

1. To ensure that business people can choose whether to do business through the use of paper documentation or by electronic means without any avoidable uncertainty arising out of the use of electronic means of communication.
2. To ensure the fundamental principles underlying the law of contract and tort remain untouched save to the extent their adaptation is required to meet the needs of electronic commerce.
3. To ensure that any laws which are enacted to adapt the law of contract or the law of torts to the use of electronic commerce are expressed in a technologically neutral manner so that changes to the law are not restricted to existing technology and can apply equally to technology yet to be invented.
4. To ensure compatibility between principles of domestic and private international law as applied in New Zealand and those applied by our major trading partners.

The principles state openly that the status quo will remain intact though the emphasis is on 'fundamental principles'. The report attempted to examine whether the existing commercial laws were sufficient to accommodate the needs of those engaged in electronic commerce. It pointed out that in any electronic transactions, the applicable rules could be those of New Zealand but not always. The report examines the extent to which the current laws of contract, torts and evidence as well as conflicts of law rules might fare in the new medium of electronic commerce. There was caution that "ultimately, because of its global nature, the Internet will need to be regulated through international rather than purely territorial means." A "problem" could end up in another nation's court and subject to their laws. The report addresses the type of matters that will need to be considered in advancing a global strategy to deal with these issues.

The Law Commission released a second report, "Electronic Commerce Part Two: A Basic Legal Approach" [<http://www.oecd.org/dsti/sti/index.htm>] extending the explanatory approach in the first report by making recommendations for the adoption of an "Electronic Commerce Transactions Act" for trade purposes. The contents relate to several rules to overcome what the Commission termed "legal barriers" to e-commerce; namely "six generic categories: writing, signatures, originals, service of documents, physical presence or attendance and negotiability" [<http://www.oecd.org/dsti/sti/index.htm>]. The commission concluded by pointing to the need for monitoring international developments in the areas of electronic signatures, conflict of laws and consumer transactions.

### **2.10.8.4 Security and risk issues**

With the expansion of e-business, security issues concerning electronic transactions have come to the forefront. While many companies have implemented higher levels of security within their business, concern is being placed on protecting the company, its

data and its key systems from outside attack. In addition, companies that promote e-business are facing strict security demands from customers. Companies that cannot demonstrate they have taken steps to promote secure financial transactions and secure transfer of information run the possibility of being left out.

There are three overlapping types of security issues or risk in electronic international trading. The first is bugs or misconfiguration problems that allow remote users to steal confidential documents not intended for their eyes, execute commands on the server host machine allowing them to modify the system, gain information about the Web server's host machine that will allow them to break into their system and finally, launch denial-of-service attacks, rendering the machine temporarily unusable. The second issue consists of browser-side risks including active content that crashes the browser, damages the user's system, breaches the user's privacy or merely creates an annoyance. Another browser-side risk is the misuse of personal information knowingly or unknowingly provided by the end-user. The third issue is the interception of network data sent from browser to server or vice versa via network eavesdropping. Eavesdroppers can operate from any point on the pathway between browser and server including; the network on the browser's side of the connection; the network on the server's side of the connection (including intranets); the end-user's Internet Service Provider (ISP); the server's ISP and either ISP's regional access provider.

A secure high-speed backbone facilitates real time inter- and intra-organisational communication. Integration mechanisms allow real-time communication between the applications of two organisations over a secure, high-speed backbone. These mechanisms can transfer information among the company's systems and logically interpret this information in the context of a single business process. This allows information that appears to come from inside, rather than outside the company acting as network master to be passed back and forth between linked companies. A customer on a company's Web site can check the status of an order and find the delivery date and time for products ordered. If the company has outsourced production and delivery of the products to one of its business partners, the customer's status check can retrieve delivery data and time from that supplier's information system and display it to the customer who may have no idea that this request for information was sent directly to the supplier company.

The most common Internet payment method for B2C e-commerce is credit cards (Turban, Lee, King & Chung, 2000). Although this is the case, some customers are concerned with security when sending their credit card information including name, card numbers and expiry date over the Internet. In addition to security, privacy is another issue for these buyers. In general, they do not wish others to know what they have bought, how much they paid, where they purchased from or how often they perform transactions. They are concerned that others do not change their order and they are connected to a reputable vendor.

Customers often fear providing credit card and bank account numbers plus too much personal information over the Net in case it ends up in the wrong hands. Businesses should be equally concerned about what information is gathered from their customers and whether it is made available to others, intentionally or unintentionally.

Electronic banking will become much more widespread. For big traders such as the US government, the essence of electronic banking is already here. Very soon the government will stop writing checks. The big change is already here except at the level of the ordinary consumer, and it is there that the banking revolution will take place. Online banking, online securities and multi-purpose smart cards that can also act as ID cards, debit cards and credit cards are already in use. Measures to keep information confidential will also improve (Reynolds, 1999).

Deise, Nowikow, King & Wright (2000) say the most popular payment processes in use today to protect sensitive information such as payment data use the SSL protocol developed by Netscape and now a network standard. SSL encrypts data sent between two parties by constricting a communication connection in which all data is encrypted before being transmitted over the Internet. Secure socket layer (SSL) protocol provides both security and privacy, allowing customers to encrypt their orders at their PC.

Visa and MasterCard have jointly developed a more secure protocol called Secure Electronic Transaction (SET) which includes a customer certificate requiring special software, or a digital wallet, at the client site. SET did not propagate as fast as most people expected because of its complexity, slow response time and the need to install the digital wallet in the customer's computer (Turban, Lee, King & Chung, 2000, p275). SET is a standard describing a complex authentication mechanism that makes it extremely difficult to commit fraud. SET includes a method for authenticating all parties with third party certification. SET offers authentication services currently lacking in SSL transactions. SSL has only a weak built-in feature for authenticating customers and merchants. Adopting SET however requires significant investment by all Internet players.

Most cyber banks and e-stores stayed with SSL protocol and according to a survey by Forrest Research, only 1 percent of electronic businesses had planned to migrate to SET by 1999.

Four essential security requirements for safe electronic payments are authentication, encryption, integrity and nonrepudiation. Authentication is a method to verify the buyer's identity before payment is authorised and encryption, whether public key or private key, is a process that makes messages indecipherable except by those who have an authorised decryption key. Integrity refers to ensuring that information will not be accidentally or maliciously altered or destroyed during transmission, and nonrepudiation the protection against customers' denial of orders placed and against merchants' denial of payments made (Turban, Lee, King & Chung, 2000, p278).

Parties to a transaction need to establish that they are who they claim to be, in terms of authorisation to approve a purchase. If a customer uses a credit card number, the merchant needs to establish that the customer is the authorised credit card user.

The main confidentiality concerns in e-business, as in other business transactions, focus on what the vendor or merchant does with customer information once it is provided and on how the system protects confidential information. Proper use of confidential information is more important and more difficult than simply encrypting information as it crosses networks. Each party needs to ensure that private information such as merchant prices and customer credit card numbers can be transferred and kept securely.

The key security schemes adopted for electronic payment systems are encryption, digital signature, message digest and the use of certificates and certifying authorities (Turban, Lee, King & Chung, 2000, p278). Secret key encryption, also known as symmetric encryption or private key encryption is based on the use of a single key with the most widely accepted algorithm for this being the Data Encryption Standard (Schneier, 1996). Public key encryption, also known as asymmetric encryption, uses two different keys: a public one and a private one. All authorised users know the public key but only the owner knows the private key. The private key is generated at the owner's computer and is not sent to anyone. To send a message safely using public key cryptography, the sender encrypts the message with the receiver's public key, which requires that the receiver's public key be delivered in advance. The message encrypted in this manner can only be decrypted with the receiver's private key.

Digital signatures use asymmetric cryptography. The private key is never revealed to anyone and the public key is automatically attached to a digitally signed email when it is sent which enables the recipient to check the integrity of the message. The details of the Certification Authority who issued the keys (digital certificate) are also attached. To make a digital signature, the base message needs to be normalised to a predetermined length of 160 bits by hashing the original message, which is called a message digest. A certificate authority is either a public or private body that seeks to fill the need for trusted third party services in electronic commerce such as VeriSign.

The need for a signature is often only required for evidential purposes to establish that the person who is supposed to have agreed has actually agreed to the terms set out in that contract. The result is that in many instances, the fact that an electronic document has not been physically signed will not prevent that contract from being enforceable.

Problems occur when legislation specifically prescribes the manner in which a document must be executed. An example is the Companies Act 1993, which provides that where a deed is to be entered into by a company, it must be signed by two or more directors of the company. If there is only one director, that director's signature must be witnessed. Clearly, in such a situation, a simple encryption agreement would not be sufficient. Encryption would provide evidence that the document originated from the company, but would not show that it had been signed in the required manner.

The New Zealand Law Commission's preliminary view (as stated in Part One of its Report on Electronic Commerce) is that the Interpretation Act should be changed to include a definition of the term "signature" to ensure that electronic signatures are acceptable.

In Part Two of its Report on Electronic Commerce, the Law Commission has gone further and has now recommended that the proposed new Electronic Transactions Act incorporate a provision to the effect that, where the law requires a person's signature, that requirement will be met in relation to an electronic message, if a reliable method is used to identify the person and to indicate his or her approval of the information contained in the message. Such a provision would effectively remove immediate barriers caused by statutory references to "signing" (Bell Gully, 1999).

Newman (2001) says around 50,000 small to medium New Zealand businesses have a Web presence but only about five percent are equipped to handle online transactions. He says during the 2000 year, scaled-down e-commerce applications finally became available to meet the needs of the vast majority of New Zealand businesses employing around five people. New Zealand banks are now providing multi-currency transaction capabilities and the legal framework to ensure the end of 2001 will considerably strengthen retailer and consumer protection.

IDC research business development and consulting manager Mike Cranna (cited in Newman, 2001) says while Internet security is always the single biggest concern for businesses, it has improved tremendously. Vendors know that and they're always trying to address the issues. Although Internet security as a whole still has a long way to go, Cranna sees B2B is much further ahead, depending on what solution a company is using. He says "it is hard to detect how secure a system is until it is hacked" however "once you have the basics of e-commerce (routers, cables and software) in place, if you manage your project carefully and ensure your suppliers are able to deliver what they say they can, there are significant savings to be made."

The use of firewalls protects internal networks from unauthorised outside access. Firewalls consist of dedicated hardware and software systems that provide security by screening network traffic and validating information flow between networks. They are used to enforce a Web site's security policy by mediating traffic between the site and the Internet or other external network.

Keeping unauthorised users off the network does not always result in a secure environment. Computer viruses can be transported over networks through files and other means and present a real threat. Many companies scan for viruses at the desktop and the firewall. Deise, Nowikow, King & Wright (2000) say many companies are implementing private networks, either through extranets or virtual private networks (VPNs), to increase security. Extranets are accessible to approved trading partners and customers but not the outside world. VPNs create private connections that guarantee some measure of security and bandwidth availability. Security technology is called on

to perform several functions in Internet transactions: authentication, confidentiality, secure delivery, privacy and nonrepudiation.

The parties in a transaction need to ensure that private information will remain private once it arrives at its destination. Credit card numbers and other customer information needs to be stored securely at the merchant's site, and the customer and the merchant need to agree on how merchant information, such as prices and availability, will be used by the customer.

Data integrity and consistency are important to e-business (Deise, Nowikow, King & Wright, 2000). In order for a company's internal operations to run smoothly, employees must be able to trust the accuracy of company data with any transfer of information being undertaken.

The parties in a transaction need to be certain neither can repudiate an agreement once it is agreed to. Security technology can prevent parties from claiming they were not the ones who signed the agreement.

Banks, credit card companies, computer and telecommunications companies have been forming alliances to create systems that will enable secure electronic transactions, including encrypted credit card systems, digital cash and smart card systems for electronic cash. With some of these services already in place and some yet to come, it is anticipated that there will be considerable blurring of the boundaries of many existing services, such as commercial online information, home shopping, electronic banking, electronic data interchange, virtual private data networks and many other areas.

### **2.10.9 Training**

Continuous education and the evaluation of knowledge make a big difference. Each company has to be aware of the implications of e-business for their own offerings. This awareness should exist not only on the CEO and boardroom level, but also on all hierarchy levels. This implies that a company needs to continuously train its employees in e-business related skills. An intranet provides the advantage of ease of access to relevant materials for a dispersed organisation available to all employees at the same time rather than needing to wait for training to be progressively rolled out across various regions or branches.

### **2.10.10 Summary**

This section of the report covered a number of key issues related to successful implementation of an Internet presence. The testing, launch and integration with other systems topics showed there was a distinct lack of documented material on organisations' experiences with this part of their Internet presence. A range of organisational issues, predominantly those of communication and marketing were covered. In both areas there are a number of useful findings based on the successful experiences of both small and larger enterprises, both within New Zealand and internationally.

## **2.11 Measurement**

### **2.11.1 Introduction**

The eighth section of the literature review examines the importance of measurement in the audit and assessment process to determine system performance technically, operationally and financially.

### **2.11.2 Measurement**

Assessment is an important part of the project with projects needing to be evaluated during and after implementation. Some aspects that warrant consideration are: finding out whether the electronic commerce project delivers what it was supposed to deliver, determining if the project is still viable in an ever-changing environment, reassessing the initial strategy in order to learn from mistakes and improve future planning and identifying failing projects as soon as possible and determining the reasons for failures to avoid the same problems on subsequent systems (Turban, Lee, King & Chung, 2000).

The monitoring of electronic commerce project and performance results allows corrective action, problem resolution and expansion plans to take place if required. Assessing electronic commerce plans is not simple as they often grow beyond the original plans and bring about many changes in systems and processes. While the expansion of Web projects on a large scale can encompass many control and administrative issues, it is necessary to examine the entire project from a strategic perspective and review whether the project has achieved its intended goal and what should happen next.

Some organisations do undertake research on their own and other organisations' Web sites. This may involve keeping a watching brief on what competitors are doing, or usability studies, to find out more specifically how well the site's information and structures align with the users' needs and interests. Some of this information may come directly from site visitors who may be required to register in order to get access to a site or download information, or they may be encouraged to provide information in return for prizes or free gifts. Other ways organisations measure the use of their Web site is by gathering navigational information. Visitors' paths can be tracked through the site, recording the number of clicks made by the visitor, the time spent at different parts of the site as well as the level of 'drill down' or movement into the site from the home or first page of the site.

In addition to determining Web site usability and measurability, a number of other studies have been done to establish Web site classifications. Fortune's editors (*Fortune*, 1998) mix function and style in establishing the following site categories. Functional categories include promotion and brand identity (attracting customers), transactional (selling), informational (e.g., e-journal site), and the broad-based, multi-functional sites. They add a stylistic category 'plain vanilla', to describe sites that use a concise writing style. Haas & Grams (2000), based on a content analysis of 75 Web pages, classify page types as organisational (e.g., index), documentation (e.g., FAQ),

text (e.g., article), home page, multimedia, tool (e.g., search) and database entry. Alexander & Tate (1999) establish six categories for Web pages. The categories—advocacy, business, informational, news, personal and entertainment—are based on the following criteria: authority, accuracy, objectivity, currency, and coverage, intended audience, and the kinds of interaction and transaction that the site affords between the organisation and the site users (pp. 55-57).

Counting the number of hits a Web site receives ignores important information such as how long visitors stay on the site, the pages they find useful, their purpose in visiting the site, whether their needs have been met and the amount of engagement and interactivity they have with the business. Information from users can be used to improve a site's communicative effectiveness on dimensions such as content, structure and style.

Mukherjee (2000) says closed loop measurement is essential. He says that business intelligence input such as implicit data (site interaction), explicit data (surveys, sweepstakes and purchase history) and legacy data needs to lead into business analysis- market/customer segmentation, conversion rates/yield, cross channel analysis, customer lifetime value analysis, customer satisfaction analysis and return on investment analysis then result in targeted action such as targeted marketing offer or advertisement delivery, up-sell or cross-sell activities, product recommendation opportunities, sweepstakes and market research.

### **2.11.3 Consideration of Web site on business effectiveness**

Consideration needs to be given to how the effectiveness of an organisation's Web site will be measured in line with their objectives. Thought also needs to be given to how the business strategy will change in line with the results achieved.

IT investments tend to be seen as one-offs as they are sold as “one-offs” and since they are not closely integrated with the strategy formulation process, justifying them is usually a complex exercise. IT projects are often managed separately from the business with improved business results often being seen as disconnected from the IT efforts. Another point is that IT metrics measure IT performance rather than business results. As a result, IT is often seen as a way to reduce costs rather than a way to enhance competitiveness.

If however IT metrics measure IT impacts on business, this will ensure that the measurement system goes all the way up the business ladder. This will mean that IT projects are managed as part of the larger business initiative and the fact that measurements are interrelated will force companies to measure IT projects and the business impacts in a holistic way. As a result IT investments will be seen as ongoing programmes. Once IT projects are measured upon solid business principles of performance and managed as such, IT projects will cease to withstand the yearly “approval cycle” and instead undergo a periodic review of their support and drive of the business (Mukherjee, 2000).

#### **2.11.4 Performance measurement**

Accurate measurements of traffic on an organisation's Web site are often hard to determine. NZ sites do not seem to have kept up as well as they should with measuring and standardising traffic measurement techniques. Richard Ram suggests that in the long run these sorts of statistics will become even more important than TV program ratings. Web traffic measurement is not just of concern for media buyers or those wanting to sell their online ad inventory. It's becoming a crucial tool for Webmasters, publishers and those wanting to deliver goods and services online.

Initially, sites tended to talk of how many "hits" they got. The hit counted every request for data from a server, including everything from HTML files to graphics files as well as any calls to CGI scripts etc. This sort of information tended to have limited meaning for anyone other than Webmasters.

Sites then talked about how many "page views" they got but this didn't provide much information about those viewing the pages. The "click-through", although more often used in relation to banner ads, can also be used in relation to any clicks on a page. A click-through is the percentage of people clicking on a link or a banner ad to those who saw the link or the ad but did not click through. "Unique visitors" which aims to report how many people have visited the site is an interesting statistic but prone to inaccuracies. Those behind a firewall may show up as one unique visitor but there may in fact be a hundred people from behind a company firewall.

A recent breed of tracking software is helpful to both online marketers and Web site builders. These statistics include categories such as 'length of stay', 'registered users', 'repeat visits' and 'conversion to sales'. It is useful for those selling banner ads to be able to tell media buyers as much as possible about the profile of site visitors that they will be able to target with their banner campaigns, what click through rate they could expect and what sort of conversion rate to sales they may want to budget for. A low click through or sales conversion rate on a site may indicate that any banner advertising would be better promoted as a branding exercise rather than as a sales generation tool.

Those people designing sites and making decisions about navigation, content and services etc also need to be aware of what the statistics reveal. Perhaps if the links aren't being clicked on they aren't named correctly. If the length of stay on a particular page is shorter than the time taken to read it then the page may be too long. If conversions to sales or any particular action is low, the process required to complete the task may be overly complex. Providing information on useful enticements (such as discounts or free gifts) early on in the purchase process can attract and hold the buyer's interest.

The collection of data, site visitor details and analysis of Web traffic can assist a business in providing a better visitor experience at a site. The more information gained from a person through the use of cookies to track users the better to ensure delivery of content, products and services but it does mean companies need to earn the trust of site

visitors so their profile can be obtained. Building trust in the online environment is a big challenge (Ram, 1999).

Bell (1999) says the statistical analysis of customer buying patterns is a fundamental shift in the way we use data, because it focusses on what customers are doing now, as opposed to historical data about them. Research shows that 30 percent of product cost is tied up in supply chain overheads, so 1:1 marketing not only offers hope of better customer service in many industries, it also promises to cut costs by addressing demand more directly. "It allows businesses to become more customer-focussed on an individual basis", says Aaron Kumove, KPMG New Zealand's electronic commerce national service line leader, "uniquely tailoring offerings to individual customers by understanding their preferences, what drives and what doesn't drive them. By looking at what people buy you can build up a database of spending habits and preferences." Kumove cautions that moves towards 1:1 marketing need to be matched by 1:1 manufacturing. The "one size fits all" approach is no longer appropriate as the competitive landscape has begun to demand individualised product. The best way to attract and keep customers on the Net is ironically the one that worked in the days of the hand-tailored suit and delivered dairy goods: personalised service.

E-commerce applications can already be made to adjust their pitch to take into account the customer's stage in the buying process, or 'customer lifecycle'. A well-designed site should move the customer smoothly and imperceptibly through purchase to post-sales service. This increases the likelihood of turning a first time visitor into a loyal, repeat customer who's happy to furnish his or her buying profile in exchange for better service on a future shopping excursion.

Some reasons that Web sites fail are because they don't respond to customer queries, they fail to deliver a product within an agreed time or the service is bad. Often Web sites do not give customers anything that they cannot get by walking into a local store or reading a magazine. Adequate time also needs to be given to advertising and profiling with the company's URL in radio, television, newspaper and other paper-based advertising sources (Bell, 1999).

A study by the New York based research firm Jupiter (cited by Ohlsson, 1999a) surveyed 60 top executives. Most said they rated the success of their Web sites by two factors. Some 62% said that the number of online customers or users was an important measure of online success, while 53% of the total viewed revenue as important. Executives need to integrate these factors into their traditional businesses to see the true value of their Web initiative, Jupiter added.

As for the long term, 85% of these executives said profitability would become one of the top factors for success. As their online bottom-line profit figures become more important, fewer of these 60 executives would look at revenue or the number of online visitors as success factors, the study said (Ohlson, 1999a). To achieve online success, executives have to figure out what online initiative is best for them, rather than

counting on isolated revenue in the short term and profitability in the long term, Jupiter said (Ohlson, 1999a).

Kumove from KPMG suggests that a strategic approach is necessary when looking closely at e-commerce. "If you try to produce five-year revenue and profit targets, they're going to be wrong. No one can predict this. This is an industry that's in its infancy. You can't realistically produce projections of sales and profits. I think the approach one has to take is to look at where an industry's going and envision five, ten, fifteen years out what it will look like and what needs to be done to remain competitive. If e-commerce fits into that vision you have to do it. If you don't think it fits into that vision you should ignore it. My view is that, for many industries, it will fit into that vision." E-commerce is, Kumove stresses, in an early phase. "Trying to focus on return on investment and revenue targets is almost impossible. That doesn't mean that you can't be profitable, it just means that it's hard to quantify. To base a business plan on numbers alone at this time is folly" (Bell, 1999).

Some suggestions from Kumove for businesses looking at e-commerce are as follows: "Define technological capabilities around business goals. Take a long-term view and examine how e-commerce fits into it. Don't try to justify e-commerce on the basis of short-term sales and profit projections. If the business is export-based, explain how e-commerce can be used to target foreign markets without an overseas branch infrastructure. Focus on the advantage of New Zealand's time zone and exchange rates for export-based business. Approach the project as a series of small, iterative risks and successes, rather than coming out with a 'big bang' solution from day one. Both business and IT strategies need to be flexible to respond to market demand. Don't tie yourself down to proprietary paths if you don't have to. Remind your CEO that in many industries routine interaction will soon be electronic. Focus on service or product delivery as e-commerce is only an enabler" (Bell, 1999).

Not all potential consequences of online success are unknown. Experts say that some, such as conflict between a company's real world and online ventures, are predictable and preventable with some clear policy setting. For example, many retailers, including Nordstrom Inc., sell their products both online and in stores. But if online shoppers can't find what they want online, they're referred to an in-store salesperson. The question becomes where the sale should be credited- to the store or to the online venture? To solve that problem, more retailers with dual channels will adopt activity-based costing to identify how much they spend on marketing and other functions and where costs should be applied, said Tim Harmon, an analyst at Meta Group (cited in King, 1999a).

### **2.11.5 Summary**

Each company is likely to measure success or failure by different criteria. Some companies may find their goals were unrealistic, their Web server was inadequate to handle demand, expected cost savings were not realised or for example, customer service templates were not simple enough so employees from across the company can contribute easily. Both anecdotal and research based evidence reveals few

organisations measure the delivery of their Internet presence against their performance objectives and rely instead on site statistics.

## **2.12 Maintenance**

### **2.12.1 Introduction**

The ninth section of the literature focusses on the maintenance of an organisation's Internet operations, the use of resources and the maintenance plan.

### **2.12.2 Importance of maintenance**

Saga & Zmud (1994) say that while it is well recognised that the post-implementation behaviours eg the acceptance, routinization and infusion of information technology are critically important to attaining IT implementation success, the dynamics which exist between these behaviours are not, as yet, fully understood. Implementation is most commonly depicted as the last stage of the three-stage sequence: initiation, adoption and implementation (Thompson, 1969; Pierce & Delbecq, 1997). Since then there has been some emphasis in the IT implementation literature on organisational behaviours occurring beyond this latter stage, recognising both the importance of these behaviours to IT success and that these behaviours are comprised of a set of activities guiding the development, enhancement and organisational facilitation of IT use.

Keeping a Web site up to date and checking on usage are both important site maintenance elements. Modifying site structure and layout, revising content and checking links both to and from the site work are key tasks for the site's Webmaster and content authors.

Bell (1999) says that site maintenance should generally be outsourced and managed by service-level agreements according to many e-commerce experts unless the organisation wants to build site development and management skills in-house. E-commerce sites require a fast development and iteration cycle with a typical Web cycle refresh or update every ten weeks. It is no good planning a fully featured site if it takes months to build as, by the time it has gone live, the market will have moved on. It's considered wiser to choose core functionality and revise on a three-monthly basis. That way, as the market changes, the site can change to suit. Redesigning a site may also be to take advantage of new technologies such as Macromedia's "Flash", Java, cookies, applets etc.

### **2.12.3 Summary**

Most businesses want to win by making money and outperforming their competitors. New technologies are adopted to fend off new competitors, to maintain a competitive advantage, to take the first mover advantage in their industry or locality or to make money in new markets. Performance or success in certain key areas is vital to gain and maintain an advantage over competitors. There is therefore a need to determine success factors for organisations seeking a strategic business edge from the Internet.

There is a disappointing lack of research-based evidence either in the national or international literature on several of the processes involved in planning, designing, implementing, measuring and maintaining organisations' Internet presence. The anecdotally reported research often consists of the comments from one employee of a particular organisation and is that person's view, often not based on tangible measures. It would appear that these projects are often ad hoc, partially planned and are seen as an add-on rather than an integral part of a company's functioning.

## **2.13 Conclusion**

There are many compelling reasons to research the use of Internet by organisations. One is that while we know a range of metrics such as the number of unique hosts connected to the Internet, the sites users visit, the time they spend online, the types of computers they use to access the Internet and so forth, very little empirical data is available on how using the Internet for business affects the interactions between customers, clients, suppliers and employees. These interactions can take a variety of forms and may include marketing, communications, public relations, supply chain relationships, order placement and fulfilment.

Research about the Internet and business use in New Zealand has tended to be more based on the metrics gathered through the use of questionnaires rather than longitudinal business information gathered through a combination of interview and case study methodologies.

Worldwide business-to-business e-commerce reached US \$145 billion in 1999 and was been projected to reach US \$7.29 trillion by 2004, with a 155% growth in the Asia-Pacific region according to Gartner Group. The Boston Consulting Group estimated business-to-business e-commerce in Australasia would increase from A\$17 billion in 2000 to A\$235 billion in 2005; however New Zealand businesses were predicted to contribute only A\$21 billion of this volume (Wetenhall, Sutherland & Boven, 2000). Such is the size of the predicted growth rates that attention needs to be given to the major changes in the way this business is being performed in the light of changes in new organisational forms such as electronic markets and virtual businesses. Research is needed on describing and explaining these impacts and the resulting changes in organisational structure, behaviour patterns, managerial style and so forth.

Several major descriptive studies have been conducted on the nature of e-business and its impacts. PriceWaterhouseCoopers (2000) polled Conference Board executives in 78 leading multinational companies from many industries around the world. Its recommendations for successful e-business initiatives stressed the importance of planning and flexibility, the need for integrated solutions and for taking full advantage of business partner and alliance relationships. PWC noted "The e-business growth of the past year has raised the stakes so dramatically that it is more important now than ever that companies act proactively to address this exciting opportunity".

The Asia Pacific Economic Cooperation (APEC) Telecommunications Working Group study of e-commerce focussed on small and medium enterprises (SMEs) in all 21 APEC member countries (TEL05/97T, 1999). Noting the importance of SMEs for economic growth and productivity in APEC economies, this study emphasised the role and opportunities for smaller firms:

*SMEs that can demonstrate their capabilities to use electronic commerce will have a competitive advantage in the B2B marketplace. For example, most of the large firms currently developing and implementing B2B e-commerce strategies typically engage SMEs in their supply chains. For these firms, the rate at which SMEs adopt e-commerce and enhance their capabilities could affect the scope and timing of their B2B e-commerce implementation. Alternatively, SMEs that do not keep pace with electronic commerce may be marginalised suppliers.*

In its report on emerging e-business developments in Australia and New Zealand, the Boston Consulting Group observed that companies have rushed to set up e-marketplaces (Wetenhall, Sutherland & Boven, 2000). However it cautioned that many of the 283 marketplaces would fail, as transaction fees fall and global players reach 'down under'. The BCG found a dominant 'defensive' approach to e-business initiatives in Australasia. BCG advised, "The real value of e-commerce will derive fees from restructuring distribution and supply chains, and embracing deep collaboration with trading partners."

Contrary to the perception of New Zealanders as innovators with a 'can do' attitude, the Deloitte e-business survey (2000) of 279 medium-sized firms concluded, "New Zealand organisations are laggards in adopting and embracing e-business." However, from its commissioned survey on business use of the Internet, the Ministry of Economic Development (MED, 2000) reported that "New Zealand small to medium businesses are ahead of their Australian counterparts in exploiting the potential of the Internet". The survey found a high level of awareness and use of activities such as email from this sample of 506 companies, but little integration with core business services. MED concluded, "Although New Zealand businesses are well prepared, they have yet to come to grips with the implications of e-commerce".

The Deloitte study was repeated a year later in 2001 and the results were very similar, indicating little change in adoption levels of e-business technology and the proposed spending on e-business initiatives. When asked about barriers to implementing e-business, 56.2% identified cost, 43.4% lack of knowledge, 26.3% lack of organisational strategy, 25.8% said it was of limited benefit and 20% mentioned security issues (although almost double this have said they would require assistance with security).

The significance of e-business activities was recognised by the New Zealand government in its e-commerce strategy for the country, released in November 2000 at the e-commerce summit. The need for further research in the broad area of socio-economic impacts of information and communication technologies (ICTs) was also signalled by the Foundation for Research Science and Technology (FoRST). Detailed

information on the status of e-business in New Zealand was needed for policy development and decision-making at the national, regional and industry levels. More data was also needed for international benchmarking purposes of the economy and to provide guidelines for managers (Clark, Bowden, Corner, Gibb, Kearins & Pavlovich, 2001).

### 3 Problem statement

This chapter outlines the problem statement of the thesis and looks at why the research question is an important one to solve.

This research investigates the use of the Internet by organisations and aims to answer the research question:

*What are the success factors for the use of the Internet by organisations?*

The literature review and more particularly the New Zealand research cited in chapter two demonstrates a lack of analysis of key factors determining an organisation's success on the Internet. The literature provides some interesting material on related factors but often they are not in a New Zealand context tending instead to be located in American businesses which have quite different implications in terms of organisational size. Some studies are very general and are "snapshots" rather than longitudinal studies into organisational processes and interactions with employees, customers and suppliers.

Issues to be resolved through the three research phases include gaining a greater understanding of the way in which organisations plan, design, implement, operate, measure and maintain their Internet presence. Priority areas for investigation include an assessment of which factors within this model are most important in determining an organisation's success.

## **4 Method**

### **4.1 Introduction**

This research seeks to understand the ways organisations are using the Internet for their various business functions and assess the best practice examples to learn from their successes. The research process examines a number of variables such as organisation type, organisation size, the amount of time the organisation has been online and the ways they are using the Internet as an organisation.

The research objectives are:

- to identify the nature and extent of Internet based business activities by organisations in New Zealand
- to examine the motives and impacts of these initiatives
- to determine factors that contribute to the success of these endeavours

It is noted that by the very nature of the investigation ie questionnaires and case studies, that it is difficult to generalise to all organisations or possibly even a large proportion of New Zealand's businesses.

### **4.2 Questionnaires**

#### **4.2.1 Postal questionnaire**

A postal questionnaire was designed to collect empirical evidence of the use of the Internet by organisations. The aim was to survey an equal number of organisations in the full range of industry sectors to examine the differences between those organisations that were online and those that weren't.

Postal mail surveys tend to be an expensive survey option as they involve printing and mailing costs. If response rates are to be maximised, reply-paid envelopes should be included also, which is an additional cost. Further costs are printing and mailing of reminders in an effort to increase the response rate. Time also needs to be allowed for the survey to be received and returned before the reminders are sent so both the administrative tasks and the timeframe associated with postal mail surveys are increased. However, respondents may appreciate the anonymity that can be achieved via postal mail. Another consideration is the time needed to open the envelopes containing the completed questionnaires, code them and enter the replies into a database.

#### **4.2.2 Email questionnaire**

An email survey was chosen for the second stage of the research project because of the following reasons:

- a) This research project is about organisations who are on the Internet, so it was felt using an email survey would be entirely appropriate,

- b) Since we are in the era of e-business, it was felt that an online survey distributed via email would be well received by respondents,
- c) Printing and mailing costs are eliminated and so it is cheaper and
- d) The survey timeframe can be reduced.

However, email questionnaires do have their drawbacks:

- a) There are formatting issues with the appearance of the survey as it is impossible to predict which email package the survey recipients are using. Email surveys do not offer the same layout benefits compared to Web surveys.
- b) Respondents must have email access to answer the survey otherwise they will be unable to complete it. While this is not thought to be a significant issue, it does mean that the questionnaire needs to be answered on screen (or else printed out, filled in and faxed back).

Yun (2000) points out that since email surveys are electronic in nature, they are cheaper, faster in transmission and eliminate the tedious administrative process of mailing. The speed of response is believed to be higher with email surveys when compared to postal mails (Sheehan & McMillan, 1999). Tse (1998) believes an emailed survey implies urgency and is less likely to be treated as junk mail than a survey received via postal mail.

### **4.2.3 Case studies**

The issues to be resolved in this part of the research include gaining a greater and more in-depth understanding of the way in which organisations plan, design, implement, operate, measure and maintain their Internet businesses. It was decided the best way to find this information was by using case studies.

Case studies have been used to explore various aspects and interview transcripts were analysed for comments that revealed the importance participants placed on the various attributes. The research has examined the relationships between individuals and their organisations' use of the Internet, whether for an integrated presence, for a transactional e-commerce Web site or for a brochure-based one. Explanations for the decisions made and techniques used were sought. An understanding of the necessary conditions for the construction and maintenance of a successful Internet presence was gained.

In examining the research question this study should help with an understanding of how an organisation decides on its criteria for success and ranks itself alongside other organisations. Various organisations have different motivations and may measure success differently over the time they are online.

#### **4.2.3.1 Case study research**

According to Frey, Botan, Friedman & Kreps (1991), case studies examine a single salient social situation to interpret the role played by communication. A case can be a person, an event, a programme, an organisation, a time period, a critical incident or a community. Regardless of the unit of analysis, a qualitative case study seeks to

describe that unit in depth and detail, in context and holistically (Paton, 1990). Frey et al. outline three major elements of a case study:

- the researcher first describes the key events that precipitated the situation (the case)
- the case is then analysed in the light of current theory and research and
- appropriate strategies that were used or could have been used to solve problems experienced in the particular situation studied are identified (p209).

Case study research aims to study social action as it takes place in interaction or communication and as interpreted by the respondents (Sarantakos, 1993). Case study has to do with a choice of object to be studied rather than methodology (Stake, in Denzin & Lincoln, 1994, p236). The approach takes three chief forms: the intrinsic case study, undertaken because one wants better understanding of a particular case; the instrumental case study, where a particular case is examined to illuminate an issue or refinement of theory and collective case study extended to several cases (Stake, p237).

As Stake points out, many social scientists have written about case study as if intrinsic study of a particular case is not as important as studies to obtain generalisations pertaining to a population of cases. They have emphasised case study research as a typification of other cases, as leading to studies producing generalisations or as an occasional early step in theory building (p238). For example, Ragin (1994) comments that in-depth knowledge is sometimes achieved through the study of a single case but often is best achieved by studying several instances of the same thing because different aspects may be more visible in different cases.

The central part of the present case study research relies on:

- interviews with top level management
- interviews with personnel in Marketing, IT, Communication and Human Resource departments
- general or factory floor employees
- customers and clients (where appropriate)
- interested and involved others such as Web site designers.

It also draws on the literature pertaining to that particular industry sector, an analysis of the process the individual organisations went through, a description of the organisations' home pages and further directions and developments.

It is intended to use semi-structured interviews. Sarantakos (1993) notes that one form of unstructured interviewing is the intensive, or depth interview. In contrast with structured interviews, unstructured interviews do not follow strict procedures. The wording and order of questions is not restricted.

“The interviewer acts in this context freely, on the basis of certain research points, formulating questions as required and employing neutral probing” (p178).

An unstructured interview may appear to be a normal conversation but it is always controlled in line with the interviewer's research interests so that the informant is always providing experiences and attitudes that are relevant to the problem (Burgess (1982) cited in Minichiello, Aroni, Timewell & Alexander (1990), p93). Minichiello et al. point out that in-depth interviewing is not only a conversation with a specific purpose; it is also the means by which a researcher can tap into individuals' interpretations of social reality.

With these understandings of the case study, the type of interviews to be conducted and critical incidents to be reported, a list of initial questions was constructed. The majority of these questions were to explore in greater depth issues that were asked in the questionnaires sent by paper and email. Comments received either on the questionnaires or in accompanying notes also revealed issues and questions that organisations were having. Some were along the lines of "When you find the answer to X, we'd love to know!" and "Don't know how others are dealing with this- we find security a big worry".

Some of the questions had come from the popular and academic literature while other questions were commonly being asked by those organisations interested in gaining a Web presence of others who had already gone through the process. An example of this was "To what extent did you use outside expertise?" as many organisations were keen to find out whether it was something they could do in-house or would need to budget for the use of outside expertise. The researcher was interested in their reflections and hindsight considerations both during the process and when looking back at initial phases.

Once selected, the questions were grouped into themes and then a logical order of themes devised. These formed the questionnaire schedule. While the questions were not piloted, they were refined as used with the nine case studies. Sometimes these were refinements and clarifications of wording such as "get online"; a term some organisations used to refer to the time they first gained email access as an organisation rather than launching their first version of the Web site. Some of those interviewed were more able to answer some questions than others especially in larger organisations as some staff had managerial and others had technical roles. As a result of this some interviewees did not answer all the questions.

Although the list of questions had been compiled in what seemed a logical order by the researcher, often the reply to a question would encompass a variety of themes. Follow-up questions were then asked which often meant the question order changed from what was originally planned. This new order made more sense to the respondents however, rather than the one originally intended by the interviewer. Question prompts were written into the interview schedule for three of the questions. Other prompts were provided at the time if interviewees hesitated in their response to questions. Some respondents were asked questions that were particularly pertinent to their industry or set of circumstances. An example was one organisation that had foreign ownership. Some questions, such as the one about having an intranet, didn't apply to

the small businesses so they weren't asked follow-up questions regarding this. All interviewees gave permission for the interviews to be tape recorded and these were replayed several times when transcribed and checked for accuracy. Interviewees were given the opportunity to receive and read their interview transcript or obtain a copy of the tape. Most interviewees didn't request this.

Interviews were conducted with management, marketing, IT, human resource and communication staff and other members of the Web site design team as appropriate. In some organisations with a large number of employees there were a range of people to interview and in others, such as the small businesses, there were only a couple as staff had multiple roles. In each case, the organisation concerned referred the researcher to the most appropriate people to interview. As previously mentioned, some staff had a more complete understanding of the process their organisation had gone through than others and at times the researcher was told "you'll need to ask X that- it was a management decision". One of the interesting aspects of the case study research was the variety of situations and organisation types. Of necessity this meant that there occasionally were limited perspectives and as with any qualitative research there is the possibility of bias due to small sample size and researcher's frame of reference.

A list of success factors was developed and transcribed interview comments made by members of each organisation were coded on a five point Likert scale (1= very good to 5= very poor) for each success factor. The demarcations for each factor were refined during the process and are based on both the practical observations and comments from the interview transcripts. All organisations were reassessed for their score on each success factor prior to statistical analysis and interpretation. Some factors did not apply to all organisations (such as #11 Intranet in place).

#### **4.2.3.2 Questions for case study organisations**

Why did your organisation decide to get online?

- Were there others in your industry sector already online that you were aware of? (colleagues, competitors, contemporaries)
- When did your organisation decided to get online?
- What was the timeframe?
- How far do you consider that you are through this process?
- Please describe the process you went through in getting your organisation online.
- Who was involved?
- To what extent did you use outside expertise?
- What aspects are you pleased with and proud of? (pros)
- What aspects are you unhappy or dissatisfied with? (cons)
- What remaining issues/ problems are there to deal with? (financial, communication, marketing, human resource, training etc)
- What lessons have you learnt during the process?
- What would you do differently if you were to do it again?
- How has getting online affected the internal and external communications of your organisation? (email, home page, newsletters, electronic commerce, marketing)

- What training was initially thought necessary and provided? Did this prove suitable for all staff? Was further training provided? Did your customers need training and guidance?
- What role has your ISP played? What observations would you make about service commitment and delivery?
- What reactions have you had from customers and suppliers about getting online?
- What policies do you have about email and Internet use in your organisation?
- What have you done/ what do you plan to do regarding updating your site?
- Does your organisation have an intranet? If so, please can you tell me about it?

## **5 Experiment**

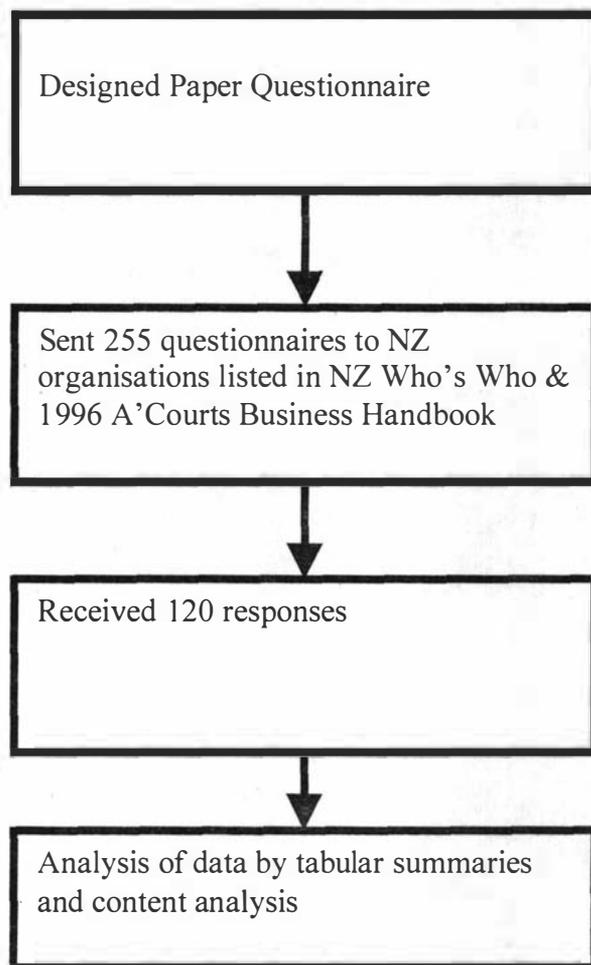
### **5.1 Introduction**

This chapter describes the logistics of the experimentation and the high level overview of the work performed.

### **5.2 Paper Questionnaire**

Funding was received from the Massey University Research Fund and approval gained from the ethics committee. The questionnaire was pilot tested in November 1996 and a number of academics provided feedback to clarify and improve the questions. The questionnaires were sent with a covering note and a form to be sent back if respondents wished to receive a summary of the results. Two freepost addressed envelopes were included for the completed questionnaire and the feedback form to be returned separately to the researcher. The questionnaire was sent out in December 1996.

255 questionnaires were sent to organisations listed in the NZ Who's Who and 1996 A'Courts Business Handbook. The full range of 17 industry sectors outlined in the 1993 Australian and New Zealand Standard Industry Classification manual were sampled with 15 addresses from each of the sectors selected to receive the questionnaire. 120 questionnaires were returned, giving a response rate of 47.05%

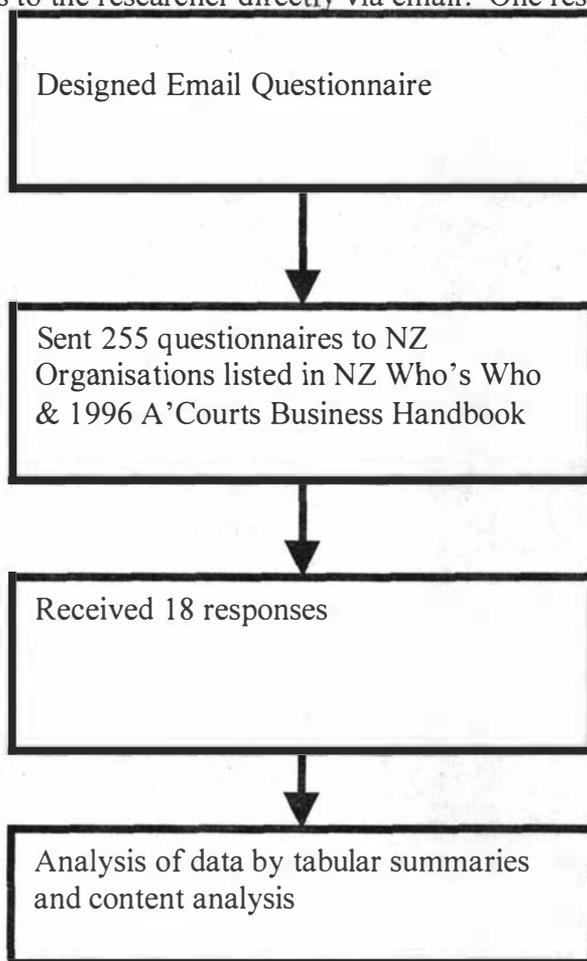


### **5.3 Email Questionnaire**

255 questionnaires were sent to organisations listed in the NZ Who's Who and the 1996 A'Courts Business Handbook. The full range of 17 industry sectors outlined in the 1993 Australian and New Zealand Standard Industry Classification manual were sampled with 15 addresses from each of the sectors selected to receive the questionnaire, as in the postal or paper questionnaire survey. The Universal Business Directory CD-ROM was used to check industry classifications and the Web site listing New Zealand Internet connected organisations at [http://tepuna.natlib.govt.nz/web\\_directory](http://tepuna.natlib.govt.nz/web_directory) was used to gain email addresses. Using both the CD-ROM and the named Web site to locate the quota of addresses was a rather laborious process. Fifteen organisations that were already online for each sector needed to be located, their email addresses found and checked against those organisations within that sector that had previously been sent a questionnaire in the paper-based survey to ensure no duplication occurred. While this was not problematic in some sectors such as M: Government Departments, Administration and Defence, N: Education and C: Manufacturing, it was more difficult in B: Mining and D: Electricity, Gas and Water Supply.

According to Gi Woong Yin (2000, p6) "...abusing the mail survey may paradoxically damage the email survey environment." A great deal of effort was taken to ensure the emails were worded correctly in terms of tone and clear instructions and proper steps taken to preserve the anonymity and confidentiality of the survey. Despite this effort, some of the survey respondents were not happy to receive the survey and expressed

their views to the researcher directly via email. One respondent considered the email



to be spam and contacted the researcher's PhD supervisors.

Eighteen email questionnaires were returned giving a response rate of 7.05% which was rather surprising and disappointingly low considering very few bounced back.

#### **5.4 Questionnaire to respondents on Small and Medium Enterprise Centres databases**

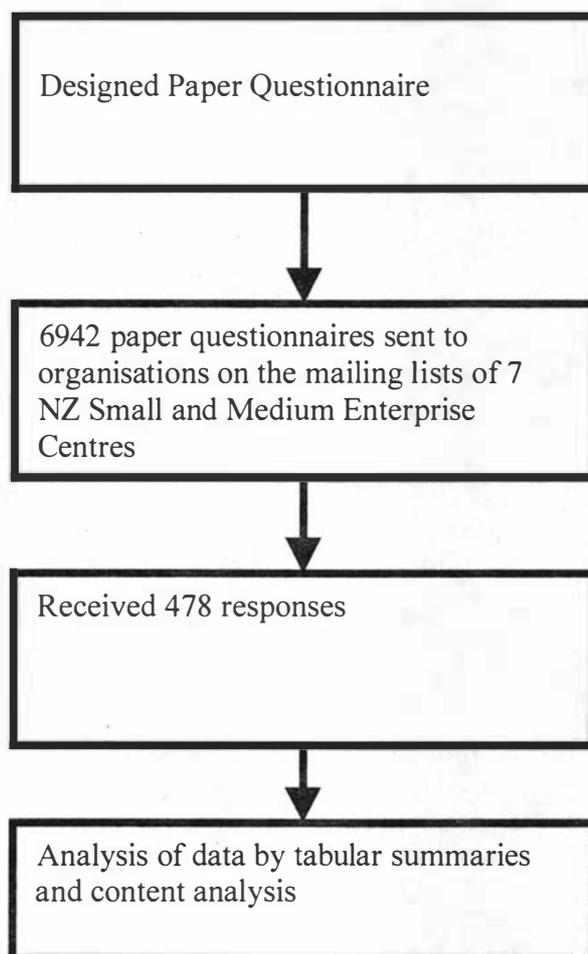
6942 postal questionnaires were sent to organisations that were on the mailing lists of seven Small and Medium Enterprise Centres (SMECs) in late 1998. The number of small businesses on the various mailing lists ranged from 40 to 4000. Those SMECs that gave permission to include the questionnaires with their next mailing were self-selected. 478 questionnaires were returned, giving a response rate of 14.5%. As the researcher relied on SMECs to send the questionnaire out with their mailings and didn't have access to the mailing lists, no follow-up reminders or questionnaires were sent.

A request was made to include a reminder of the survey in their next newsletter however sometimes these were not sent out on a regular basis and as the questionnaire

was sent out with the previous newsletter or mailout, there may have been some time elapsed between the time the questionnaire was originally sent and the reminder appeared. A considerable amount of goodwill was given to the researcher by members of the various regions in terms of allowing the questionnaire to be sent with their mailouts, thereby saving outgoing postage costs and envelopes.

Although the mailing lists of SMECs predominantly contain the names of SMEs within the various SMEC locations, the lists also contain others who do not have small businesses, are involved in education, training or local government, for example. Like other mailing lists, some entries are no longer current, are incorrect and include people who are no longer interested in the SMECs' activities. This means that while the potential number of respondents (6942) on the seven mailing lists sounded impressive, this was not to be considered a realistic potential sample size for the survey.

While one of the benefits of the SMECs sending out the questionnaires was access to a substantial number of New Zealand small businesses, there were a number of SMECs who didn't send the questionnaire to their members. The SMECs' CEO sought co-operation with the various centres on the basis of being able to contact the regional SMEC co-ordinator at the time to seek permission for that region, being able to mail out the questionnaire in the near future and having a reasonable sized database.



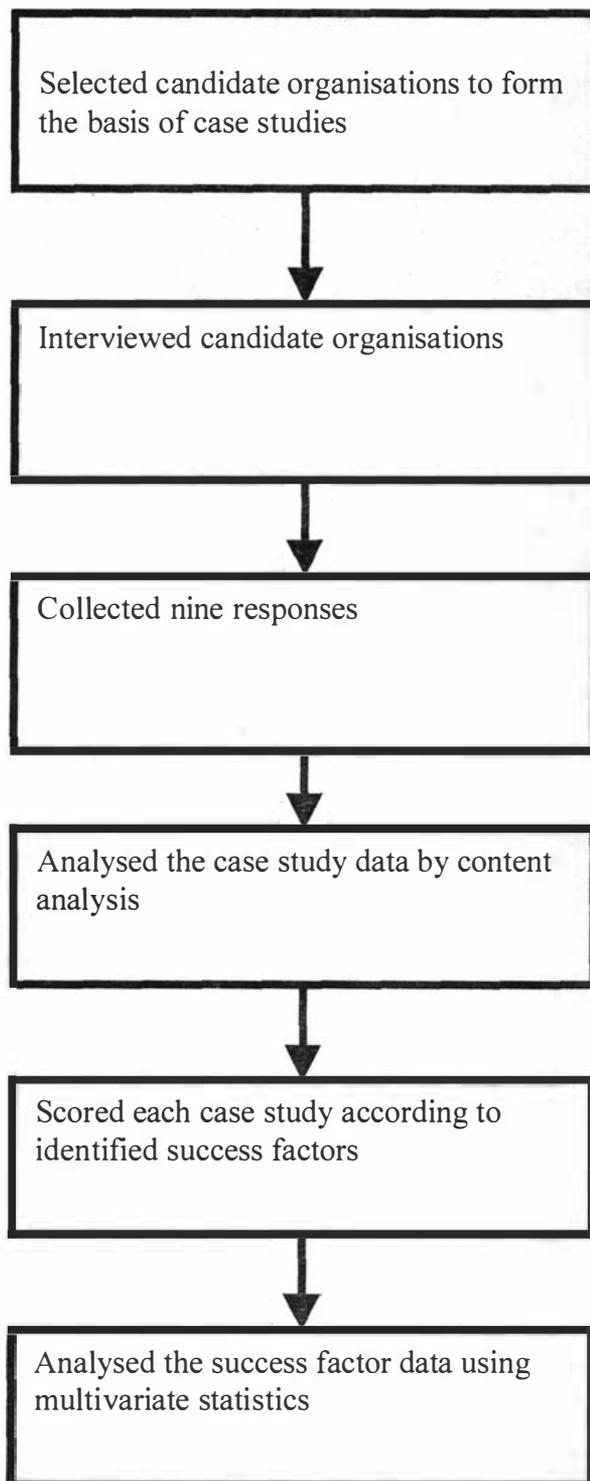
## **5.5 Case Studies**

The three questionnaires were designed to provide mainly quantitative information across the range of New Zealand industry sectors. These results were intended to establish local data and enable some comparisons to be made between organisations on the basis of industry and size.

Nine organisations were selected for the case study methodology. They were chosen on the basis of being representative of the organisations sampled in the previous questionnaires. It was intended to gain a variety of approaches and perspectives and a wide a range of case studies as practically possible was used. The nine were chosen for a number of reasons. One was that they had indicated their willingness to participate in further research by sending back their contact details on the form provided with the questionnaire. Some were interested in the research and were known to the researcher personally. Another organisation was approached by the researcher after hearing of the work in which a Web designer was being employed.

Each organisation was approached with an initial query asking whether they were prepared to participate in the research and who was best to contact in the organisation. An overview of the process was discussed and the participants were asked about their timeframes for implementation. In some cases these discussions were over the telephone and in others it was done face to face. Emails were used to follow-up any arrangements and clarify aspects that were unclear. Details of coding and analysis can be found in Chapter 18.

Once the results of the questionnaires were known, analysis of the data was performed. Any interesting findings or trends were noted with some of these being suitable for investigation in the case studies. The case studies were a vehicle for exploring the process of gaining and developing the organisation's online presence. The intention was to gather qualitative longitudinal data and provide respondents with the opportunity to reflect on the process with the benefit of hindsight. Whereas the questionnaires tended to be answered by one person within the organisation, the case studies involved comments from a range of involved employees. Another important distinction is the interviews were conducted over a longer period of time, which afforded interviewees the opportunity to reflect and consider previous comments.



### 5.5.1 Designing the survey

Three questionnaires were used in the research. The first one was paper-based and had seven initial questions covering industry sector, number of employees and locations and whether they were importers, exporters or local suppliers. After answering a question about whether their organisation was on the Internet or not, respondents were directed to one of two sections. If they were on the Internet there were 27 questions and if they weren't on or weren't on yet, they were directed to 16 questions. Most

questions were from an industry and organisational perspective while a few asked the respondent about reactions from customers and clients about their Internet use. The questionnaire was nine pages in length.

The second questionnaire was sent by email and for comparison purposes had many of the same questions as the paper-based questionnaire. This time however the respondents were already online so the questionnaire didn't require two sections to cater for those organisations already on the Internet and those that weren't.

The third questionnaire was paper-based and eight pages long and once again had similar questions to the previous two questionnaires for comparative purposes. This time some distinction was made between the respondent as an individual and the organisation as a whole. More detailed information was sought about time online, applications used, perceived importance of different information types, concerns about the Internet, Internet competence rating, Web site content and purpose and so on.

### **5.5.2 Target Audience**

Both the paper and email questionnaires were aimed at New Zealand organisations across the full range of industry sectors. The envelopes for the paper questionnaires were addressed to "The Manager" followed by the organisation's address. The email questionnaires were sent to the organisations' email addresses obtained by visiting their Web sites or through their listing on the Te Puna Web site listing New Zealand Internet connected organisations. The words "Attention Communications Manager/ IT Manager/ Information Officer/ Office Administrator" were used in the subject line to attract the attention of the most suitable person who could answer questions on the impact of Internet on their organisation. At the time that the email questionnaires were addressed in this manner it was considered this would be the best way to contact the appropriate person. Upon reflection, the lack of a particular person's name (as used from the Small and Medium Enterprise Centres' databases) or the one title (as in "The Manager" to the first paper-based questionnaire), may have meant that the email questionnaires were not targeted as well as they might have been.

Respondents who elected to participate were entitled to receive a summary of survey findings if they wished to do so by completing their contact details on a separate sheet of paper and returning it in a separate reply-paid envelope (for the two paper-based questionnaires) and by advising the researcher by separate email in the case of the email survey.

### **5.5.3 Response rates**

Researchers in general and the market research industry in particular are concerned about a worldwide decline in response rates of surveys (Baim, 1991; Hawkins, 1975; Meier, 1991; O'Neill, 1994; Smith, 1976; Steeh, 1981). One consequence of declining response rates is the potential for nonresponse bias to increase. This, in turn, has resulted in the validity of results of surveys with low response rates being questioned. If the non-response rate for a survey is high, the views of a considerable number in the

original sample who refused to take part or were not contacted are not incorporated into the results. Thus, the estimates on which the results are based may be biased.

Various methods of addressing the nonresponse problem have included pre-notification letters and telephone calls, increasing the number of callbacks to reduce the number of noncontacts, in the case of telephone surveys attempting to convert refusers into respondents, improved interviewer training and weighting survey data. The use of the first four of these methods has increased response rates somewhat (Dillmans, Gallegos & Frey, 1976; Fox, Crask & Kim, 1988; Kanuk & Berenson, 1975; Traugott, Groves & Lepkowski, 1987) but none has been completely successful in eliminating nonresponse.

Although the potential for nonresponse bias remains until a 100% response rate is reached, many researchers have noted that, at some level of response, interim estimates do not vary from final estimates. Their hypothesis is that the effect of any nonresponse bias in these situations is likely to be minimal and, in many cases, relatively unimportant, particularly if the final response rate was 70% or more- at least for practical purposes.

Hosie (1995) found that at a response rate of 48%, demographic and awareness variables were prone to nonresponse bias in the telephone survey. It would appear that a relationship existed between these two types of variables. In other words, the differences between interim and final estimates for the awareness variables may have arisen because of differences in the demographic characteristics of the survey sample at these response rates.

The attitude and demographic variables in the mail survey appeared to have a very low potential for nonresponse bias and, as for the telephone survey, behavioural variables were not prone to nonresponse bias at a response rate close to 50%.

Hosie's (1995) study found that a tentative minimum acceptable response rate appeared to be close to 50%. At this response rate, only three variables in the two surveys had an interim estimate which differed significantly from the final estimate. Hosie (1995) suggests that perhaps researchers can now be more confident that a response rate close to 50% is acceptable for many practical purposes because the estimates may not vary significantly from those obtained at, say, a 70% response rate.

Hosie's research reports the results of an attempt to establish a tentative 'minimum acceptable response rate' at which the interim estimates for the two surveys did not differ significantly from final estimates. Data from a mail survey with a sample of 1270 respondents randomly selected from NZ electoral rolls, and from a telephone survey with a sample of 183 respondents randomly selected from five telephone directories was used for the research.

The results indicate that a tentative 'minimum acceptable response rate' may be close to 50%. The study found that, at a response rate of 48%, demographic and awareness

variables were prone to nonresponse bias in the telephone survey, and that attitude and demographic variables had a very low potential for nonresponse bias in the mail survey at a response rate of 51%. Ultimately the potential for nonresponse bias in a particular survey will depend on the demographic characteristics of respondents and nonrespondents and the strength of the relationship between these characteristics and the key variables of interest.

## 6 Results and Analysis of Paper Questionnaires

### 6.1 Introduction

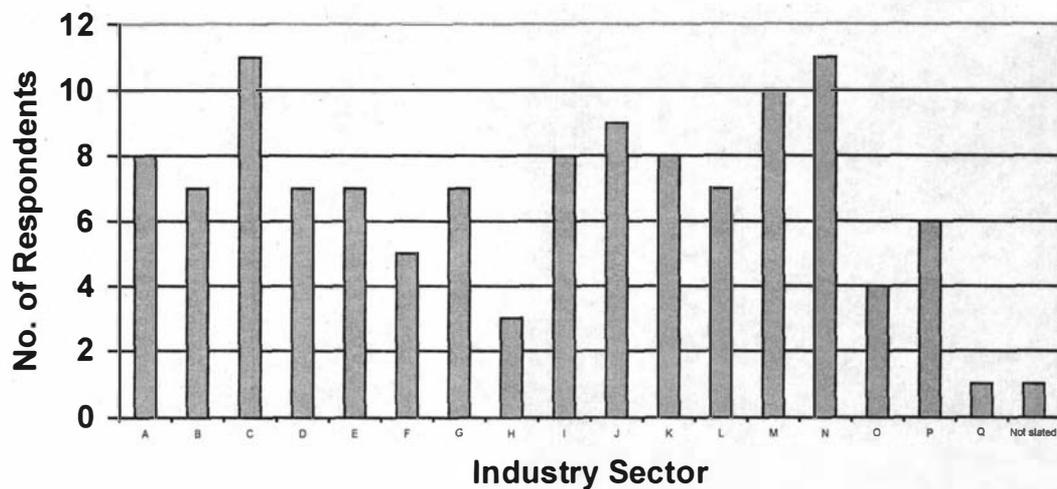
255 questionnaires were sent to organisations that were listed in the NZ Who's Who and 1996 A'Courts Business Handbook. All 17 industry sectors outlined in the 1993 Australian and New Zealand Standard Industry Classification manual were sampled with 15 questionnaires sent to organisations in each sector. It was decided that this would allow a good range of responses with a similar number being targeted in the email questionnaires later on. 120 paper questionnaires were returned, giving a response rate of 47.05%. The following results are from these questionnaires.

#### Q1 What industry sector are you involved with?

Respondents described the industry sector they were involved with. The researcher then categorised the responses with the appropriate code from the Australian and New Zealand Standard Industrial Classification 1993. Response rates for the various industry sectors were as shown in table 6.1. A recoding was done to collapse some of the categories to determine whether patterns could be seen. Categories chosen were manufacturing (A), retail and trade (B), construction (C), service (D), other (E) which included government departments and primary industries and missing (F). Once the recoding was done, the results appeared as follows in table 6.1

Existing Code	Category	%	Actual count
A	Agriculture Forestry and Fishing	6.66	8
B	Mining	5.83	7
C	Manufacturing	9.16	11
D	Electricity Gas and Water Supply	5.83	7
E	Construction	5.83	7
F	Wholesale Trade	4.16	5
G	Retail Trade	5.83	7
H	Accommodation Cafes and Restaurants	2.5	3
I	Transport and Storage	6.66	8
J	Communication Services	7.5	9
K	Finance and Insurance	6.66	8
L	Property and Business Services	5.83	7
M	Government Administration and Defence	8.33	10
N	Education	9.16	11
O	Health and Community Services	3.33	4
P	Cultural and Recreational Services	5.0	6
Q	Personal and Other Services	0.83	1
	Not stated and impossible to determine	0.83	1

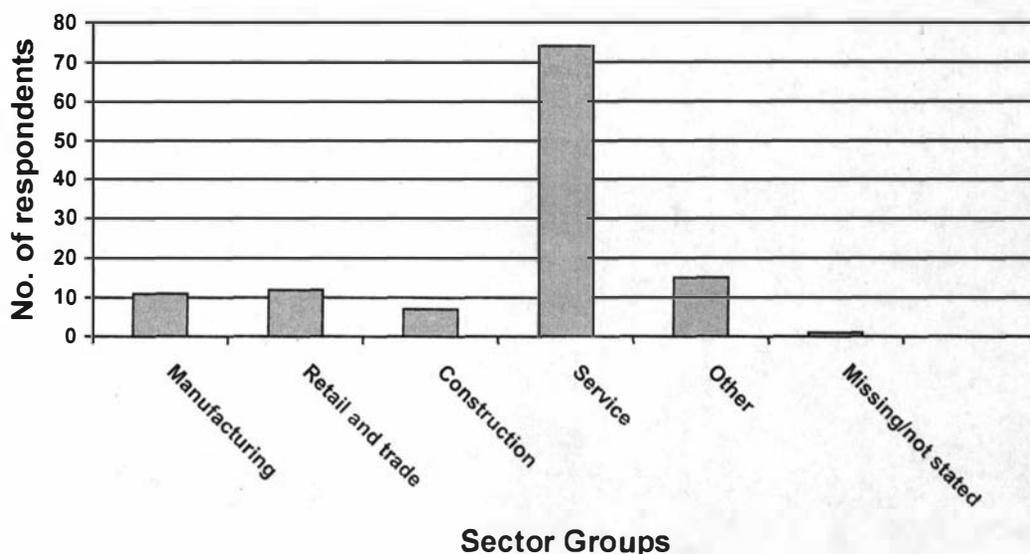
**Table 6.1 Summary of respondents in each industry sector**



**Figure 6.1 Summary of respondents in each industry sector**

New Categories	Category	Former categories	%	Actual count
A	Manufacturing	C,	9.16	11
B	Retail and trade	F, G,	10.0	12
C	Construction	E	5.83	7
D	Service	D, H, I, J, K, L, O, P, Q	61.63	74
E	Other (govt depts, primary industries)	A, B, M, N,	12.5	15
F	Missing/not stated		0.83	1
Total			100	120

**Table 6.1.1 Summary of respondents in combined sector groups**



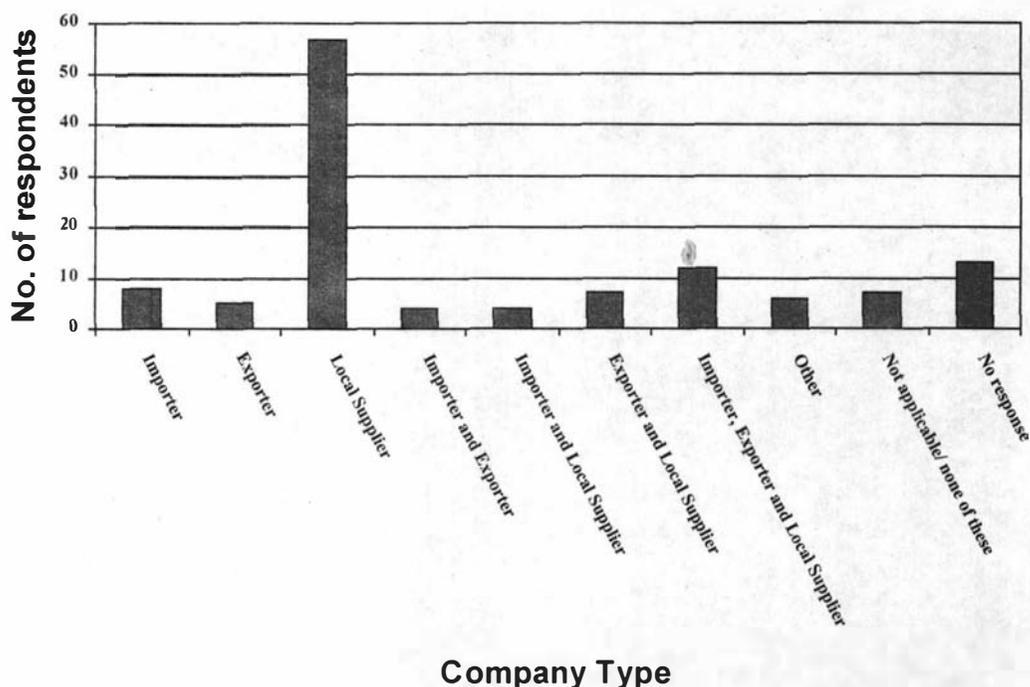
**Figure 6.1.1 Summary of respondents in combined industry sectors**

**Q2 Is your company an importer, exporter or local supplier?**

The question required respondents to tick one or more of three boxes on the questionnaire asking whether their company was an importer, exporter or local supplier. As some respondents had ticked more than one box, there were more than 120 response to this question. The categories given on the questionnaire did not cover everything and respondents in addition to those categories provided on the questionnaire, respondents gave six further responses. These are the six shown under other in table 6.2. Seventy eight percent of respondents selected one or more categories and the results were:

Category	No. of Responses	% of Responses
Importer	8	6.5
Exporter	5	4.06
Local Supplier	57	46.34
Importer and Exporter	4	3.25
Importer and Local Supplier	4	3.25
Exporter and Local Supplier	7	5.69
Importer, Exporter and Local Supplier	12	9.75
Other (Agency, Manager, Government, Embassy, Shipping Line, Wholesale)	6	4.87
Not applicable/ None of these	7	5.69
No Response	13	10.56

**Table 6.2 Company type**



**Figure 6.2 Company type**

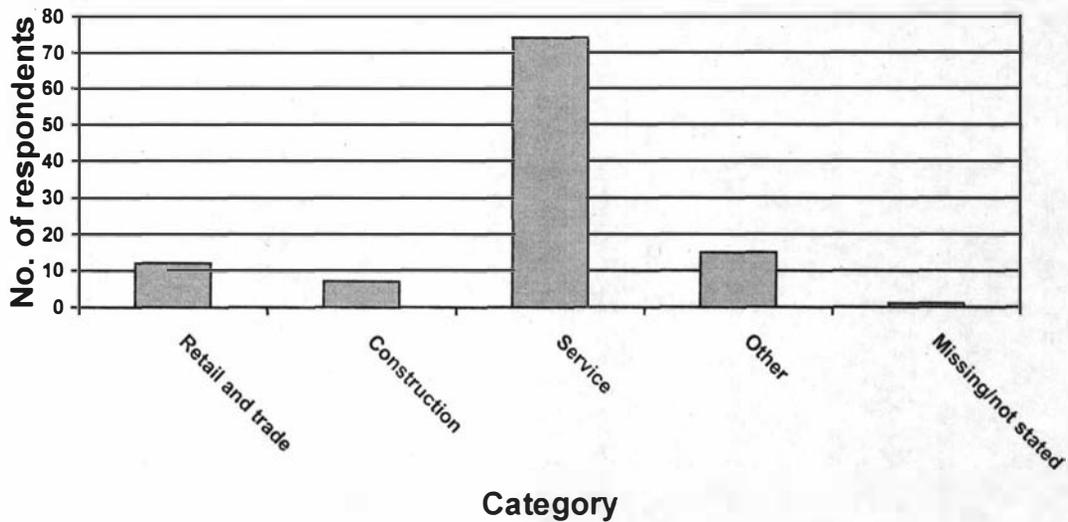
**Q3 How would you describe your organisation’s core business?**

This was designed to be a double check on the industry sector requested in Q1. Some respondents were involved in more than one industry sector and one respondent did not provide any response that made it possible to ascertain the industry sector.

When these responses are compared with the answers given in question one, the numbers for new categories A, B and C are consistent but D and E do not match. The actual count of the combined sectors that form the new category D are 74 but previously in Q1 these totalled 53. The number in the new category E is 15 in question three but 36 in question one.

Code	Category	%	Actual count
A	Manufacturing	9.16	11
B	Retail and trade	10.0	12
C	Construction	5.83	7
D	Service	61.63	74
E	Other	12.5	15
F	Missing/not stated	0.83	1
Total		100	120

**Table 6.3 Organisation’s core business**



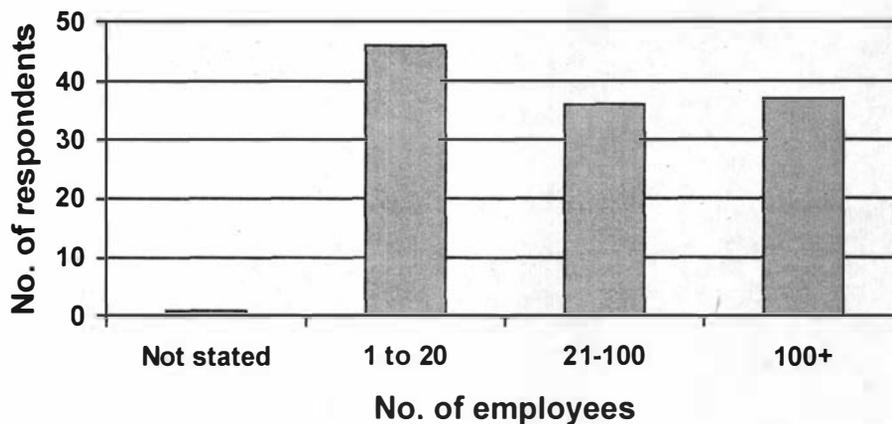
**Figure 6.3 Organisation's core business**

**Q4 How many employees are there in your organisation?**

The size of respondents' organisations fell roughly into three groups: those that had between 1-20 employees (38.3%), those with 21-100 employees (30%) and 100+ employees (30.8%). This illustrates that the majority came from small businesses and the rest were equally split between medium and large businesses. The largest number of employees was "86,000 with 120 more in New Zealand." Two respondents who did not give a clear indication stated 50+ and 150+ employees and these have been coded in the 51-100 and 101-500 categories accordingly. This accounts for 120 questionnaires.

No. of Employees	No. of Organisations	% of Organisations
Not stated	1	0.83
1	6	5.0
2-5	13	10.83
6-10	15	12.5
11-15	10	8.33
16-20	4	3.33
21-30	9	7.5
31-40	5	4.16
41-50	4	3.33
51-100	19	15.83
101-500	25	20.83
501-1000	1	0.83
1000+	8	6.66

**Table 6.4 No. of employees in organisation**



**Figure 6.4 No. of employees in organisation**

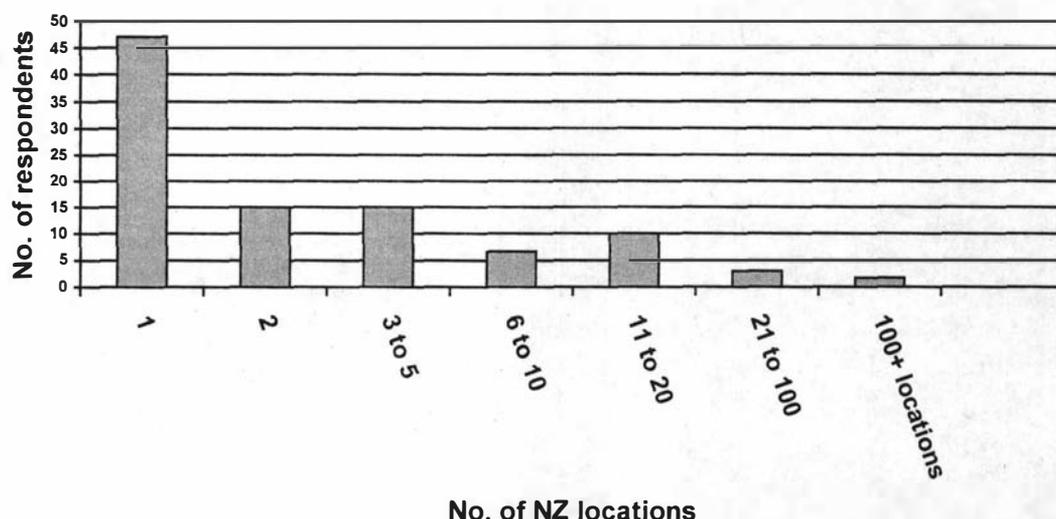
**Q5 How many locations do you operate from in NZ?**

All respondents answered the question about where the employees in the previous question were located. Nearly half of the organisations said they operated from one location and just under 85% operated from ten or fewer New Zealand locations. There was a jump from those with 20 locations to the four organisations clustered at 70, 71 and 82 locations, followed by one each at 180 and 190 locations. One respondent each said they had 1300 locations and were based at "all" locations in NZ. This accounts for the full 120 questionnaires.

No of Locations in New Zealand	No. of respondents	Percentage of Respondents
1 location	56	47
2 locations	18	15
3-5 locations	18	15
6-10 locations	8	6.6
11-20 locations	12	10
21-100 locations	4	3
100+ locations	4	3.4

**Table 6.5 No. of NZ locations**

One respondent said there were “four (locations)- all within Dunedin” and another replied they had only one location- “we are part of a multinational with many types of sites in NZ. We are unique within the group.” Another respondent wrote “all” which the researcher was unsure whether s/he meant all the organisation's locations are in NZ or whether the organisation operated from every NZ town and city. They had 60 employees (see Q4). One respondent put "three (employees) in our local office" (in Q4) but revealed in this question that they operated from 71 locations in NZ.



**Figure 6.5 No. of NZ locations**

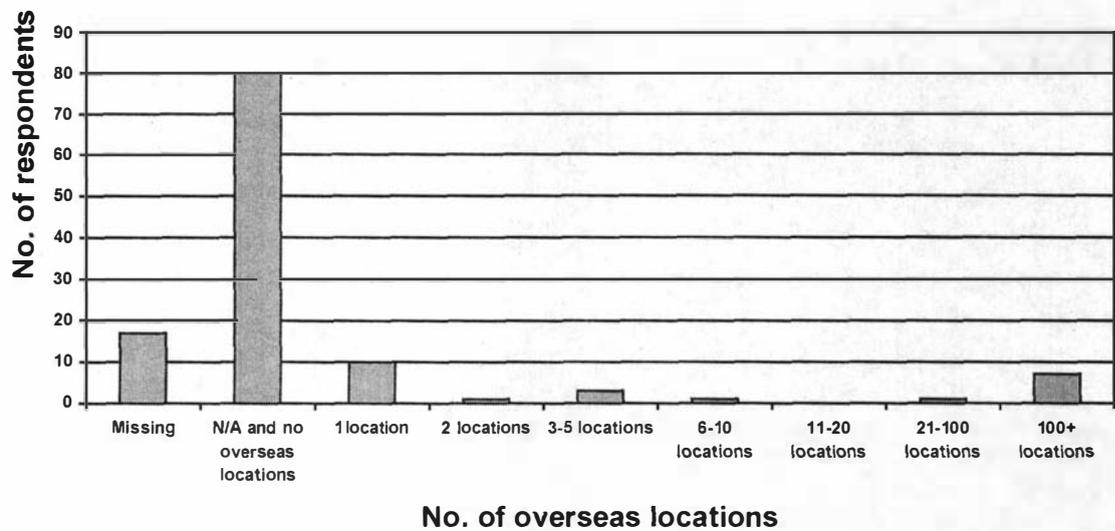
**Q6 How many locations do you operate from overseas?**

The data showed that of the 105 responses, 63% of respondents worked for organisations that did not operate outside New Zealand. Of those that have overseas locations for their business, the majority operated from only one location.

Some coding decisions were made with "100+" coded as 150, "several ministries" coded as five, "nil" coded as zero and "100's" of locations coded as 500. The comment "Head Office Sydney" has been taken as one overseas location. If the response given was "none", zero was written and if "not applicable" was written, then the space was left blank.

No. of locations overseas	No. of respondents	% of respondents
Missing	17	14.16
N/A and no overseas locations	80	66.66
1 location	10	8.33
2 locations	1	0.83
3-5 locations	3	2.5
6-10 locations	1	0.83
11-20 locations	0	0
21-100 locations	1	0.83
100+ locations	7	5.83

**Table 6.6 No. of overseas locations**



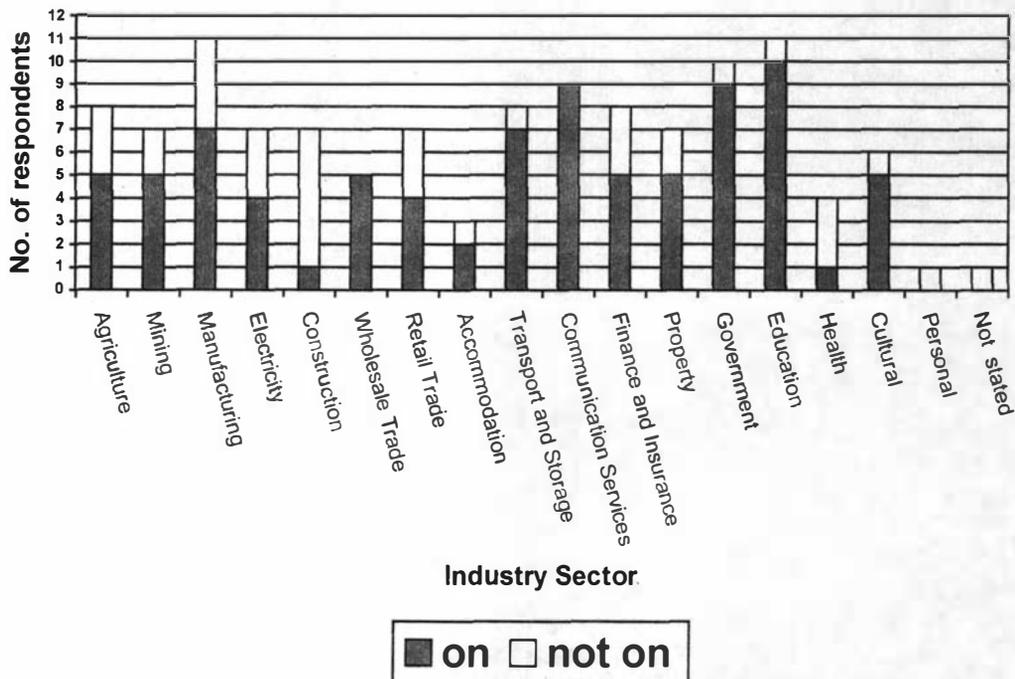
**Figure 6.6 No. of overseas locations**

**Q7 Is your organisation on the Internet?**

This question was used to divide questionnaire respondents on the basis of whether their organisations were on the Internet. If they were, they then completed questions 8 to 34 and if they weren't on the Internet already they were directed to questions 35 to 50. There were 84 (70%) who replied that yes they were on the Internet and 36 (30%) who replied no they were not. This accounted for all 120 questionnaires. Table 6.7 shows the breakdown of these two groups by industry sector.

Industry Sector	Industry Sector Name	Total (120)	On (84)	Not On (36)
A	Agriculture Forestry and Fishing	8	5	3
B	Mining	7	5	2
C	Manufacturing	11	7	4
D	Electricity Gas and Water Supply	7	4	3
E	Construction	7	1	6
F	Wholesale Trade	5	5	0
G	Retail Trade	7	4	3
H	Accommodation Cafes and Restaurants	3	2	1
I	Transport and Storage	8	7	1
J	Communication Services	9	9	0
K	Finance and Insurance	8	5	3
L	Property and Business Services	7	5	2
M	Government Administration and Defence	10	9	1
N	Education	11	10	1
O	Health and Community Services	4	1	3
P	Cultural and Recreational Services	6	5	1
Q	Personal and Other Services	1	0	1
	Not stated and impossible to determine	1	0	1

**Table 6.7 Organisations on the Internet**



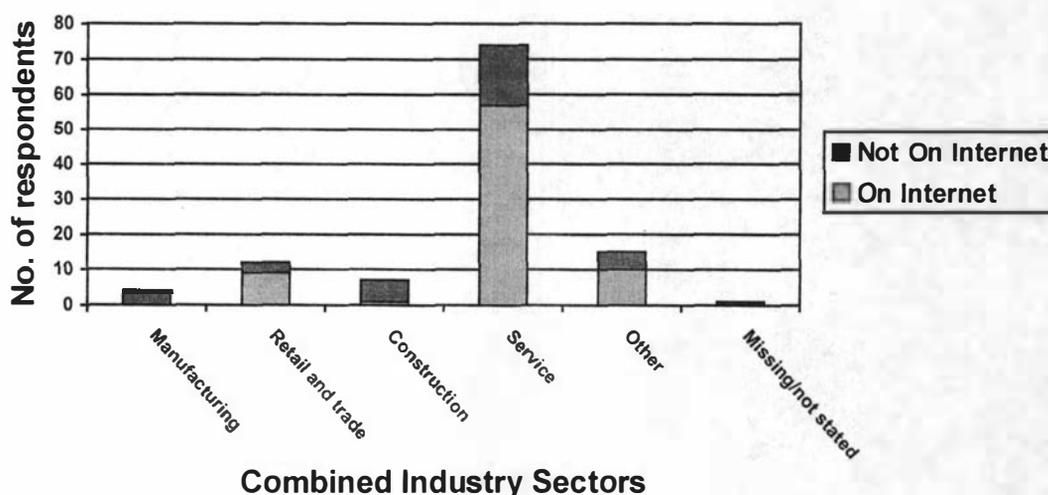
**Figure 6.7 Organisations on the Internet**

The data shows some interesting results. In all but three of the 17 industry sectors there are more organisations on the Internet than not. These are sectors are construction, health and community services and personal services. The primary sectors of agriculture, forestry and fishing, and mining had over half their respondent organisations on the Internet. All 100% respondents in the wholesale trade and communication services were online. Sectors M (government administration and defence) and N (education) had 90% and 91% of their organisations connected to the Internet.

For ease of comparison, the same collapsed categories were used as in question 1.

Code	Category	Total	On Internet	Not On Internet
A	Manufacturing	11	7 (64%)	4 (36%)
B	Retail and trade	12	9 (75%)	3 (25%)
C	Construction	7	1 (14%)	6 (86%)
D	Service	74	57 (77%)	17 (23%)
E	Other	15	10 (67%)	5 (33%)
F	Missing/not stated	1	0 (0%)	1 (100%)

**Table 6.7.1 Organisations on the Internet in combined industry sectors**



**Figure 6.7.1 Organisations on the Internet in combined industry sectors**

**Q8 How long has your organisation been on the Internet?**

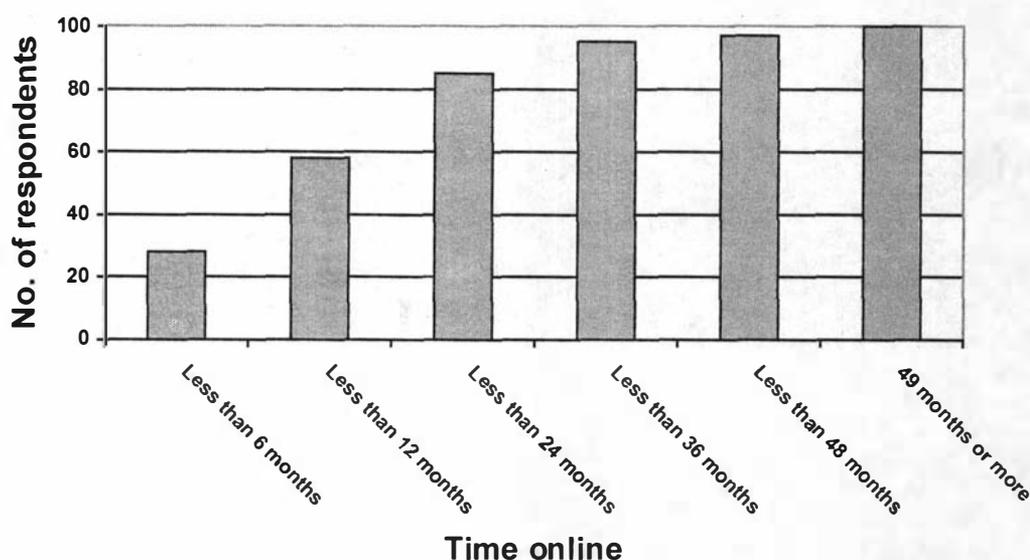
This question was the first of those addressed to respondents whose organisations were already on the Internet. All 84 respondents in this category answered this particular question with all responses converted to months. "Several months" was coded as six months, "4-5 years" was coded as 54 months and "just started" as one month.

Twenty nine percent of respondents had been on the Internet less than six months, 58% for less than 12 months and 86% for less than two years. While not necessarily the case, this may indicate that the majority of organisations surveyed are still becoming accustomed to being online with training and policies being established and current organisational use largely related to email and information collection.

Table 6.8 shows the length of time the organisations surveyed had been on the Internet with the cumulative percentage shown on the right.

Length of Time on Internet (in months)	No. of Respondents	Cumulative % of respondents
Less than 6 months	24	28
Less than 12 months	25	58
Less than 24 months	23	85
Less than 36 months	8	95
Less than 48 months	2	97
49 months or more	2	100

**Table 6.8 Length of time on the Internet**



**Figure 6.8 Length of time on the Internet**

**Q9 What were the determining factors in your decision to connect to the Internet?**

All 84 respondents who were connected to the Internet replied to this question; some on more than one theme. The most prevalent responses were to do with information and communication. Forty six responses were to do with gaining and sending information, using email to send data and enabling faster and cheaper communication. Some responses indicated specific ways that Internet was benefiting the respondents' information and communication needs eg "more information on olives", "access to

standards and health and safety information", "receiving data from other organisations easier via email", "email service to support offshore activity" and "saving communications cost and the ease of communication- better response when using email than phone tag and voice mail."

Twenty nine responses were to do with communicating with customers and suppliers. "Ease of information for foreign investors", "access to international companies and ideas", "sending legal documents to directors who are in Australia and Russia", "necessity of speedier information resource and communication with overseas counterparts", "offer additional means of communication", "customer contact (worldwide) and communication (local)", "email access- ability to easily communicate with our suppliers", "sending client reports around NZ routinely (none of our clients are in Hamilton where we are based)", "global messaging to clients and suppliers who are also connected" and "communication requirement by corporate clients and speeds up results with clients and other solicitors" are examples.

Five responses indicated the organisation was looking ahead and considered aspects of the Internet that they would use in future rather than immediately eg "Internet will become increasingly important to distance education in improving services and lowering staff and communication costs", "future file storage and access methods", "platform for new business opportunities, assess potential", "wanted to register our domain name for future use" and "future plans for data collection and dynamic database access."

A group of 15 respondents' comments showed their need to stay current and find out for themselves and their organisations the benefits (or otherwise) of Internet. Some comments that showed this are, "Drive to stay abreast of business trends", "industry hype led to a test connection to determine usefulness", "keeping up with current communications methods", "to understand its relevance to our business", "need to keep an eye on Internet advertising (some hope!!) (sic)", "pilot to understand medium", "keep up to date", "evaluate use of email", "telecommunications innovation", "understanding use of Internet in business community", "to be up with the play on corporate communications" and "need to be seen to keep up with technology."

Another group of 16 responses was related to various business functions. (Other respondents may of course have been thinking of these and expressing them through the information and communication requirements mentioned earlier.) Some responses include "put message on Internet to lift profile/increase sales", "marketing prospects through Tradenz" and in a similar vein "wish to access export opportunities listed by Tradenz on the Internet", "advertising", "PR", "PR and marketing", "platform for new business opportunities", "marketing of institution", "WWW for marketing", "to provide further marketing opportunities" and "train staff."

Eight comments expressly mention setting up a home page as a motivating factor for getting an Internet connection. The researcher thought this motivation would have been more strongly represented in the responses but, as in the previous category, some

of these may have been subsumed under the overall category of getting and sending communication and information. Comments such as "home page", "establish a presence", "create a Web page", "commerce- to eventually implement our transactional banking site" and "to establish our own Web site" show this.

The final category relates to software available from the Internet and the benefits this would bring to the business eg "IT access to patch's fixes and supporting informations (sic)", "update virus software" and "access to technical information on computer systems" and "access to IT information/resources."

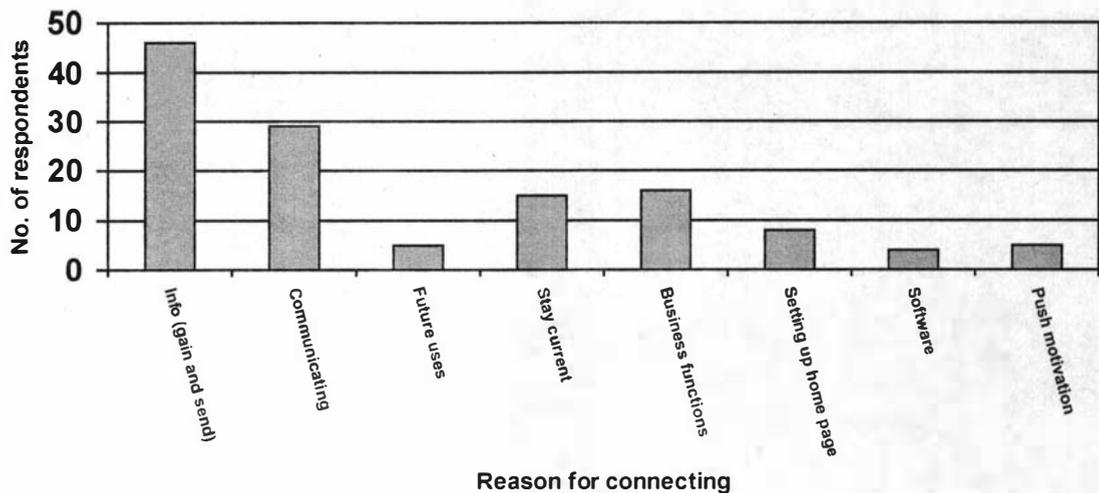
There were several other comments that indicated a "push" motivation eg "other properties are connected. It is the way business will be run in the future", "other companies have asked us if we have an email address", "The employment of a communications officer requiring wider access to information", "publication of documents- need for rapid (instantaneous) release and information" and "can't afford not to be."

One response was "wanted to register our domain name for future use" and another indicated that they had been connected for some time, "party to creation of Tuianet with universities, CRIs etc." One interesting comment was "more than 75 programmes weekly by ethnic groups who're all interested in news/information from or about their countries of origin."

In summary, there was a range of motivations for these organisations to connect to the Internet with the main one being to gain and send information. Email was seen as a fast and inexpensive medium to reach customers and suppliers and access to a range of Web sites containing useful information was perceived as a definite advantage. Allied to this was the desire to stay current and informed. The third major category was related to marketing through a home page to gain an online presence for their organisation.

Reason for Connecting to Internet	No. of Respondents	% of respondents
Gaining and sending information	46	54.76
Communicating with customers and suppliers	29	34.52
Future uses	5	5.95
Stay current and investigate potential	15	17.85
Various business functions	16	19.04
Setting up home page	8	9.52
Software available from the Internet	4	4.76
Push motivation	5	5.95

**Table 6.9 Determining factors for Internet connection**



**Figure 6.9 Determining factors for Internet connection**

**Q10 What were the major factors in determining which particular Internet Service Provider to use? (*availability in your area, cost, training, online support etc*).**

All 84 respondents who were on the Internet replied to this question. Forty three respondents (just over half the total) gave one reason for their choice, but the rest gave two, three or four comments. Four prompts were given to this question by the researcher.

One group of comments is that of familiarity with the ISP and word of mouth recommendation. There were 19 respondents who said this, with 13 of these mentioning it as their sole reason for selecting that ISP. Some comments showed previous contact with the ISP eg "Legacy decision, known quality of supply", "provider used by the computer company who did our Internet installation", "The ISP's understanding of our business", "we already had an account with our provider", "local supplier installation" and "we are clients of IBM." Others indicated that they had taken the advice of a technical person eg "recommendation by our main legal software provider" and "advice from computer technician."

Two comments expressed dissatisfaction with the ISP. Although the question wasn't asked in the questionnaire, it would be interesting to know whether those organisations making the change had taken someone else's recommendation earlier or had thoroughly investigated a range of providers eg "I was given a X disk. I'm about to switch to Y" and "Unsure (I wasn't there) but we've just changed providers because of dissatisfaction with previous service."

Cost was mentioned by 34 respondents, with six mentioning it as their sole reason for selecting a particular ISP. When more than one reason was given, it was interesting to note that cost was almost always mentioned first. Some comments are "to avoid the cost of toll calls" and "flexibility of pricing structures", "cost- although difficult to

determine with no standard methods of charging among ISPs", "X had the easiest accounting system- only reason" and "X- simply the accounting system- low hassle going on X account."

Availability was mentioned by 16 respondents with six naming it as the sole reason. Most didn't elaborate with "available to connect all over lower South Island" and "geographic location which allowed us to install a radio link 91.6 meg" the only specific comments.

No one mentioned training specifically although "all of the above" (the prompt factors) did include training. The researcher wondered whether this has been encapsulated under "online support." This raises an interesting point to be considered alongside questions 20 and 41 about the type of training that has been available for employees. From the comments in question 15 (what lessons have you learnt (positive and negative) about being online?), it would seem that respondents have learnt that a lot of time is being wasted in trying to retrieve, sift and sort information. While some IT people consider these to be intuitive skills, this doesn't necessarily appear to be the case. Training may be identified as necessary only in retrospect.

Forty one respondents identified online support and services offered as important factors (slightly less than half the total respondents). Fourteen respondents mentioned service and services provided as their sole reason for choosing that ISP. Online support comments include "1- fast access, 2- quality help/service", "24 hour support", "simplicity of use, reliability", "service quality, support", "availability/speed of lines", "services provided", "assistance to set up/ get going online support", "credibility", "quality of service (reliability + etc)", "help, knowledge" and "support and good response times."

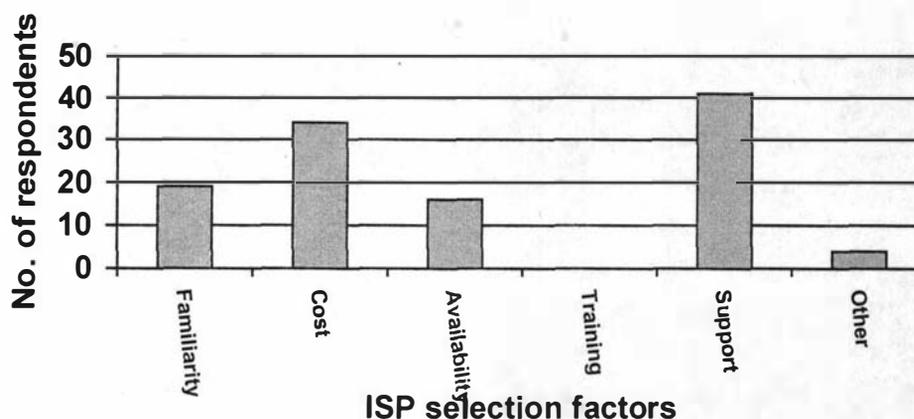
Technical services include "services eg ISDN global dial-up etc", "reliability of connection, security", "0800 support, 0800 connection cost", "available features eg integrated email and Web like pages (this was before most businesses had Web sites)", "additional services available, radio link, hosting of home page etc" and "our WAN connections."

One comment was "don't go through ISP" and another "historical reasons (we used a university backbone before commercial providers existed)" and "we are an ISP in our own right but have only internal customers." Other comments were "co-operative socialist principles", "they could actually do the job", "stability! Someone answered the phone!" and "the ISP's understanding of our business."

In summary, the prime reason for selecting a particular ISP tended to be the support and services offered followed by cost related reasons. Other reasons such as familiarity, being recommended and availability were some distance behind the two main deciding factors.

Reason for selecting ISP	No. of respondents	% of respondents
Familiarity, recommendation	19	16.66
Cost	34	29.82
Availability	16	14.03
Training	0	0
Support and services	41	35.96
Other	4	3.5

**Table 6.10 Reasons for selecting ISP**



**Figure 6.10 Reasons for selecting ISP**

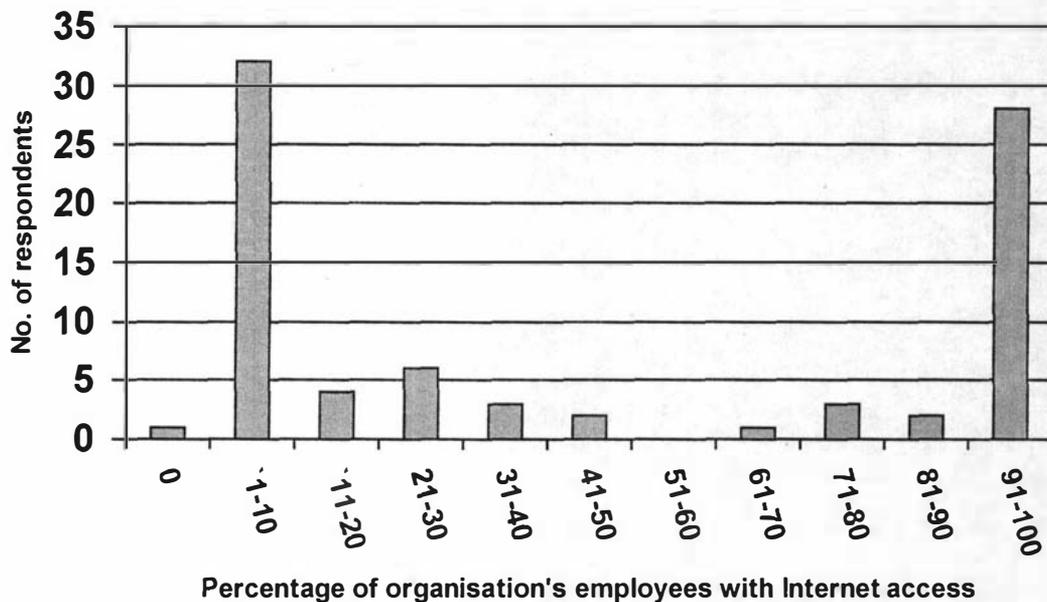
**Q11 What percentage of your employees have access to the Internet?**

All 84 organisations that said they were on the Internet answered this question. Some respondents mentioned email and the researcher has taken email access to mean they have Internet access. Some comments that were coded as 100% access were “100% email only, 4% full access”, “100% email, 7% WWW” and “100%-through separate LAN in the organisation, 10% have integrated desktop access on pilot.”

The replies to this question (in percentages) are displayed in Table 6.11. As can be seen from the table, there is a tendency for the organisations surveyed to provide nearly none or almost all employees with Internet access. Thirty eight percent of respondents said their organisations gave between 1-10% of employees Internet access and thirty three percent of respondents said Internet access was given to 91-100% of their employees.

Percentage of employees with Internet access	No. of respondents
0	1
1-10	32
11-20	4
21-30	6
31-40	3
41-50	2
51-60	2
61-70	1
71-80	3
81-90	2
91-100	28

**Table 6.11 Percentages of employees with Internet access**



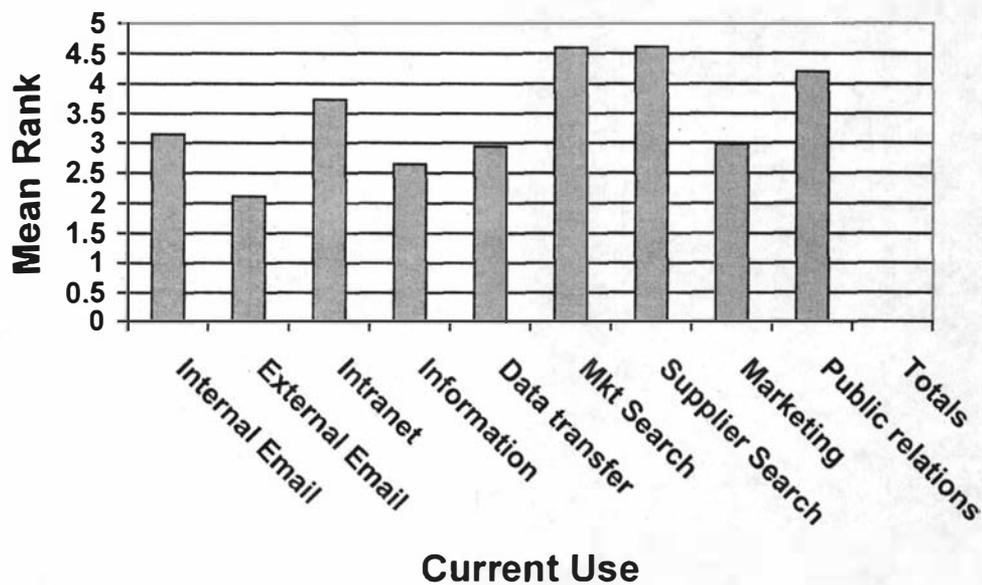
**Figure 6.11 Percentages of employees with Internet access**

**Q12 What does your organisation use the Internet for? (Please rank in order of importance in boxes provided)**

The question asked respondents to rank in order of importance their organisation's use of the Internet at present. All 84 respondents whose organisations were on Internet replied to this question. Some respondents ticked several boxes so the researcher has decided that they ticked all boxes they saw as being relevant so scores have been averaged ie 1 =1, 2 ticks =1.5, 3 ticks = 2, upto 9 ticks = 5+. Responses written as "nil" have been coded as 0.

Internet Present Use Ratings	.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	7	8	9	Sum	Mean
Internal Email	0	5	0	9	7	1	2	5	0	1	0	2	2	0	1	35	3.15
External Email	0	20	8	25	10	6	6	2	0	1	0	0	0	1	0	79	2.11
Intranet	0	2	0	0	1	5	3	4	0	2	0	1	0	0	1	19	3.73
Information Collection	0	7	6	21	9	11	5	3	0	5	0	1	0	0	1	69	2.65
Data transfer	0	4	3	8	6	9	6	8	0	2	0	2	0	0	0	48	2.94
Searching for new markets	0	1	1	1	2	1	4	3	0	5	0	1	1	2	2	24	4.60
Searching for new suppliers	0	0	0	3	1	4	1	0	0	3	0	2	1	2	1	18	4.61
Marketing through a home page	0	6	0	6	3	5	4	2	0	3	0	0	1	1	0	31	2.98
Public relations	0	0	0	4	1	2	5	4	0	2	0	3	1	2	0	24	4.20
Totals	0	45	18	77	40	44	36	31	0	24	0	12	6	8	6	347	

**Table 6.12 Organisations' current uses of Internet**



**Figure 6.12 Organisations' current uses of Internet**

The table indicates that the most popular use currently made of the Internet is external email followed by information collection. Marketing through a home page was mid ranked with Intranet and searching for new suppliers at the bottom of the list. In addition to the boxes that respondents were asked to rank, a number of comments were made under "other responses" and some elaborated on categories given in the questionnaire. New themes were "for fun", for staff training and as an educational tool.

The following list contains those comments given as "other":

- "keeping abreast of communication and marketing trends"
- "information release"

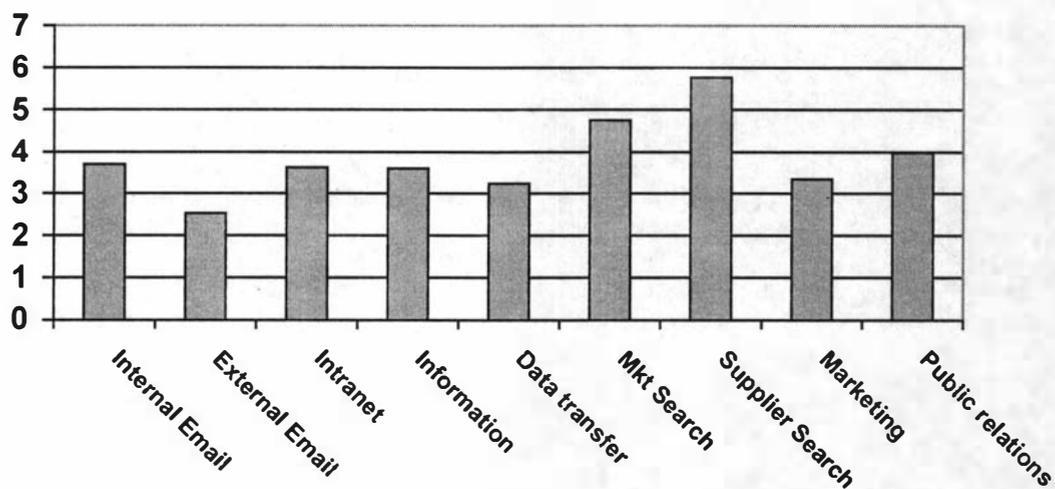
- “update software”
- “for fun”
- “internal email and marketing through a home page coming soon”
- “research”
- “researching what the competition is doing”
- “we will be using the Internet increasingly for carrying out our core business ie distance teaching”
- “staff training ie skills for future”
- “access to information in journals- aim is to reduce subs for paper journals”
- “will shortly be using the Internet for external/internal email and also on the backbone for a virtual private network to support an intranet”
- “provision of services/support (free) to teachers- mainly for PR reasons”
- “an educational tool- many users are first time users.”

**Q13 How do you see the Internet being used by your organisation in the future?  
(Please rank in order of importance in boxes provided)**

The question was similar to the previous one in that it provided a list of options and asked respondents to rank them in order of importance for their organisation's use of the Internet in the future. All 84 respondents whose organisations were on the Internet replied to this question. The same process was followed as for the previous question in terms of averaging ticked boxes for those respondents who failed to follow instructions and ticked rather than ranked the options.

Internet Future Use Ratings	.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	7	8	9	Total	Mean
Internal Email	0	5	0	4	0	7	8	8	5	4	0	1	1	1	1	45	3.7
External Email	0	17	1	14	1	14	11	9	6	6	0	0	1	0	0	80	2.53
Intranet	0	4	0	3	1	10	7	7	4	4	0	1	0	1	1	43	3.62
Information Collection	0	4	1	12	0	18	8	9	6	8	0	3	1	3	0	73	3.6
Data transfer	0	6	0	6	1	13	11	9	6	6	0	4	2	0	1	65	3.24
Searching for new markets	0	2	0	1	0	2	2	6	5	2	0	5	2	2	1	30	4.75
Searching for new suppliers	0	0	0	1	0	2	2	1	4	5	0	0	4	3	4	26	5.76
Marketing through a home page	0	13	0	3	1	15	8	9	6	6	0	2	2	1	0	66	3.35
Public relations	0	1	0	7	0	4	9	9	6	5	0	4	0	1	1	47	3.98
Totals	0	52	2	51	4	85	66	67	48	46	0	20	13	12	9	475	

**Table 6.13 Organisations' future uses of Internet**



**Figure 6.13 Organisations' future uses of Internet**

This table indicates that the most popular projected future use of the Internet is external email followed by information collection, the same as for current use. The desirability of having a home page has climbed to third placing with the motivation to have an Intranet also higher than in the previous question. Searching for new suppliers as a use of the Internet is anticipated by respondents to remain at the bottom of their list.

Additional comments made had some similarities to the other uses given by respondents for the current use question. Additional plans for future use are order placement, online banking and delivery of financial services and becoming a Web site provider. The following list contains these comments given as other uses:

- “course delivery of tuition; teaching and research tool for internal students”
- “online order placement”
- “for fun”
- “enhancement of the above (ie the researcher’s given list of uses)”
- “core business”

- “access to information in journals- aim is to reduce subs for paper journals by subscribing electronically, getting access. Will also save storage space for journals once they have returned from circulation”
- “connectivity with principals in other parts of the world”
- “we'll become a provider of Web sites”
- “Internet online banking”
- “delivery of financial services”
- “we are only using the Internet on a temporary basis until we put email only software”.

The next section of the questionnaire (Questions 14-25) dealt primarily with the organisation's home page.

**Q14 What process did you go through in getting a presence? (eg planning, home page design, technical and customer service back up etc?)**

This question was an open ended one with four prompts and asked respondents about the process of getting an online presence. There were 53 responses, so 31 of those using the Internet didn't reply to this question, possibly because they didn't have a home page. There were a range of responses including being unsure about the process, using specialist Web site expertise, using in-house expertise, using a combination of outside help and in-house expertise and still being in the planning stages.

Several respondents said they were unsure about the process of obtaining an online presence through a home page, possibly because they were not the person involved and the process was done at another location.

Other respondents said they set up the project, used specialist Web page designers (some mentioned by name)- eg "a company specialising in our sector offered to design a home page for us. We accepted the offer and implemented it as part of the project to develop access to it and a presence on the Internet" and "Copeland Wilson designed page in Oct 1996. In Dec 1996 Moc and Ero redesigned our Web page" indicating the need to review design and audience aspects.

Some pages were designed and created in-house with this often being seen as a marketing function. Some of these were fairly low key eg, "Little planning, site due for revamp/update including graphics etc" and "First created functional space then left it! (too ambitious/expensive), then found a real need with budget and did it. Next (we) expanded by doing next needed thing, and finished by tying it all together and creating "whole/co-ordinated" presence."

Other pages done in-house indicated a more methodical approach, "creation of project team in-house; prototyping; initial (internal) release; refinement; major update and public release" and "Bank (ie the business involved) introduced to the dynamics. Project team set up, fast track education via conferences and courses, close liaison with Internet provider, Strategic Plan (still being revised and revisited)."

Some companies realised the need for planning and more formality as the project progressed eg "Ad-hoc decision, but planning and development have become more formal and resources allocated appropriately."

Other organisations' approaches used a blend of both in-house and outsourced expertise, "Negotiated a page on a service provider's server, secured our domain name. All development has been done in-house with exception of recent consultancy for ActiveX/Java scripts. We now house our own server/mail server and node", "Pilot project at VUW then set up pilot in-house. Pilot developed to full implementation" and "Used service provider to design page though we supplied material."

Mention was made of ensuring the online image was consistent with the organisation's existing image and selecting those with existing expertise in the area. "Interviewed three ISPs capable of designing Web pages. Selected company already familiar with our corporate image across all brands, and showed innovation with existing sites" and "We decided that we need one, and outsourced the entire project to our marketing agency."

A number of respondents mentioned the need to run a pilot and test the home page within the organisation first. "Sat down and created rough draft (FrontPage 97). Released on Intranet and after polishing published to Web server." The need for change and improvement was recognised eg "The hardware already existed, so planned and implemented a home page which is under constant change."

Eight respondents replied "We are currently in the process of home page design" while twelve others remarked that it was not applicable or not applicable to them yet.

Other comments indicated the process respondents' organisations were going through at the moment to gain a presence eg "are currently considering two proposals from outside firms to design a home page for us", "discuss costs etc with two Web site hosts", "design and implement, currently changing" and that they had "identified information to be provided, designed structure, preparation/writing and testing and putting it online" and "planning, design, implementation."

Some respondents commented on particular motivations "driven by marketing, mainly to distribute company information to market and produce information internally." On the other hand, some respondents said "no planning, a spare space was on a section we use asking to be filled in, which we did" and "requested domain name only."

Some of the comments indicative of the planning process were "determined the percentage of our customers on the Net, speed we wanted, collected quotes and awarded the job" and "what message do we want to get across?, what information can we provide?, public relations considerations, "image" considerations- professional design", "planning, business case, design, implementation, review" and also "1- analysis of our objectives, 2- analysis of information architecture, 3-

design/development shared internally and with external company, 4- technical development done in-house."

**Q15 What lessons have you learnt (positive and negative) about being online?**

Fifty one of the 84 respondents whose organisations were online answered and these responses have been categorised as positive lessons, negative lessons and observations. Some were unsure what they had learnt and there were a couple of comments saying that it was too soon for them to tell.

Positive lessons learnt included:

- "It's better to be online than not. Customers have a better perception of us as a result"
- "Speeds up communication and eases communication. Allows things to happen more smoothly and seamlessly"
- "Has enabled more efficient internal communication"
- "Ease of communication, access to information"
- "Immediacy of communication- positive"
- "Information is great!"
- "People love email internally"
- "You are more accessible"
- "Easy for people to get information rather than ring us"
- "There is a tremendous amount of information available"

These positive responses are all related to information and communication available through respondents' organisations' use of the Internet.

Negative lessons learnt included:

- "Internet can be a time waster"
- "There's an awful lot of junk out there!"
- "If putting information online keep it up to date!"
- "It is very dependent on access to ISP providers. Speed of email is dependent on receiver's speed in checking their mail"
- "Consumes time with upgrades and virus protection/security"
- "Potential for virus infection, hacker hazard"
- "Easy for costs to escalate"
- "Firewall frustration, slow searching due to computer graphics"
- "Clunky state of software and technology"
- "Too much information"
- "It's slow to get people using it as a tool to sell to them"
- "Significant resources needed to keep home page fresh and full of life"
- "Need a fast machine and modem otherwise it takes too long"
- "No down time at all"
- "Learning curve, non-productive time"
- "Very time consuming maintaining the Web page"
- "The system can be very slow to log onto and countries other than the USA have been slow to list services over the Internet"

Themes evident in the negative lessons learnt while being online are primarily concerned with security and misuse of time.

Observations made included:

- “Maintenance/development of home pages (credibly) requires significant time/money”
- “Not enough to look good, must have content. Don't put live facility without substantial content”
- “Time goes very quickly -it is easy to spend a lot of time looking for information”
- “Need to resource/plan for updating/maintenance to keep it current”
- “Needs constant monitoring, for security etc”
- “Simplicity, clarity are imperative in Web development”
- “There is no rush. Gain a sound understanding and have developed a thorough strategic plan first”
- “Be patient!!! (x2)”
- “Be specific- very”
- “Best to spend the money and not take any shortcuts”
- “Compelling medium, resource (specialists) needed, get a GOOD supplier”
- “Critical importance of keeping home page data up-to-date; importance of managing costs”
- “Good service provider is crucial”
- “Important to have good access”
- “Information MUST be kept current”
- “What you think people will want is different from what they actually want”
- “Training is needed”
- “Long term marketing tool”
- “Keep it fresh, full of information”
- “Must be focussed”
- “Positive perception of company must force staff to adopt new methods”
- “Remember to check email”
- “Traffic rises rapidly, pages/content grows quickly, vital that it is well maintained and resourced”

There is a range of themes in the above list of observations by those respondents involved in the process of gaining an online presence. Factors mentioned by several respondents include the need to plan and not rush the process, the importance of a good ISP as well as the need for current and relevant content.

**Q16 How much Internet traffic did your organisation have two months ago?  
(approximate)**

This question was the first of a series of three asking about Internet usage in the organisation in megabytes. It became obvious that many people who filled out the questionnaire had no real idea about the volume of traffic. Only two respondents (although not asked for) made a distinction between incoming and outgoing traffic. Some respondents mentioned that the ISP charged them a flat fee per month rather than by volume.

Sixty one of the 84 respondents whose organisations were online replied to this question. In addition to the 23 missing respondents, 13 said the question was not applicable to them or the answer was nil. A further 13 revealed they had no idea how much Internet traffic they'd had two months ago. This means that over half of the respondents (49) whose organisations were online did not know this information. This may have been for several reasons: their job did not involve looking at these figures, they were not provided the details by their ISP or they had forgotten them.

The remaining 35 respondents gave a variety of measurements. Two gave measurements in terms of hits to the home page (an average of 1100 visitors and 15-20 hits for that month). Three respondents gave their measurements in hours with 10, 15 and approximately 20 hours used two months ago. Thirty respondents measured the traffic volume in megabytes with 10 saying less than 10 mb was used in their organisation in the last month, eight saying between 10 and 100 mb, seven reporting between 101 and 1000 mb and five giving the traffic as over 1000 mb. The maximum traffic given was 1812 mb although the respondent had followed it with a question mark.

**Q17 How much Internet traffic did your organisation have last month?**  
*(approximate)*

There were 59 responses to this question and the comments about measurement in the previous question also apply here. Eight respondents said the question was not applicable to them or they had nil use. Twelve had no idea about the amount of traffic.

Measurement details were given in hits, by hours and in megabytes. This time three respondents gave their measurement in terms of hits (an average of 1100 visitors, 15-20 hits and 300 hits per month). Four respondents gave a measurement in hours with 4, 6, 15 and approximately 20 hours used in the last month. Eight said the traffic volume in megabytes was less than 10 mb, eleven said it was between 10 and 100 mb, nine said between 101-1000 mb was used and four said over 1000 mb had been used in the last month. The maximum traffic given was 3061 mb although the respondent had followed it with a question mark.

**Q18 How much Internet traffic has your organisation had this month?**  
*(approximate)*

There were 54 responses to this question and the comments about measurement of traffic in question 16 also apply here. This time seven respondents said the question about the amount of Internet traffic they had had this month did not apply to them or they had had nil. Sixteen respondents had no idea about the traffic volume.

As in the two previous questions, measurement details were given in hits, by hours and in megabytes. Two respondents reported their organisations had received 15-20 hits and 400 hits in the current month. Those that measured the traffic in hours said 4, 8 and approximately 20 hours had been used in their organisations in the month surveyed. Four respondents measured the traffic in megabytes with nine reporting less than 10 mb used, seven respondents reported between 10 and 100 mb, six reported

usage of between 101 and 1000 mb and four reported over 1000 mb of usage in the current month with the maximum amount of traffic stated being 2,500 mb.

It appears from an analysis of the respondents' responses in questions 16 to 18 that they are not paying much attention to the amount of Internet traffic. If it is possible that the numbers of respondents who didn't reply to these questions failed to do so on account of not knowing the traffic volume and they are added to those who admitted to having no idea as well as those that said not applicable, then in each case 58%, 53% and 63% of respondents over the last two months, last month and current month respectively lack this information.

When the information given by the remaining minority of respondents is analysed, no trends emerge. Those who reported on the current month's usage were six fewer than the previous month, so it was difficult to predict whether the usage was increasing over the period. The number over the 1000mb category stayed constant and the numbers in the below 10mb category rose slightly but the two categories in between experienced a drop.

#### **Q19 What is your organisation's policy for Internet use by employees?**

The question asked what the respondent's organisation's policy for Internet use by employees was. This was open ended and the 67 responses were then categorised as free access to all employees, approval required, no policy yet, access not allowed, work related access only and limited staff access. It is unclear whether the 17 missing responses are from organisations that do not have an Internet policy or not.

The first of the six categories had the most respondents. Some of the twenty responses from those who commented that their organisation's policy was free access to all employees were, "Open with standard moral and legal provisos eg pornography, terrorism etc" and "free use, openly encouraged." Some respondents' organisations had free access but some provisos eg "open as to what information is accessed (part of the training to get them used to using the Internet), strict security policy for any information downloaded accessible on our network", "available to all- but used within reason" and "all browsing OK- no download of games/executables."

Five respondents said staff needed approval for Internet access eg "Employees can have access as long as a valid business reason is provided and approved" and "on request with justification."

Another group of ten respondents said their organisation had no policy yet eg "Has not been worked out yet (but company encourage employees to use email as much as possible instead of phone conversations)", "no policy- common sense" and "employees must adhere to the organisation's code of conduct. This policy is being rewritten to ensure the use of Internet is included."

Only two respondents said use of Internet was not allowed eg "Internet is not to be used." Since the organisation currently has Internet, this comment seems rather puzzling. Perhaps the use of it is not available for the employees, just management.

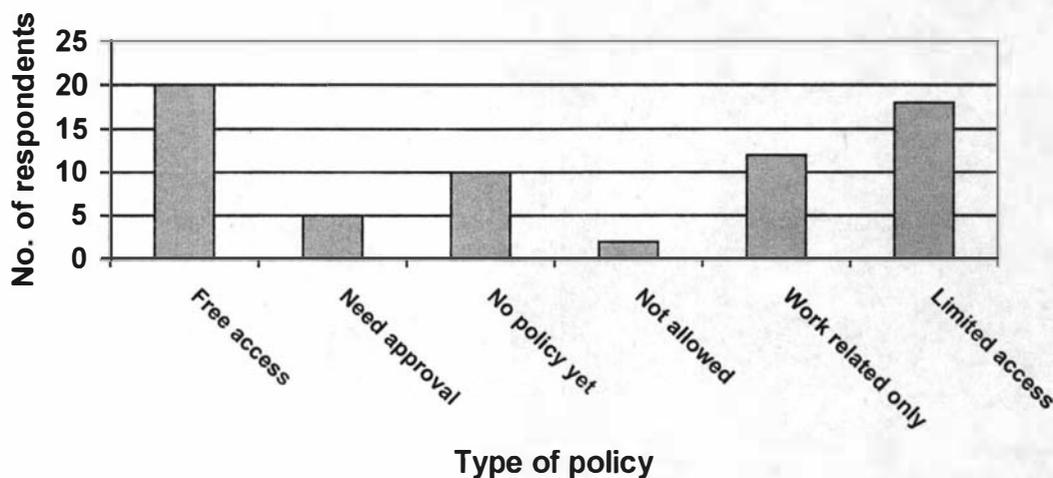
Twelve respondents said Internet use was allowed if it was work related eg "for work purposes only. Comprehensive virus protection policy."

The second largest group of respondents said their organisation's policy was one of limited access. Access may be limited in terms of selected staff having access, only a few machines in the organisation having Internet capability or access was limited to non-work hours only. Some of the eighteen respondents commented, "They are free to use but only one can access at a time", "At present, only one non-networked PC has access to online Internet. Once firewall is in place, only those personnel eg marketing will have access for browsing", "one admin employee searches, sends messages etc for employees", "only those who have been trained" and "limited access- passwords not given out."

In summary it appears that while the largest group of respondents reported free Internet access within their organisation, nearly the same number of respondents didn't answer this question as those that chose the second highest category; that of limited access. It is therefore inconclusive to state a particular type of Internet policy typifies this group.

Internet policy	No. of Responses
Free access	20
Need approval	5
No policy yet	10
Not allowed	2
Work related only	12
Limited access	18

**Table 6.19 Organisations' Internet policies**



**Figure 6.19 Organisations' Internet policies**

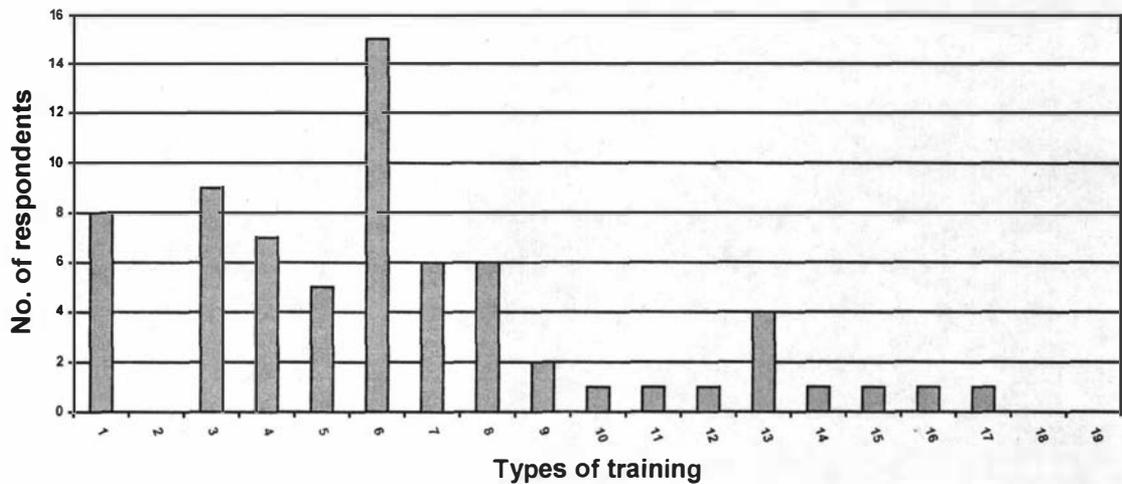
**Q20 What training has been available for employees? (eg on the job training (self-paced, by peers), printed instructions, training given by Internet Service providers etc).**

Several prompts to assist in answering the question were given but in hindsight, it would have been a sensible idea to define "on the job training" as it isn't clear from some responses whether training has been with the buddy system, with written material only or as an in-house training session (either formal or informal). The 69 responses were categorised as follows:

Cat. No.	Response Category	No. of Responses
1	On the job training only	8
2	Printed material only	0
3	Peers and in house assistance	9
4	Training from outside organisation eg ISP, seminar	7
5	Self paced, personal efforts	5
6	No training	15
7	On the job training and printed material	6
8	In house assistance and personal efforts	6
9	In house assistance and printed material	2
10	On the job training, printed material, outside assistance	1
11	On the job training, outside assistance, in house assistance	1
12	Personal efforts, printed material, outside assistance	1
13	Other (Internet help line, Internet for email only, training will be in conjunction with the implementation of an intranet, extreme basic)	4
14	In House, on the job training, none	1
15	Self paced and outside assistance	1
16	In house and outside assistance	1
17	On the job training and outside assistance	1

**Table 6.20 Internet training**

(Numbers on the figure below refer to numbers in the left hand column above).



**Figure 6.20 Internet training**

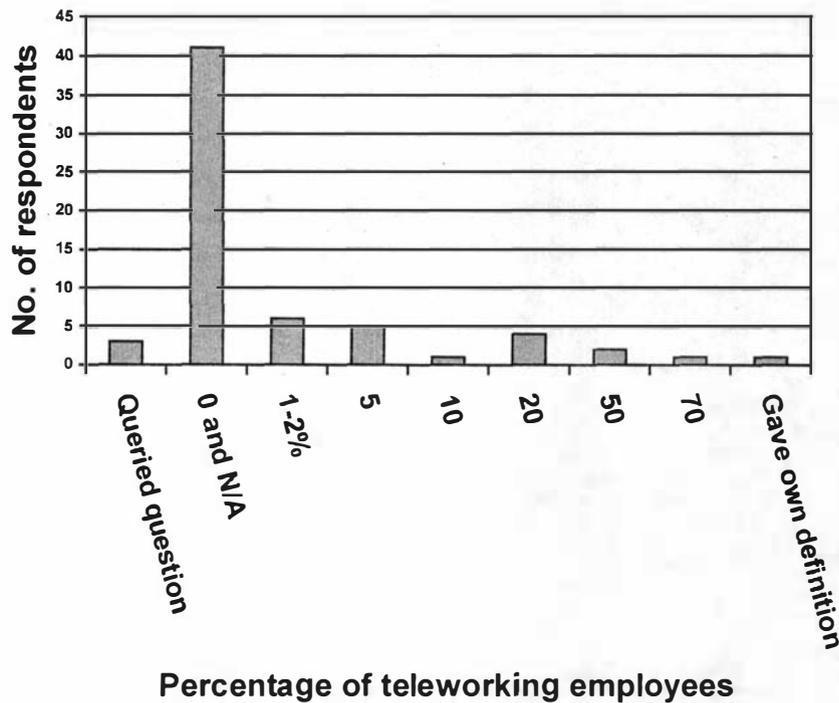
The most reported response was that no training was available to employees. When this is considered in conjunction with Q15 (lessons learnt about being online), it can be seen that a number of the difficulties could have been alleviated with some training eg home page design and maintenance, time usage, sifting and sorting information etc. The second most reported category was training on an informal basis by peers and other in-house assistance.

**Q21 What percentage of your employees telework?**

A number of respondents seemed unfamiliar with the term and as one respondent said "This term should have been defined. If this means that staff routinely use the Net for transfer of information/correspondence etc =70%." Another respondent wasn't sure either and said "on the telephone?" The researcher intended teleworking to mean "employees who work remote from their colleagues with the aid of technology." There were 64 responses which meant that there were 20 organisations sampled on the Internet whose employees didn't answer the question. This may well be because of unfamiliarity with the term.

The percentage of employees who telework	Nos of respondents	% of respondents
Respondent queried question	3	4.68
0 and not applicable	41	64.06
1-2%	6	9.37
5%	5	7.81
10%	1	1.56
20%	4	6.25
50%	2	3.12
70%	1	1.56
Gave own definition	1	1.56

**Table 6.21 No. of teleworkers**



**Figure 6.21 No. of teleworkers**

Thirty one percent of the respondents said their organisations had teleworkers and over half of them said 5% or fewer employees teleworked. A fifth of the respondents said 20% of their employees teleworked. Only two respondents said more than 50% of employees teleworked.

Sixty eight percent of the respondents (the noes and those who queried the term) said that they didn't have teleworkers. While it might have been expected that access to Internet allows more opportunity for teleworking, it does not appear from this sample that the technology is being taken full advantage of yet. It would be necessary to look at other factors relating to teleworking to investigate this further.

**Q22 How has your organisation's use of Internet affected your teleworkers?**

There were 39 responses to this particular question although 20 respondents had identified their organisations as having teleworkers in question 21. While this was initially puzzling, 30 of these had replied "not applicable/no effect/not affected/not affected yet" with some commenting "already had 'internal' IT systems for them", "Internet available over the network and not available on notebook" and "had remote access infrastructure in place", illustrating that the technology was already in place within the organisation to allow them to work remotely.

Only seven respondents named ways the use of Internet had affected teleworkers. The main way Internet had proved beneficial (seven replies) was access to and transfer of information. Replies that indicated this were, "we routinely use the Net for transfer of 70% of information/correspondence etc", "helped with email", "email facilitates

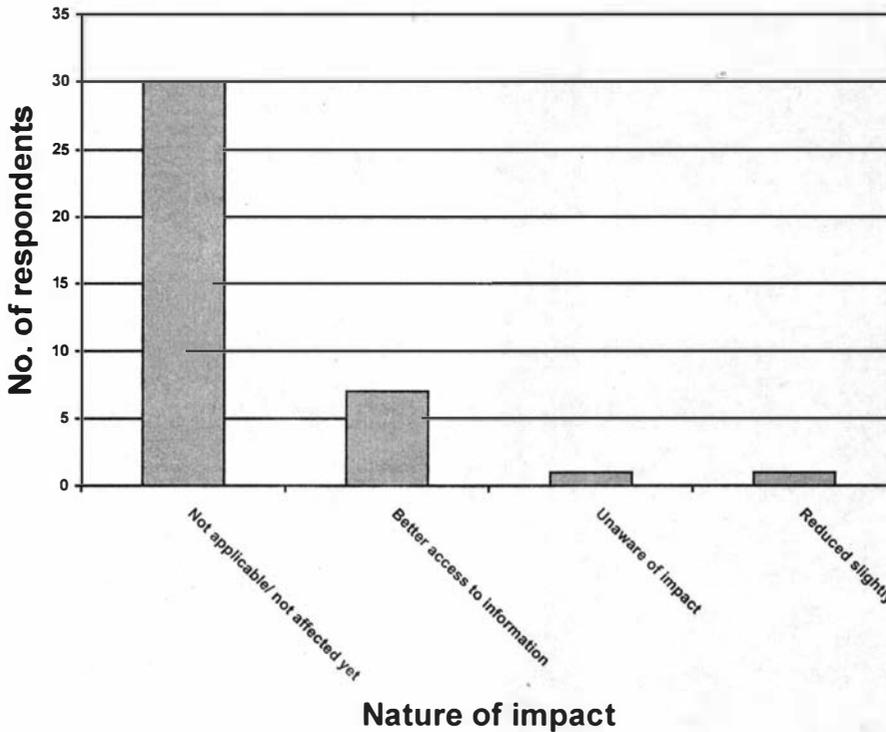
process", "access to our resources from worldwide", "Intranet access to valuable information", "improved communications" and "enhanced performance."

One respondent replied "reduced slightly." This may indicate that Internet has meant fewer teleworkers for the organisation, rather than enabling a trend towards teleworking. This seems (at face value) to be rather a surprising response. It may also mean that the workload has reduced slightly. One other respondent said s/he was unaware of the effect on the organisation's teleworkers.

This question and the previous one indicate that there is some uncertainty around the term teleworker. Internet seems to have affected less than half of those twenty organisations that said they had teleworkers in question 21. Of those it did affect, seven responses were positive and there were no negative comments.

Internet and teleworkers	No. of Responses	% of Responses
Not applicable/ not affected yet	30	76.92
Better access to information	7	17.94
Unaware of impact	1	2.56
Reduced slightly	1	2.56

**Table 6.22 Impact of Internet on teleworkers**



**Figure 6.22 Impact of Internet on teleworkers**

### **Q23 What responses have you had from organisations and individuals using the Internet to deal with you?**

There were 51 responses to this question (out of a possible total of 84 organisations that were on the Internet). Eight respondents said they had had no responses or the question was not applicable, perhaps because they didn't have a home page as indicated by "none yet- still developing presence" and another comment, "None- they take it for granted."

The largest group of respondents (32) were those who had received positive responses from organisations and individuals using the Internet to deal with them. Some responses echoed the "take it for granted" theme indicated in the previous category eg "favourable/ necessity", "clients now expect to be able to deal with us through the Internet" and "expected Internet use."

A subcategory within the positive responses related to email eg "welcomed the email access", "fast, convenient method of contact and provides a thread of communications", "response to email is good- fast and efficient", "very good- in the short period of time we have had email/Web presence, we have had several enquiries", "happy to be able to email us", "great to have access to us" and "like the presence of our Web site. Expect to deal by email not fax."

Another subcategory within the positive responses was to do with providing information through Web pages, "very positive, huge interest in data transfer", "most clients like to be able to see draft reports/complex scientific/legal information on the Net", "more professional representation and supply of information to both customers, suppliers and staff", "positive, appreciate rapid availability of information", "customers on the Net are pleased that we are also", "have had new customers from finding our corporate WWW page through search engines" and "we have a "placeholder" Web page and get 2-5 enquiries per week through this."

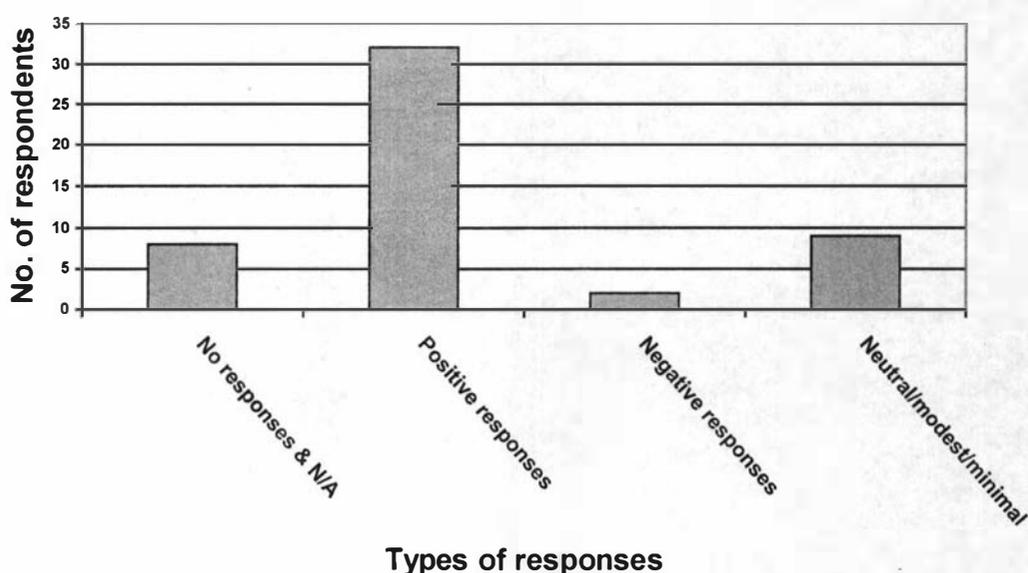
There were only two negative responses although one was more related to an ISP eg "Between crashing PCs, crashing modem and X mucking up- frustration" and another "There are some problems with data transfer to Y accounts." There were a couple of other comments that have been categorised as positive but have some negative riders, "Very positive and effective means of communication. However, reliability of Internet communication is put to question eg sometimes emails do not arrive (either way)" and "minimal (response from organisations and individuals) except when links fail for whatever reason."

Nine responses were categorised as neutral, modest or minimal eg "Critical to external communications otherwise none (ie responses from organisations and individuals) either way. Interest in customer base in Web access to our systems ie helpdesk queries, invoice details, order status etc", "once the address was available, a number of disparate questions were received" and "mediocre."

These comments illustrate that responses received by respondents from actual and potential customers were almost all positive especially regarding email and Web sites. Benefits have included sourcing new customers, being able to deliver increased customer service and the ability to send information quickly and easily. Internet has proven to be a positive business tool as perceived by individuals and organisations dealing with the organisations surveyed.

Responses from organisations and individuals about Internet use	No. of Responses	% of Responses
No responses and not applicable	8	15.68
Positive responses	32	62.74
Negative responses	2	3.92
Neutral/modest/minimal	9	17.64

**Table 6.23 Responses from individuals and organisations to Internet**



**Figure 6.23 Responses from individuals and organisations to Internet**

**Q24 What percentage of your existing customers and clients would now use Internet solely as a means of contacting you?**

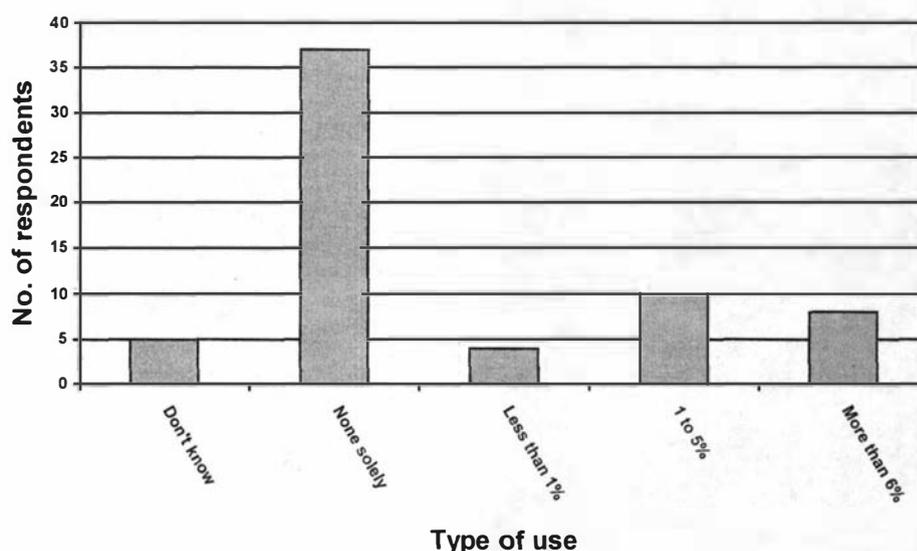
There were 64 responses from a possible 84 respondents whose organisations were on the Internet. Over half (37) replied that existing clients and customers would not use the Internet as the sole means of contacting the organisation. Some elaborated on this by saying "doubt anybody uses solely Internet", "solely? -0" and "none solely." A better way of wording this question would have been "What percentage of your existing customers and clients would now contact you solely via Internet?"

Table 24 shows the responses received and it is evident that the Internet is seen as one of a number of communication channels. Another interpretation may be that existing channels are serving present customers and clients satisfactorily and they do not see any need to change. When the responses to question 24 are considered alongside this

one, it appears that individuals and organisations say they like the use organisations are making of the Internet but they do not wish it to be the sole vehicle for dealing with the organisation.

Internet as sole means of contact	No. of Responses	% of Responses
Don't know	5	7.81
None solely	37	57.81
Less than 1%	4	6.25
1 to 5%	10	15.62
Greater than 6%	8	12.5

**Table 6.24 Internet as sole means of organisational contact**



**Figure 6.24 Internet as sole means of organisational contact**

**Q25 What sectors of the community that do not have access to or who have a strong aversion to using Internet are you aware of?**

There were 49 responses to this question, representing a response from 58% of the 84 organisations that were on the Internet and could have replied to the question. The most common response was "none" or "none that I'm aware of" with 32 responses (over half) in this category. There were a variety of comments in this category and it is difficult to judge whether in fact these categories are the same eg "none that I'm aware of", "none?", "none that I know of", "not known", "don't know" etc. The researcher has not differentiated between those people who may have said they don't know (ie haven't thought about) any sectors who lack access to or have a strong aversion towards the Internet and those who say they aren't aware of any (ie don't think there are any barriers to participation).

Some of the "no sectors" responses qualified their answers by saying "none (in our industry)", "none, the Internet is a talking point in all sorts of places- SeniorNet (retired people), voluntary groups are keen to use it. Security is an issue for many organisations especially Government", "none. We get all kinds of people using our Net access (ie age groups, gender)", "we assist our clients to use the Net effectively- none are unhappy with the decision to use the Net" and "we believe it is becoming more acceptable to all sectors."

The other 17 responses can be categorised as age, gender, socio-economic status, ethnic origin, type of work, attitude or access to computers. Six respondents commented on more than one category.

Five comments were about age eg "people 45+ years old who have not "grown up" with computers", "older age group", "probably older age group" and "older executives." Only one comment related to gender ie "women." Socio-economic status was mentioned by four respondents eg "lower income earners", "'poorer" people" and "probably lower income groups." Ethnic origin was mentioned by one respondent eg "Pacific Islands community and refugees/immigrants from third world countries."

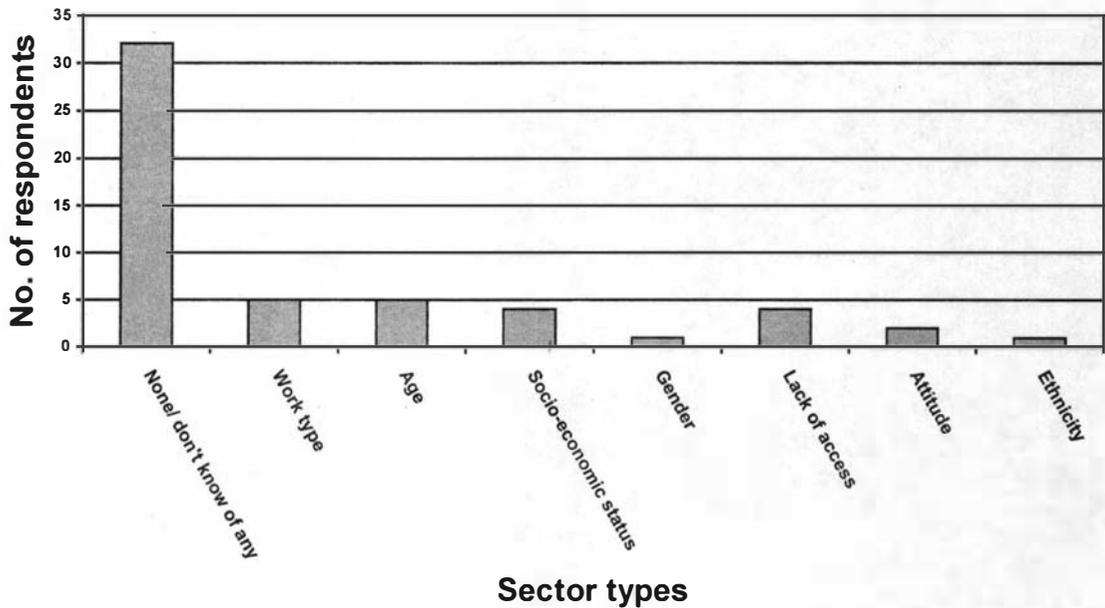
Five respondents thought that some employees and their types of work were related to having a strong aversion to the Internet eg "conservative politicians", "electrical wholesalers", "non-competitive industries", "social scientists" and "captains of industry delegate." A couple of responses were related to attitude eg "Those who think that using a keyboard automatically equates to loss of status" and "organisations focused on encouraging, enhancing and promoting active leisure, recreation pursuits- seen as "unhealthy" as a preferred type of leisure ie "surfing the Net."

Lack of access to computers was commented on by four respondents eg "Schools are one of our major customer segments but they have only very limited access", "computer illiterate", "not a great deal of people have email but unaware of any aversion" and "everyone who doesn't have a computer either at home or school or work- cyber cafes and library kiosks aren't much use to "newbies." Computer access is the issue, not age or sex."

The majority of respondents said either there were no community sectors lacking access or none that they were aware of, with a number of these providing examples to illustrate their views. They saw no real discrimination with age, socio-economic status and lack of access being commented on by several others with gender and ethnic background receiving only one comment each.

Sectors of the community lacking access or having an aversion to the Internet	No. of Responses	% of Responses
None/ don't know of any	32	59.25
Work type	5	9.25
Age	5	9.25
Socio-economic status	4	7.40
Gender	1	1.85
Lack of access	4	7.40
Attitude	2	3.70
Ethnicity	1	1.85

**Table 6.25 Sectors lacking access or having an aversion to Internet**



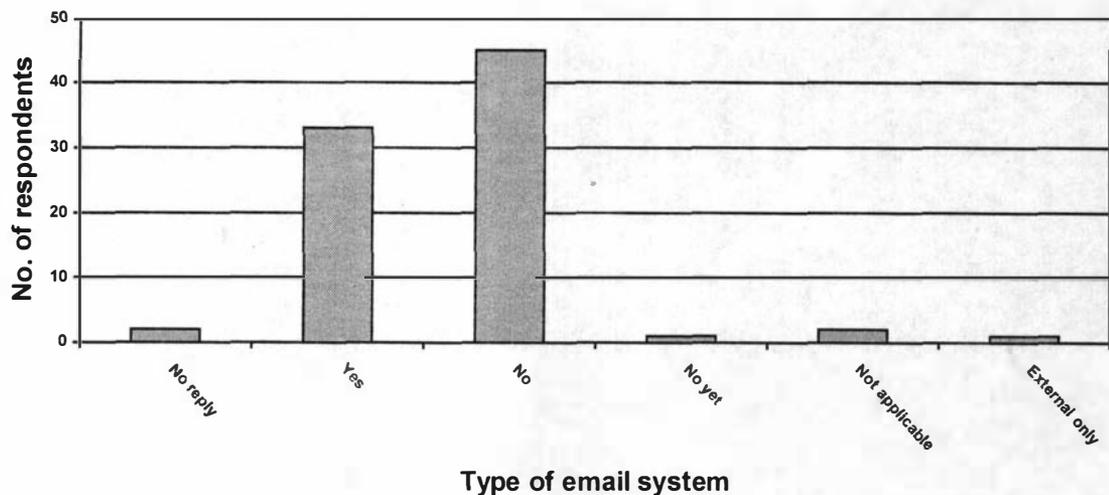
**Figure 6.25 Sectors lacking access or having an aversion to Internet**

**Q26 Do you have a separate system for internal and external email?**

This was the first of five questions on email and asked respondents whether their organisations had a separate system for internal and external mail. Of the 84 possible respondents answering this section of the questionnaire, the majority (45) said they didn't have separate systems and 33 said their organisations did. One person said they didn't have separate systems yet and another replied "no internal mail, external only."

Separate systems for internal and external mail	No. of respondents	% of respondents
No reply	2	2.38
Yes	33	39.28
No	45	53.57
No yet	1	1.19
Not applicable	2	2.38
External only	1	1.19

**Table 6.26 Separate internal and external mail systems**



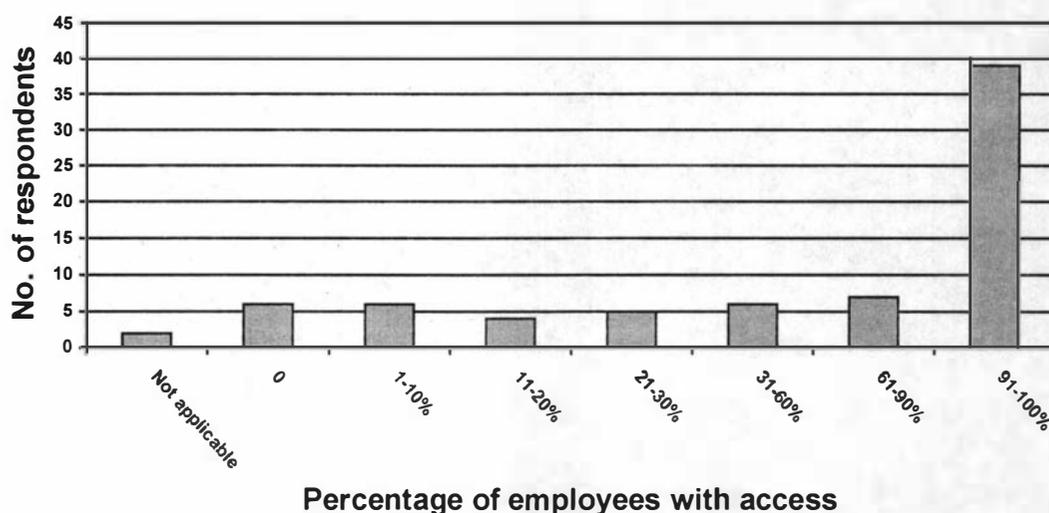
**Figure 6.26 Separate internal and external mail systems**

**Q27 What percentage of employees have access to internal email?**

There were 75 responses to this question, giving an 89% response rate of those who said they were on the Internet in question seven. Their responses indicate that just over half the organisations give all or nearly all of their employees access to internal mail with remainder tending to give less than half their employees internal mail access.

Percentage of employees with access to internal email	No. of Responses	% of respondents
Not applicable	2	2.66
0	6	8.0
1-10	6	8.0
11-20	4	5.33
21-30	5	6.66
31-60	6	8.0
61-90	7	9.33
91-100	39	52.1

**Table 6.27 Employee access to internal email**



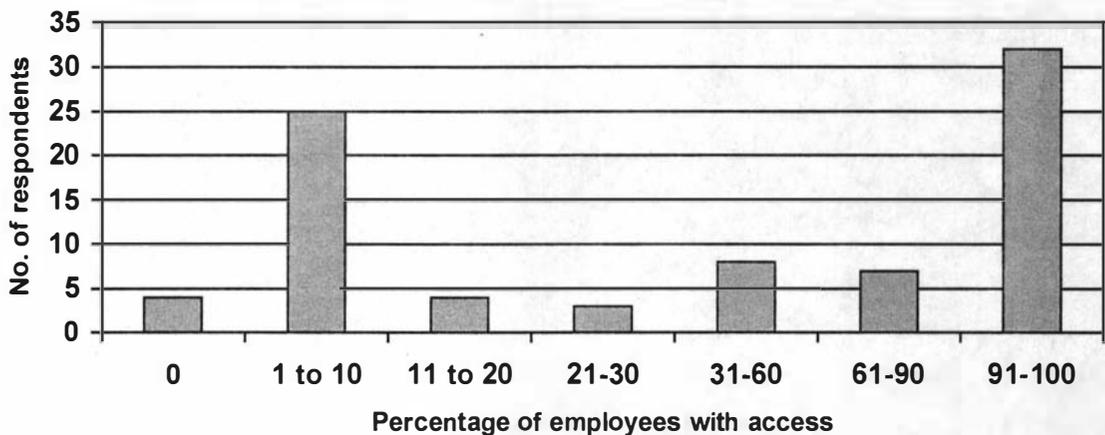
**Figure 6.27 Employee access to internal email**

**Q28 What percentage of employees have access to external email?**

All except one of the 84 respondents who said their organisations were on the Internet in question seven replied to this question, compared to the 89% response rate in the previous question relating to employee access to internal mail. The responses (in percentages) are:

Percentage of employees with access to external email	No. of Responses	% of Responses
0	4	4.76
1-10	25	29.76
11-20	4	4.76
21-30	3	3.57
31-60	8	9.52
61-90	7	8.33
91-100	32	39.28

**Table 6.28 Employee access to external email**



**Figure 6.28 Employee access to external email**

These findings mirror those of the previous question regarding allowing employees access to internal mail. The results are consistent.

**Q29 What is your policy on the use of email for personal communication in your organisation?**

This question was the fourth in a series of five about email use in the organisation, with the focus in this particular question on email policy. There were 81 responses which means that three respondents who said their organisations were on the Internet in question seven did not answer this question.

Twenty seven respondents said their organisation didn't have a policy with six of these saying they didn't have a policy *yet*, possibly indicating that they realised they needed one and were possibly in the process of designing one eg "do not have any at this time" and "at present no policy has been established." "We do not have one (policy)" has been included here but it isn't clear whether they don't have a policy because they feel one isn't necessary or because they haven't written one. Another organisation has "no set policy- all use gets monitored by the Systems Dept so we don't let staff waste IT time."

Nineteen responses indicated that free and open use of email for personal use by employees at work was acceptable eg "open slather", "Open. Everyone is free to use", "actively pursue", "available to all, no restrictions", "no constraints", "available to all, no restrictions", "it is alright for employees with access to use their own discretion as to the level of personal email", "it's not a problem" and "no problem- encourage its use. (Better than sitting on phone all day)."

There are four ambiguous responses ("nil" and "nil at present"). This could mean there is no policy or, alternatively that there is to be no use of email for personal communication within the organisation. Two other responses were not easily categorised, "Standard formal policy" and "we have an "Inbox" at Microsoft Word."

Eight responses were against the use of email for personal purposes during work time eg "shouldn't happen!", "against company policy", "disallowed", "if personal means personal study or research, no email may be used, if personal means other than the above, it is not available", "not supposed to happen", "unauthorised" and "not used except by employer." As can be seen, not all respondents mention whether there is a written policy in place that indicates personal email use in work time is acceptable or not.

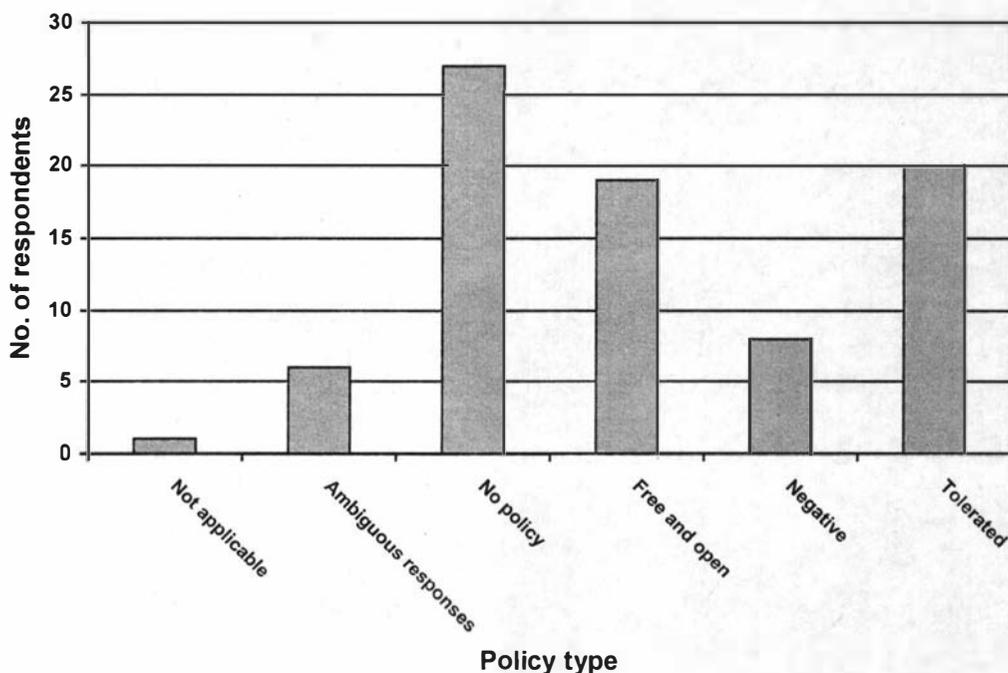
Twenty responses showed personal email in work time was tolerated often with some provisos, for example "company connection is for company business (tolerable private use)", "condoned", "acceptable at the moment, but this may change once the (number of teleworkers) increases", "as needed basis", "free use to reasonable levels", "discretionary", "inevitable, though not encouraged. Staff do know that emails cannot be considered 'private'", "keep to minimum", "none (ie no policy) (provided it doesn't interfere with work)", "OK for small occasional use", "OK, but downloading files must be virus scanned", "use when appropriate, but not exclusively eg conflicts should not be resolved via email", "not prohibited", "prefer internal email where possible (monitored)", "to be used for business purposes", "trust- use but don't abuse" and "usage must be consistent with corporate values, costs can be recovered."

One respondent said that a policy on email was not applicable to the organisation s/he worked in. This could perhaps be a sole proprietor.

In summary, the responses to this question were not always clear. The largest group of 27 respondents came from organisations that either had no policy or had none yet followed by similar sized groups of respondents at second place whose organisations either tolerated the use of email in work time (20) or had a policy (sometimes unwritten) of free and open Internet use (19). The small number of negative responses to email use make it unclear whether these have been written into policies or not.

Organisational policy on email usage	No. of Responses	% of respondents
Not applicable	1	1.23
Ambiguous responses	6	7.4
No policy	27	33.3
Free and open	19	23.4
Negative	8	9.87
Tolerated	20	24.69

**Table 6.29 Policy on email for personal use at work**



**Figure 6.29 Policy on email for personal use at work**

**Q30 Who, other than the employee, is able to access the employee's email?**

There were 75 replies to this question and two of these responses covered two categories. The six categories were: not applicable, no one, technical staff, those who know the password, anyone with access and a select group.

Thirty one respondents said no one could access the email except that employee eg "Nobody. (Of course, if the employee will disclose their password to another person, the last one will be able to access the email)" and "Theoretically it could be intercepted, but it is in no way monitored or accessed."

One person said "not applicable" and the other "?" indicating that perhaps they were unsure of the answer.

Twenty two responses referred to a technical person having access eg "Emails are not considered 'private' so Computer Centre staff may access- in reality they would only do so if directed by a senior manager as a result of some concern", "Sys admin- with employee permission", "Systems administrators with appropriate security clearance", "Systems admin. Only if corruption etc (with employee's knowledge)" and "systems administrators, although policy on this is under review."

Eight responses said those who knew the password would have access eg "All staff are able to use each other's email provided they know the password- which in this office is the same for all stations", "Anyone to whom the employee grants access (internal mail only)", "depends on whether the employee chooses the password protect", "anybody who knows their password!" and "anyone who knows a person's password and any staff who might be a hacker."

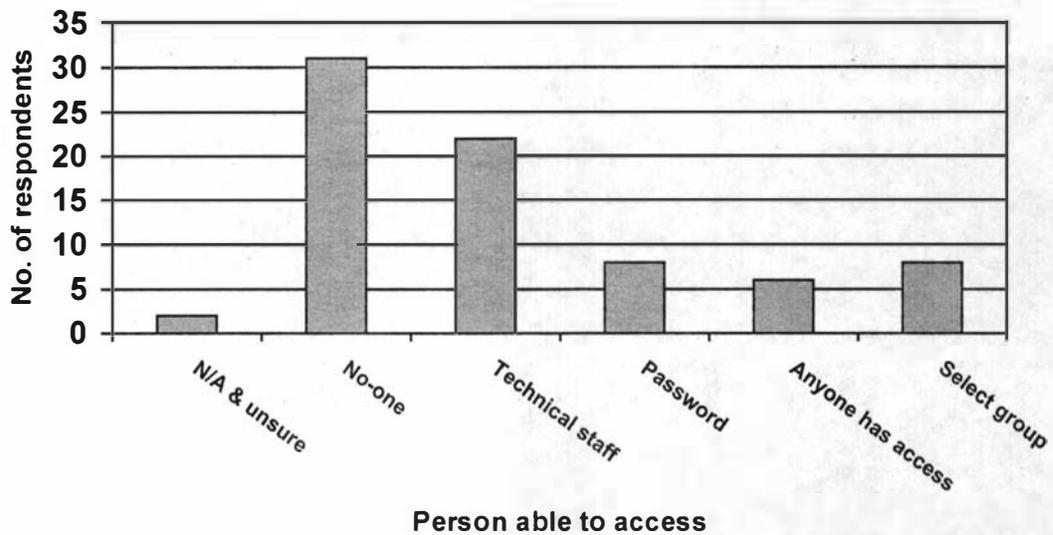
Six responses said anyone could access the employee's email eg "All office workers", ""Internet is set up on individual PCs until we sort out the security issues. Each PC is available to people within a workgroup. Everyone in the workgroup can read the email on the PC they use" and "all email is able to be accessed by other professional staff."

The final group of eight responses were that a select group in the organisation had access such as management, technical and/or secretarial staff eg "directors", "in some instances, secretaries", "secretarial and technical staff" and "supervisor."

In summary, nearly forty percent of respondents said nobody but the employee could access his or her email. Those who could access the email were technical staff at 28% with other replies much further down the list. This finding indicates a high level of security for employees' personal email. While this question was concerned with accessing and reading other employees' email, a related issue is who signs the emails. As emails are becoming official documents, the manner and style of signing are important aspects for organisations to consider and set policy on.

Ability to access employee's mail	No. of Responses	% of respondents
Not applicable and unsure	2	2.59
No-one	31	40.25
Technical staff	22	28.57
Those who know password	8	10.38
Anyone has access	6	7.79
Select group	8	10.38

**Table 6.30 Access to employee's email**



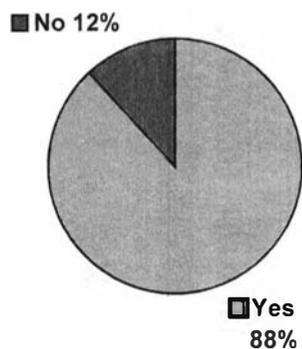
**Figure 6.30 Access to employee's email**

**Q31 Do you have a Web browser? If so, which do you use?**

This question was the first of two about Web browsers. The first part of the question asked respondents whether they had a Web browser. Seventy four said yes and ten said no accounting for the 84 respondents online. Those who had a Web browser were asked which they used. Four didn't reply and the 70 responses were: Netscape Navigator (40), Microsoft Internet Explorer (13), both Netscape and Internet Explorer (10) and both Netscape and Mosaic (2). The search engines Metacrawler and Netscape Excite were each mentioned by one respondent, and the Internet Service Provider (Clearnet) by another respondent. The other two replies were from a respondent who said s/he hadn't used a search engine and another who nominated Personal Explorer, whatever that may be. The brand name only was mentioned by the majority of respondents with only 14 specifying what version they used.

Web Browser	No. of respondents	% of respondents
Yes	74	88.09
No	10	11.9

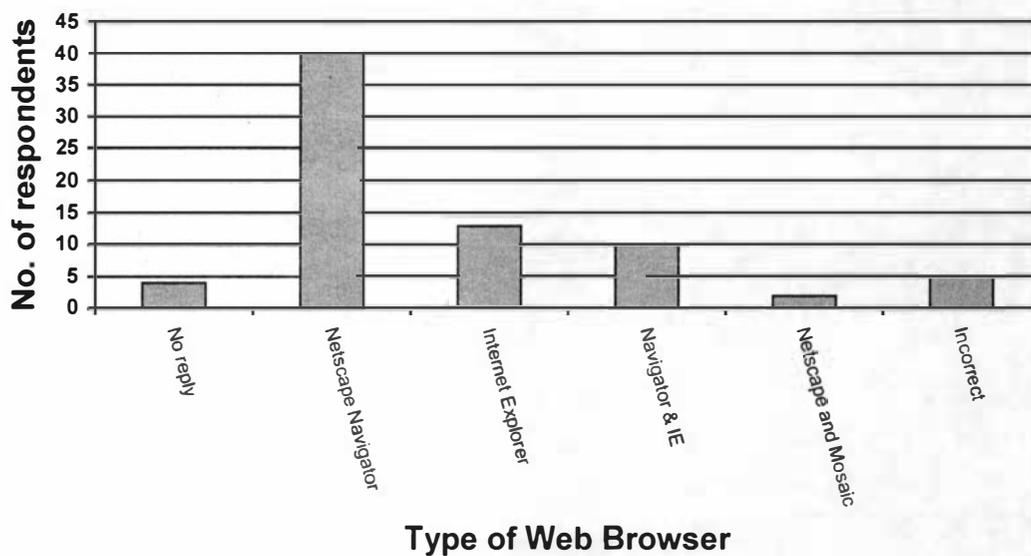
**Table 6.31 Web browser**



**Figure 6.31 Web browser**

Type of Web browser	No. of Responses	% of respondents
No reply	4	5.4
Netscape Navigator	40	54.0
Internet Explorer	13	17.56
Netscape Navigator and Internet Explorer	10	13.51
Netscape and Mosaic	2	2.7
Incorrect response	5	6.75

**Table 6.31.1 Type of Web browser**



**Figure 6.31.1 Type of Web browser**

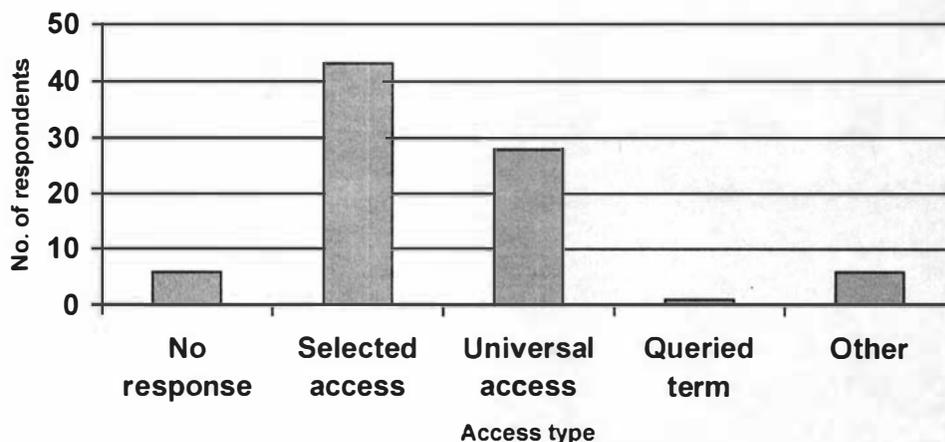
**Q32 Do you have universal or selected staff access to the Internet? (Please tick the appropriate box)**

There were 78 responses, which meant that six respondents whose organisations were on the Internet omitted to answer this question. The responses can be classified as follows: 43 have selected staff access to the Internet, 28 have universal staff access to the Internet, one person queried the question and there were six who commented as follows: "universal on separate PC LAN, selected on desktop pilot group", "universal- if they wanted to learn how to use it", "universal- in the sense that anyone can use the PC that has the Internet setup", "universal- email, selected-only one station has browser", "will have selected" and "universal- but on designated stations."

These responses show that the majority of respondents' organisations have selected access to the Internet.

Staff access to Internet	No. of Responses	% of Responses
No response	6	7.14
Selected access	43	51.19
Universal access	28	33.33
Queried term	1	1.19
Other	6	7.14

**Table 6.32 Staff access to Internet**



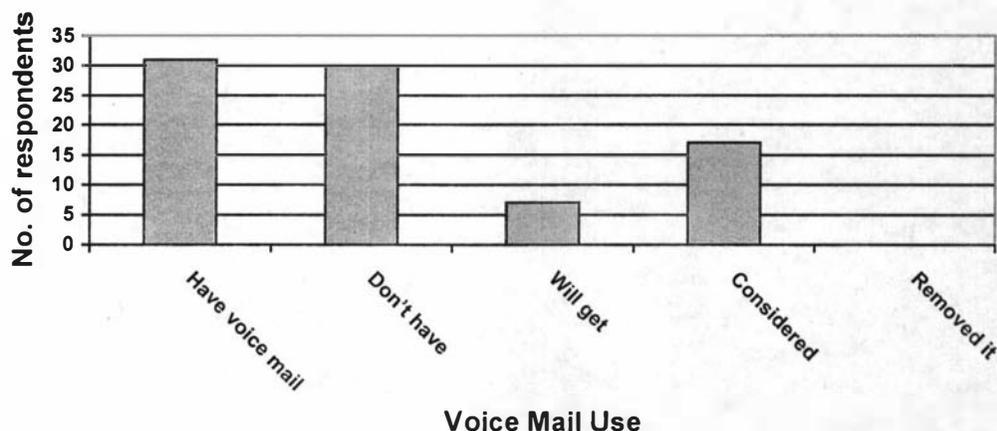
**Figure 6.32 Staff access to Internet**

**Q33 Does your organisation have voice mail?**

This was the first of two questions about voice mail. The question was "does your organisation have voice mail?" and five possible responses were indicated: yes, no, will get it, considered and didn't proceed and had it and removed it. Five respondents said that they didn't have voice mail and would get it. Table 33 shows the 85 responses. This indicates that the organisations surveyed were evenly split between whether they had voice mail or not. More organisations had considered and hadn't proceeded with buying and installing voice mail than were going to get it.

Possible Responses	No. of Responses
Have voice mail	31
Don't have voice mail	30
Will get voice mail	7
Considered voice mail and didn't proceed	17
Had voice mail and removed it	0

**Table 6.33 Organisational use of voice mail**



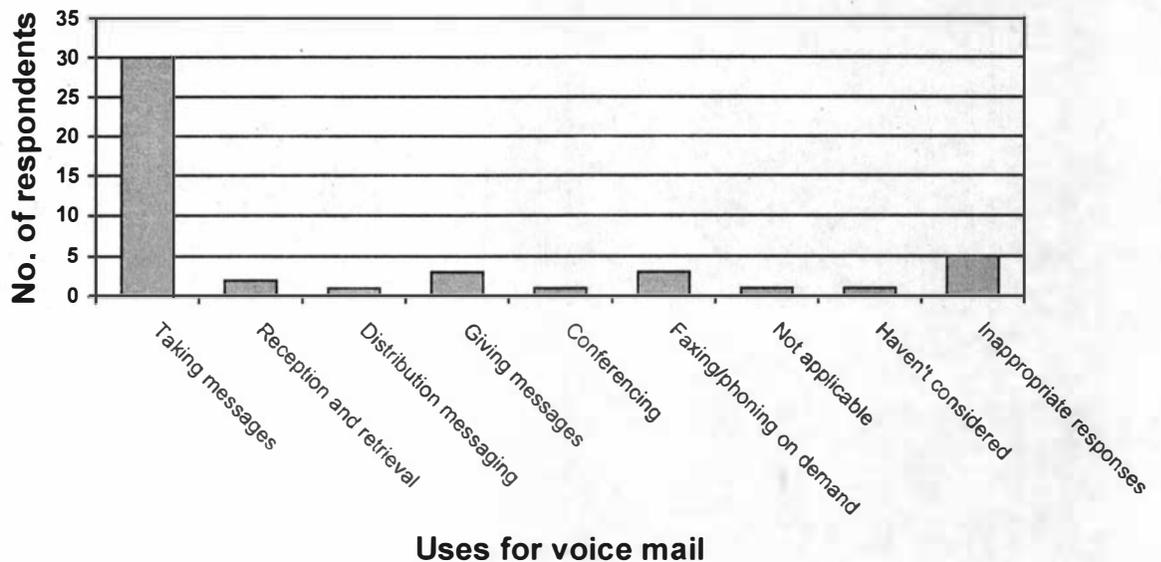
**Figure 6.33 Organisational use of voice mail**

**Q34 If you do have it (voice mail), what are the main functions it is used for?**

Those respondents who had voice mail were asked about the main functions it was used for. There were 47 comments from 36 respondents. The responses to the previous question revealed that 31 respondents had voice mail in their organisation so there appears to be some discrepancies in the response rate to this question.

Uses for voice mail within organisations	No. of Responses	% of Responses
Taking messages	30	63.82
Reception and retrieval of information	2	4.25
Distribution messaging	1	2.12
Giving messages	3	6.38
Conferencing	1	2.12
Faxing/phoning on demand	3	6.38
Not applicable	1	2.12
Haven't considered	1	2.12
Inappropriate responses	5	10.63

**Table 6.34 Voice mail uses**



**Figure 6.34 Voice mail uses**

The majority of comments (30) were related to taking messages (including on cell phones) with two to do with reception and message retrieval. One mentioned "distribution messaging" and three were about giving messages, "informing incoming call of person's movements/availability on a daily updated basis", "out of office message to incoming caller" and "providing information to callers." One respondent mentioned "conferencing" and three said "faxing/fax on demand." Another person said "not applicable" and another "haven't considered." There were five responses that were hard to categorise and didn't answer the question in the anticipated manner. These were "effective communications to those without or unable to use email", "have capability- but don't want to use trunk capacity this way", "provides holding queue", "plans are for back-up/support to main personal switch" and "telephone system separate from computer systems. Voice mail is just an adjunct to phone systems."

*Questions 35-50 were answered by respondents who indicated in question 7 that their organisation was not on the Internet (36 respondents).*

**Q35 Has your organisation considered being on the Internet? (please tick appropriate box)**

Four possible answers were given with space to tick in the appropriate box and space given to state any other reasons. There were 37 responses. Of the 36 respondents who said their organisation wasn't on the Internet in question seven, 35 answered this question. Two people whose organisations were on the Internet replied, both saying they had considered being on the Internet and were still thinking about it. This may mean that they were thinking about email back at question seven and were thinking about the WWW at question 35.

The four possible responses were: yes and decided not to, yes and still thinking about it, no and not relevant to us and no but could be relevant to us. Those who responded "no and not relevant to us" were told to skip to the end of the questionnaire.

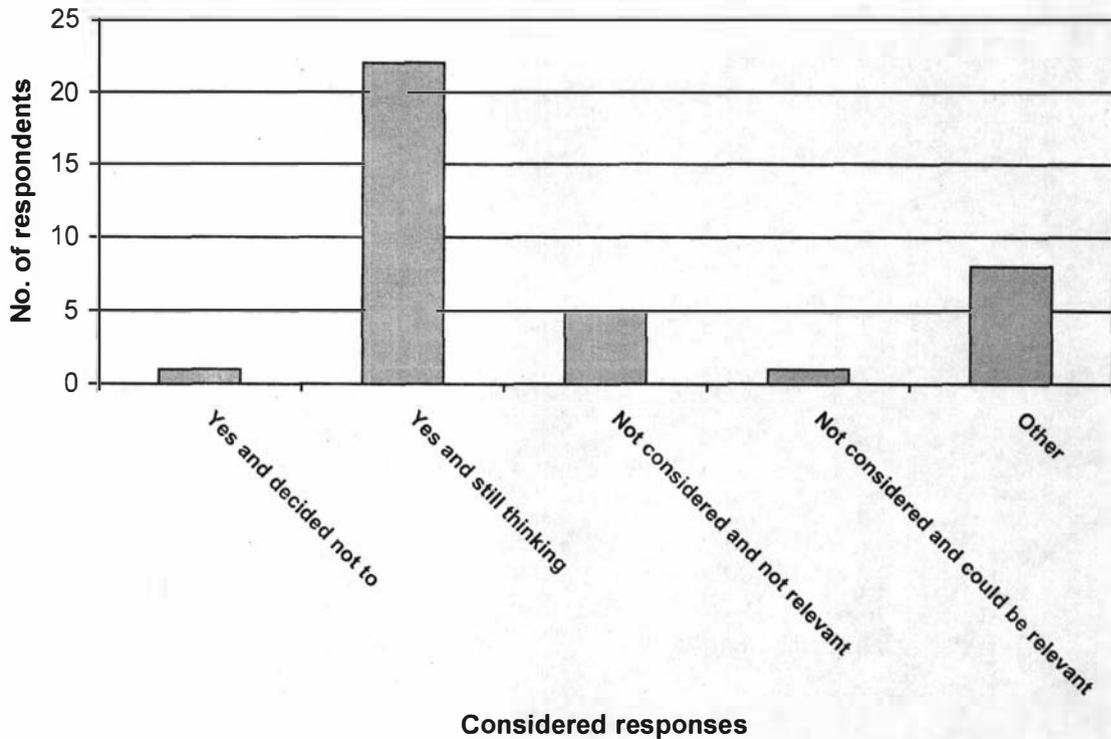
There were eight responses in the other category and these included "we have not discussed it in depth but will never be on Internet because we will not use computers." Question 36 revealed the respondent's beliefs as a traditional conservative Christian were the reason for this. S/he did not tick the "no and not relevant box" above and probably should have. (Perhaps s/he wanted to complete the rest of the questionnaire and didn't fancy jumping to the end). Two responses were "yes and is going to connect in 1997" and "yes and decided to." It probably would have been a good idea to have included a "yes and going to connect soon" category to cover this type of response.

Other responses in a similar vein were, "we have decided to but are waiting for time to update to a larger computer", "yes and e-mail only considered", "Company has decided to go on subject to Board approval within next few days", "current secretary does not have access otherwise would be on it, however difficulties arise when officers change" and "we are currently involved in a major strategic review which will dictate our final position."

It is significant that of the total questionnaire sample (120) almost all respondents (114) were either on the Internet or thinking about it or and/or could see relevance to them. Only two respondents hadn't thought about it and it wasn't relevant, which seems rather odd as presumably they would have had to consider it to find it not relevant!

Consideration of being on Internet	No. of Responses	% of Responses
Yes and decided not to	1	2.7
Yes and still thinking	22	59.45
Not considered and not relevant	5	13.51
Not considered and could be relevant	1	2.7
Other	8	21.62

**Table 6.35 Considering Internet for organisation**



**Figure 6.35 Considering Internet for organisation**

**Q36 What were the factors you considered about connecting to the Internet?**

Respondents were given a list of eight factors (some positive and some negative) to indicate which factors their organisation had considered when thinking about connecting to the Internet.

Of the 36 questionnaire respondents whose organisations weren't on the Internet, 26 identified factors they had considered when thinking about becoming Internet connected as an organisation with 23 people naming more than one factor. Cost was the major factor for 84.6% of respondents with a variety of applications and uses at 73% and other reasons named by respondents at 53.8%. The other factors considered by respondents and their organisations about getting online were all selected by less than 50% of respondents. In descending order these were security of information (42.3%), human factors (30.8%) closely followed by speed of doing business (30.7%), and disruption when implementing and stress of new technology both at 26.9% each. Only 3.8% (one respondent) selected social issues as a factor that played a part in their

decision making process. This low concern seems reflected in the responses gained from another question in the questionnaire (Q45 on sectors of the community who do not have access to or who have a strong aversion to using Internet). It is interesting to note that while the prominent consideration (cost) was a negative factor, the second one was positive benefits of being connected.

There was also space for respondents to list other factors they considered about connecting to the Internet. Fourteen respondents took the opportunity to do this and they were:

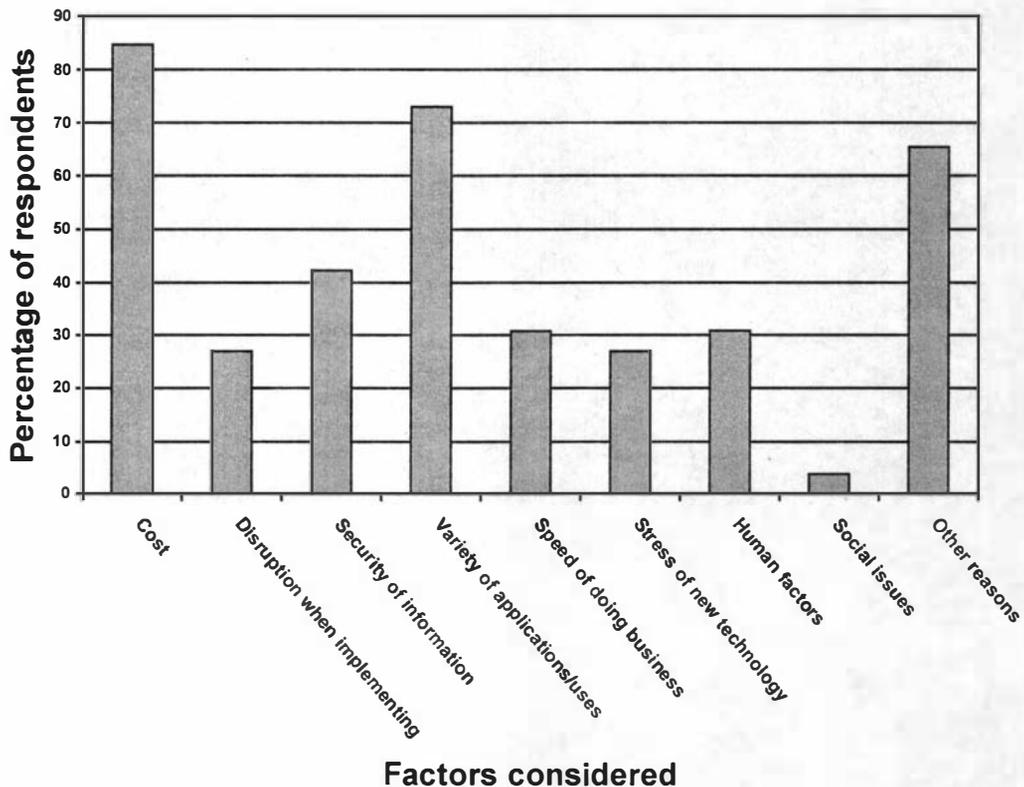
- "Internet is viewed at this point as a marketing promotional opportunity. It has therefore been considered along with advertising and other promotional activities"
- "State of development in our business arena"
- "advantages to be gained in NZ market"
- "currently sourcing software/hardware to implement new PC based system, currently running on a mainframe"
- "difficulty with continuity of operating when secretary changes, differing access to technology and individuals' skills and interest in the Internet"
- "how we could improve customer service"
- "misuse of valuable time"
- "my beliefs as a traditional conservative Christian"
- "not required for our operation"
- "reasons not known"
- "requirements of overseas working patterns"
- "staged or turnkey implementation"
- "the benefits-what are they? acceptable use"
- "we are currently undergoing a major structural review"

This question was not answered by ten of the respondents whose organisations weren't on the Internet. Four were still thinking about getting connected, two had not considered being on the Internet and felt it wasn't relevant to them in any case, one had decided not to proceed with connection and three gave no indication whether they had thought about it or not.

As respondents could tick more than one reason, table percentages are greater than 100%.

Factors considered	No. of Responses	Percentage of respondents who named this
Cost	22	84.6
Disruption when implementing	7	26.9
Security of information	1	42.3
Variety of applications/uses	9	73.0
Speed of doing business	8	30.7
Stress of new technology	7	26.9
Human factors	8	30.8
Social issues	1	3.8
Other reasons	14	53.8

**Table 6.36 Factors considered for Internet connection**



**Figure 6.36 Factors considered for Internet connection**

Question 36 can be compared with question 9 in which respondents whose organisations were already on the Internet were asked about the determining factors in their decision to connect. In the earlier question however, respondents were not given the prompts that they were in this later one.

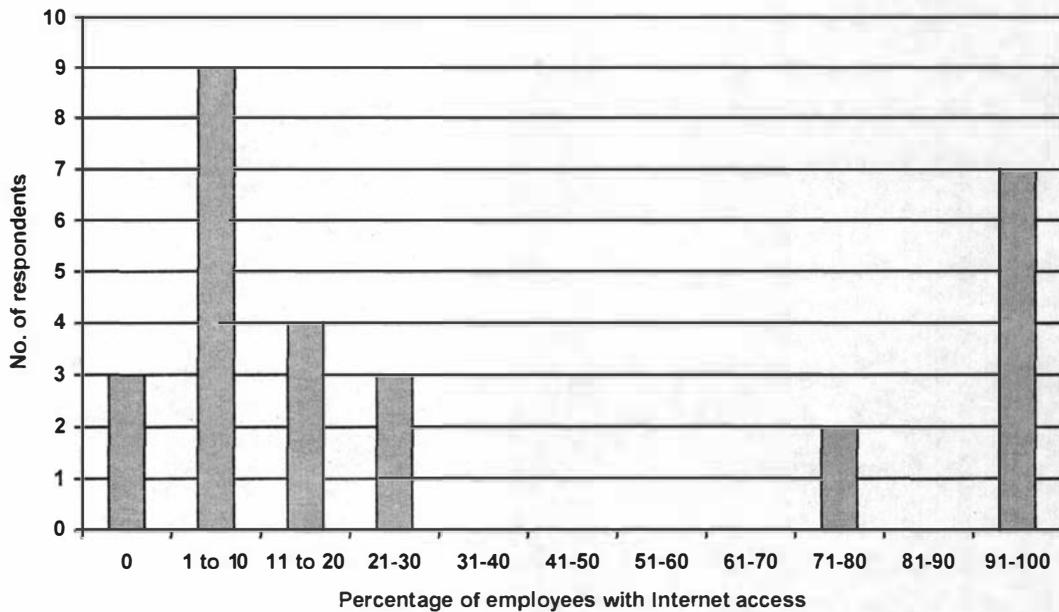
The majority of responses appear to coincide as 55% of respondents in question 9 named information and communication as a key factor and 73% of those respondents not already on the Internet said that they had considered a variety of applications or

uses as a factor for connecting. It is hard to arrive at any definitive conclusions based on the questionnaire results when comparing these two respondent groups, but it does appear that there is some evidence to support the conclusion that organisations currently on the Internet and those considering connecting give little thought to the human resource development staffing issues, the social implications for potential customers and clients and the process of developing an online presence.

**Q37 What percentage of your employees would you consider allowing access to the Internet?**

Percentages of employees who would be allowed Internet access	No. of organisations who would have this percentage access	% of organisations
0	3	10.71
1 to 10	9	32.14
11 to 20	4	14.28
21-30	3	10.71
31-40	0	0
41-50	0	0
51-60	0	0
61-70	0	0
71-80	2	7.14
81-90	0	0
91-100	7	25

**Table 6.37 Percentages of employees who would have Internet access**



**Figure 6.37 Percentages of employees who would have Internet access**

There were 31 responses to the question and 28 of these specified the percentage of their employees who had Internet access. Three other responses were "rules will be

implemented- details not known yet", "100% email, 10% browsing" and "not applicable."

When these 28 responses from organisations not on the Internet are compared to responses in question 11 from those respondents whose organisations were already on the Internet, some interesting observations emerge. Whether organisations were on the Internet or planning to be at some stage, there was a tendency for either all or hardly any employees to have access. This was more noticeable in the organisations still to get online with 68% of respondents falling into the 0-10% and 100% access bands. The corresponding percentage for organisations already on the Internet was 73%.

**Q38 What type of employees would that be (eg technical, clerical, support, managerial, research etc?)**

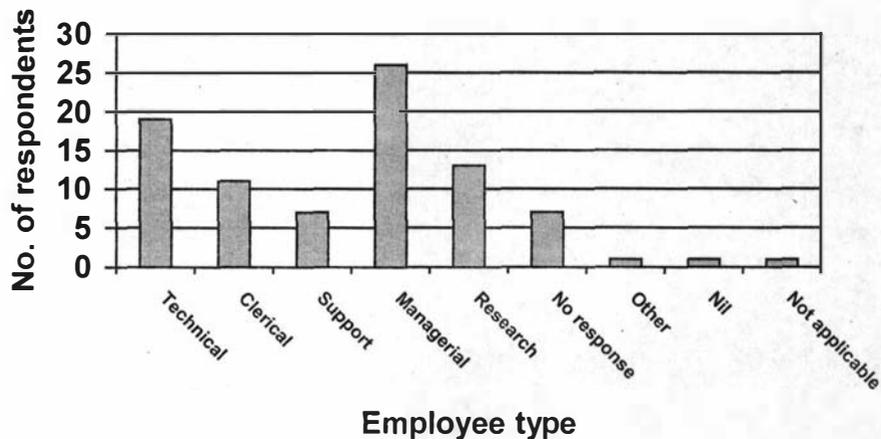
This question followed from the previous one and asked respondents what type of employees would be allowed access to the Internet. Twenty nine of the 36 respondents whose organisations weren't on the Internet answered this question. Five employee types were suggested in the question and space was left for other comments. The responses are given in table 6.38.

Other responses given when asked what other types of employees would be allowed access were from three respondents- "nil", "fundraising and health promotion" and "not applicable." A number of respondents gave more than one group of employees who would be allowed access to the Internet.

Managers were most likely to gain Internet access in a company even when respondents were given the ability to tick more than one employee group.

Internet access by employee type	No. of Respondents	% of Responses
Technical	19	22.09
Clerical	11	12.79
Support	7	8.13
Managerial	26	30.23
Research	13	15.11
No response	7	8.13
Other	1	1.16
Nil	1	1.16
Not applicable	1	1.16

**Table 6.38 Possible Internet access by employee type**



**Figure 6.38 Possible Internet access by employee type**

**Q39 What would your organisation use the Internet for? (Please rank in order of importance in boxes provided)**

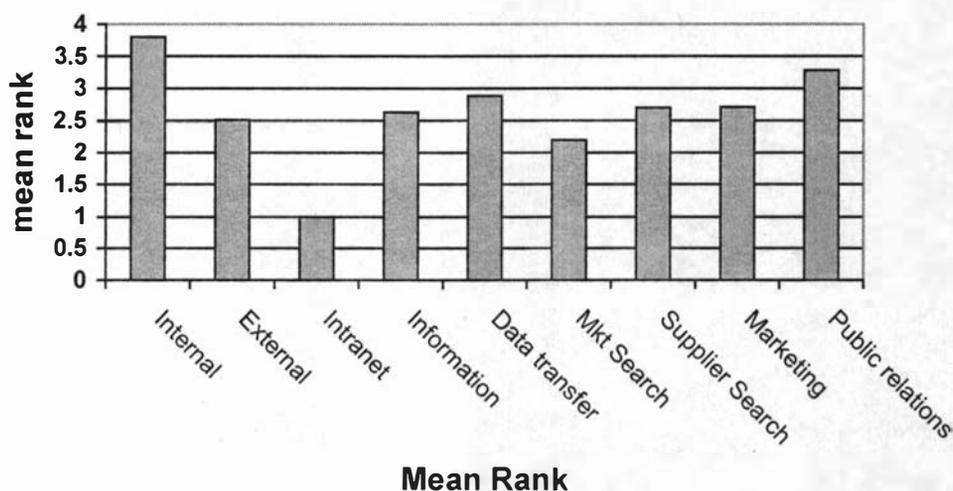
This question asked respondents what their organisation would use the Internet for. (The nine set categories and "other" category were used earlier in the questionnaire with the 84 respondent organisations that were already using it. These were question 12- "what does your organisation use the Internet for" and question 13 "how do you see the Internet being used by your organisation in the future?")

The question asked respondents to rank in order of importance their organisation's use of the Internet in the future. As in questions 12 and 13 earlier, some respondents ticked several boxes so the researcher has decided that they ticked all boxes they saw as being relevant so their scores have been averaged. Responses written as "nil" have been coded as 0. In addition to one "not applicable" comment, one respondent said "access to internal system- client/server by external parties" and another "we are implementing internal and external email."

The responses show that external email and information collection rank first and second in importance as they did in questions 12 and 13.

Internet Future Use Ratings	.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	7	8	9	Sum	Mean Rank
Internal Email	0	0	0	3	0	1	2	1	0	1	0	1	1	0	0	10	3.8
External Email	0	3	3	7	0	7	2	4	0	0	0	0	0	0	0	26	2.51
Intranet	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	1.0
Information Collection	0	3	1	7	0	7	2	2	0	0	0	1	0	0	0	23	2.63
Data transfer	0	0	0	4	0	3	0	1	0	1	0	0	0	0	0	9	2.88
Searching for new markets	0	3	1	3	0	3	2	0	0	0	0	0	0	0	0	12	2.20
Searching for new suppliers	0	0	1	3	0	4	1	1	0	0	0	0	0	0	0	10	2.7
Marketing through a home page	0	1	1	3	0	8	2	1	0	0	0	0	0	0	0	16	2.71
Public relations	0	0	1	1	0	7	1	2	0	2	0	0	0	0	0	14	3.28
Totals	0	10	8	31	0	42	13	12	0	4	0	2	1	0	0	122	

**Table 6.39 Possible organisations' potential uses of Internet**



**Figure 6.39 Possible organisations' potential uses of Internet**

**Q40 What policy would your organisation have for Internet use by employees? (eg time, money, access)**

This question mirrors question 19 about the organisation's policy on Internet use for organisations already on the Internet. There were 29 responses and it is interesting to find that the categories used in question 19 don't apply so readily in question 40. The later question did however have three prompts that the previous one didn't.

No respondents in question 40 mentioned that employees would have free access whereas 30% did in question 19. Perhaps this sign of caution is a reason why they are not already on the Net.

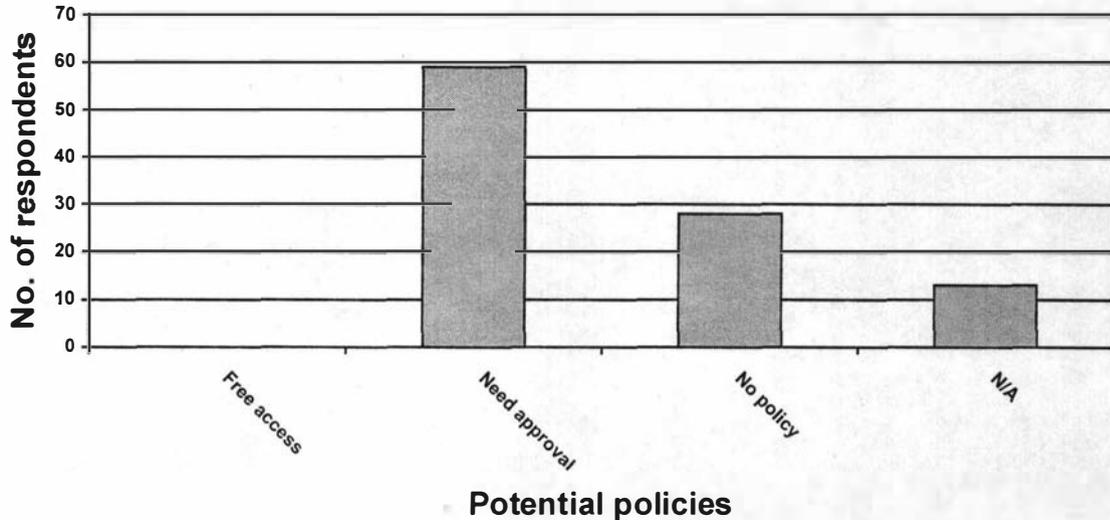
"Need approval" was mentioned by 7% of respondents in question 19 and while no respondents to question 40 said that employees would be prohibited from Internet access, 59% cited some definite limits they thought would apply to future use. One limitation was the computer used "access to standalone computers- not connected to the LAN" and "Employees to use only standalone PC with logged passwords." The second limitation was to do with employee position, "only allow access to people who have a need for it and are responsible staff", "restricted to email except for some specific users" and "would be determined by contractual requirements." The third limitation was for business use only, "to be used during work hours for work only" and "company computers are to run company programs on to do company work." This latter group (31% of respondents) corresponds with 18% of respondents whose organisations were already on the Internet in question 19.

Thirteen percent of respondents whose organisations were on the Internet in question 19 said their organisation didn't have an Internet use policy yet. There were 28% in the group of respondents who weren't on the Internet who said they didn't have a policy yet. It is, in fact, likely that 100% of this group don't have a policy yet and have no need for one. The 28% just tended to state they didn't have a policy and didn't venture any opinions on what would be in one in the future, unlike some of the other respondents.

The final 13% of respondents to this question found the question not applicable or commented on time and cost constraints. The final comment is from one respondent who took a more rational view of employees and their autonomy: "We will make it the responsibility of the user to manage the time/cost trade-off along with their other job requirements and responsibilities."

Internet policy	No. of Respondents	No. of Responses in percentages
Free access	0	0
Need approval/some limitations	17	59
No policy or thoughts about one yet	8	28
Not applicable/time/cost constraints	3	13

**Table 6.40 Potential organisations' Internet policies**



**Figure 6.40 Potential organisations' Internet policies**

**Q41 What training would you provide? (eg on the job training (self-paced, by peers), printed instructions, training given by Internet Service Providers etc)**

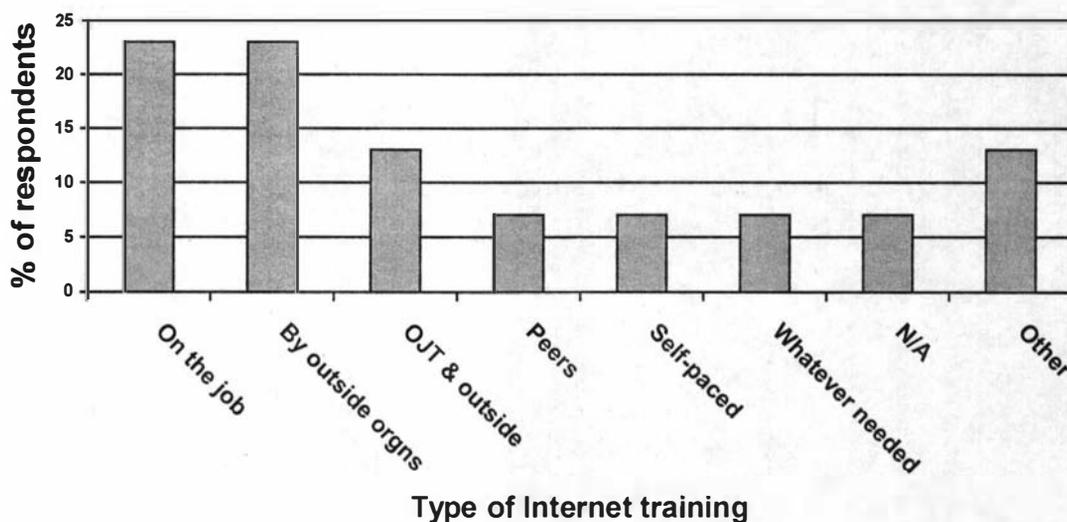
This question asked what training the respondent's organisation would provide if they gained Internet access and gave prompts on the possible types of training. (This mirrors question 20 about the training available for employees in organisations already on the Internet). As has been observed in question 20, the term 'on the job training' required a clear definition as it seems to have been used by respondents to cover a range of options from informal training by peers, training in the workplace in work hours and with written materials.

There were a total of 36 possible respondents to the questionnaire and 30 answered. Bearing in mind that respondents were asked to consider a hypothetical situation, their answers favoured equally strongly on the job training and training from an outside organisation (23% each), followed by a combination of on the job training and outside assistance (13%). There were four categories at nearly seven percent each, which were by peers, self-paced and personal efforts together, whatever is necessary or required and not applicable to us yet. These last two categories do highlight the uncertainty expressed in other questions by respondents who aren't on the Internet yet and are unsure what that would entail for themselves and their businesses. There were three other categories that attracted one response each to constitute the remaining 13%: on

the job training and printed material together, on the job training, printed material and outside assistance together and finally self-paced learning and outside assistance. As one might expect, these answers were slightly less specific than the responses about training undertaken by respondents whose organisations were already on the Internet in question 20 as indicated by comments such as, "imagine it would be on the job training" and "probably training given by ISP." There seems to be an equal tendency towards in-house expertise shown by "(training) by peers- two staff use the Internet at home" and "by peers- train the trainers" and outside expertise such as "structure bespoke training by experienced Internet supply/user" and "employ external contractors."

Possible Internet training	Percentage of Responses
On the job	23
By outside organisations	23
On the job training and outside assistance combined	13
Peers	7
Self-paced and personal efforts combined	7
Whatever is necessary or required	7
Not applicable to us yet	7
Four other combinations	13

**Table 6.41 Possible Internet training**



**Figure 6.41 Possible Internet training**

**Q42 What percentage of your employees telework?**

Seventy eight percent of the respondents whose organisations were not on the Internet answered this question. The equivalent question for respondents who were already on the Internet was question 21 and as in that question, a number of respondents were

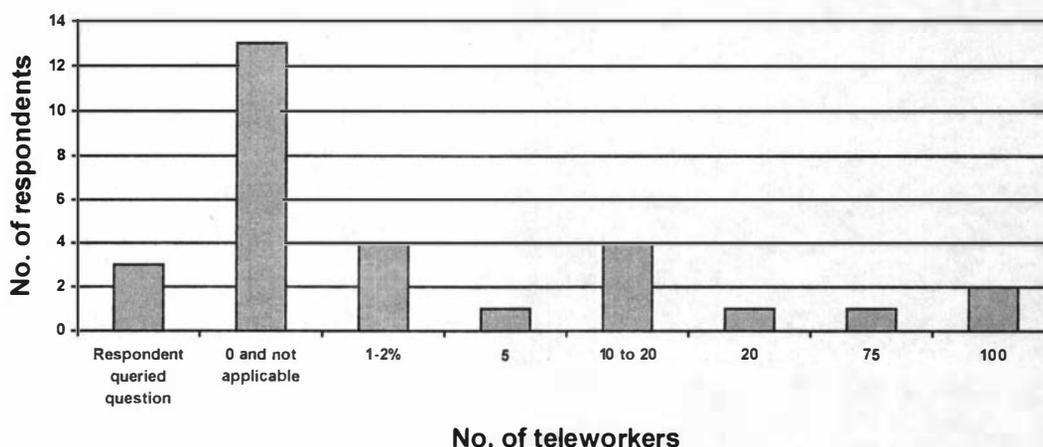
either unfamiliar with the teleworking term or had no idea if their organisation had teleworkers and if so, how many there were.

Fewer of the respondents' organisations in this question had teleworkers than respondents' organisations in Q21 that were already online.

Responses (in percentages of teleworkers) for this question were:

The percentage of employees who telework	No. of Respondents	% of Respondents
Respondent queried question	3	10.34
0 and not applicable	13	44.82
1-2%	4	13.79
5	1	3.44
10-20	4	13.79
20	1	3.44
75	1	3.44
100	2	6.89

**Table 6.42 Teleworkers in non-Internet organisations**



**Figure 6.42 Teleworkers in non-Internet organisations**

**Q43 Do you think gaining access to the Internet would be a factor in this?**

Respondents were asked whether they thought gaining access to the Internet would affect the number of teleworkers. The equivalent question for organisations on the Internet is question 22. Seventy eight percent of eligible respondents answered question 43.

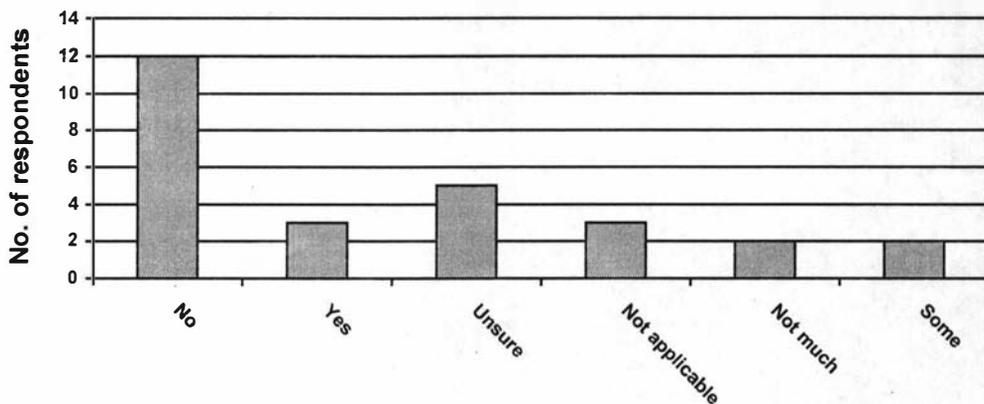
Twelve respondents said no, they didn't think their organisation gaining access to the Internet would affect the number of teleworkers in the organisation and three respondents said they thought it would have an effect. Five respondents said that gaining access to Internet may have an effect on teleworkers in future but they were unsure about it. Three respondents said the question was not applicable to them, which

may mean that their organisation is not on the Internet and is not likely to be so. Two respondents said "not on a huge scale" and "not really" and two said it "would assist" and "potentially- we are seeking to grant access from the field into our systems via the Internet."

Responses to this question illustrate that the majority of respondents don't think that their organisation gaining access to the Internet would affect any teleworkers they have. A similar number were unsure, said the question wasn't relevant and there would be little impact on their teleworkers if their organisation was to gain access to the Internet.

Possible impact of Internet on teleworkers	No. of Responses	% of Responses
No	12	44.44
Yes	3	11.11
Unsure	5	18.51
Not applicable	3	11.11
Not much	2	7.4
Some	2	7.4

**Table 6.43 Possible impact of Internet on teleworkers**



**Responses to lack of Internet**

**Figure 6.43 Possible impact of Internet on teleworkers**

**Q44 What responses have you had from organisations and individuals using the Internet about your organisation's lack of use?**

There were 30 responses to this question, which represents an 83% response from the organisations not already on the Internet. Question 44 also mirrored an earlier question (23), but this time asked what responses the organisation had had from organisations and individuals using the Internet to their organisation's *lack* of use.

Sixty three percent of the respondents said they had had no responses from other organisations about their lack of Internet use. It would be interesting to have asked those respondents whose organisations were already on the Internet whether they had had responses about not being online prior to them getting connected and if so, whether this served as a push factor.

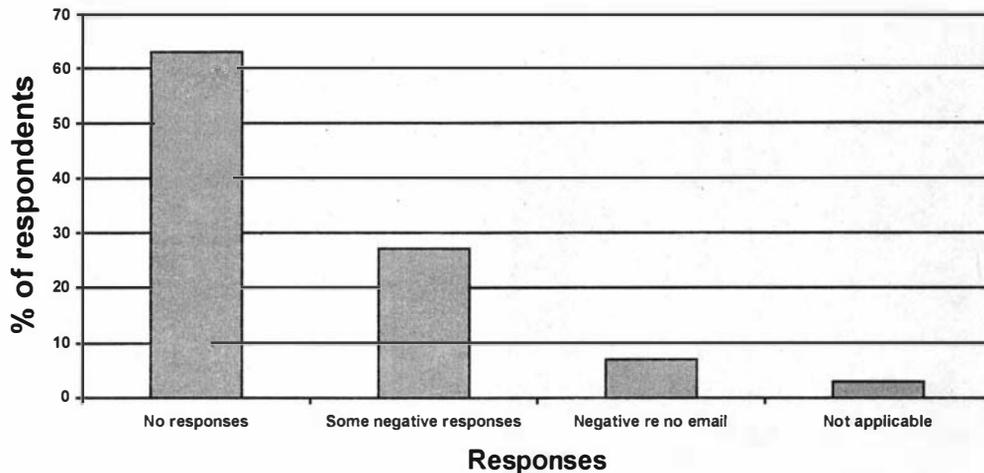
Twenty seven percent of respondents said that they had received comments and some of these indicate that those dealing with them would prefer them to be online eg "one or two have expressed surprise", "please do it so we can connect (2 responses to us), please do it so we can follow your example (4 responses to us)", "believe we are not utilising any possible sales resources", "we are outdated", "some customers would prefer us to be on the Internet" and "currently minimal but rapidly increasing and will definitely need to be on the 'Net' shortly."

Seven percent of respondents relayed comments received about their lack of email use "Mainly with e-mail although some employees use CompuServe- we are addressing this" and "request by companies overseas for certain access for email only." The remaining 3% said the question didn't apply to them.

Somewhat surprisingly, nearly two thirds of respondents said they hadn't received any responses about their organisations not being online. Perhaps reception, customer service and sales staff may have been more likely to hear these comments. It would be interesting to know whether those organisations that had received negative comments were any more inclined towards considering a move online.

Responses from organisations and individuals about lack of Internet use	No. of Responses	% of Responses
No responses	19	63
Some negative responses	8	27
Negative re no email	2	7
Not applicable	1	3

**Table 6.44 Responses to lack of Internet use**



**Figure 6.44 Responses to lack of Internet use**

**Q45 What sectors of the community that do not have access to or who have a strong aversion to using Internet are you aware of?**

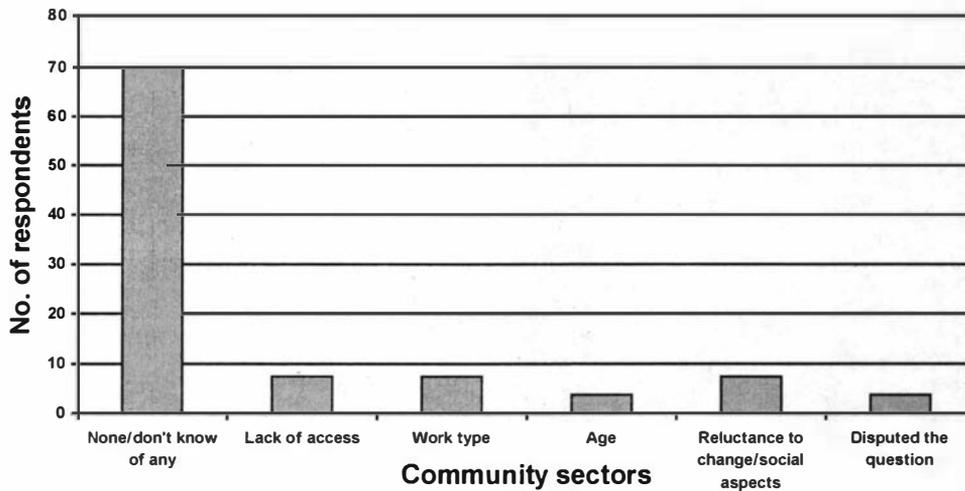
This question was worded exactly the same way as question 25 and seventy five percent of eligible respondents commented on this question.

Seventy percent of these respondents said they weren't aware of any sectors of the community that had a strong aversion to using the Internet. Twenty six percent of respondents were aware of some sectors with an aversion with a couple naming lack of access eg "I imagine a high proportion of our population would not have a home computer" and "anyone who currently doesn't have a PC." One specific organisation was named- "Dept of Defence- security of data transfer" as well as "older clients" and "schools, rural centres." Two comments mentioned general areas, "only those adverse to change and new technology" and "concerns on social aspects and lack of information available." A final comment (the remaining 4%) seems to dispute the question, "Most people we have contact with through our organisation are either directly users or would be very receptive to the idea."

In question 25 nearly 60% of respondents replied that they were unaware of any sectors lacking access and the 70% in the present question may be due to those organisations not being online and therefore not in contact with people the question referred to.

Sectors of the community lacking access or having an aversion to the Internet	Percentage of Responses
None/don't know of any	70.0
Lack of access	7.4
Work type	7.4
Age	3.7
Reluctance to change/social aspects	7.4
Disputed the question	3.7

**Table 6.45 Sectors lacking access or having an aversion to Internet**



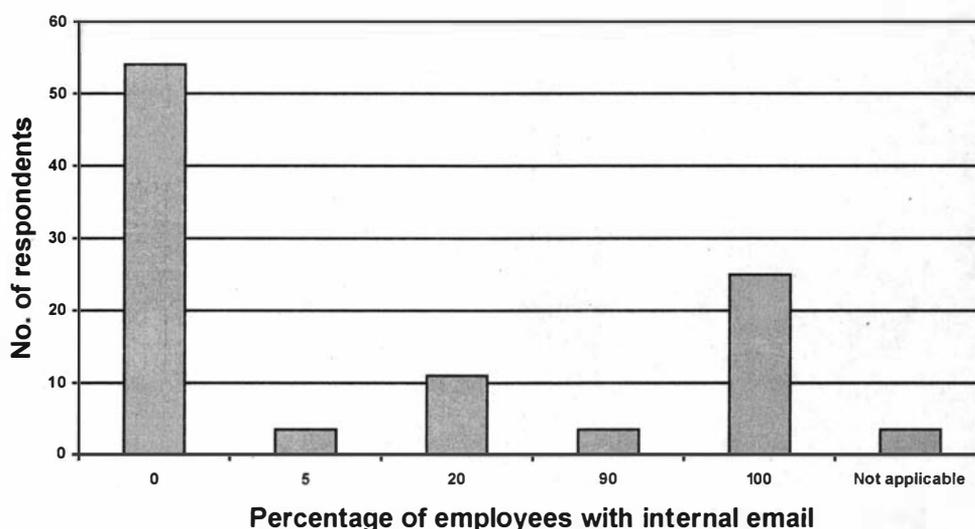
**Figure 6.45 Sectors lacking access or having an aversion to Internet**

**Q46 What percentage of employees have access to internal email?**

This question asked what percentage of employees had access to internal email and was worded in a similar manner to question 27. There were 28 responses with fifty five percent who said no employees had access with two who commented further, "nil in our office" and "0- no need for." Twenty five percent said 100% of staff have access to internal mail and eleven percent of respondents said 20% of staff had access to internal email. These responses show the trend for all or no staff to have access as seen in previous questions on email access.

Percentage of employees with access to internal mail	No. of Responses (in percentages)
0	54
5	3.5
20	11
90	3.5
100	25
Not applicable	3.5

**Table 6.46 Employee access to internal email (non Internet respondents)**



**Figure 6.46 Employee access to internal email (non Internet respondents)**

**Q47 What percentage of your existing customers and clients do you think would prefer to use email as a means of contacting you? (rather than phone or fax or face-to-face communication)**

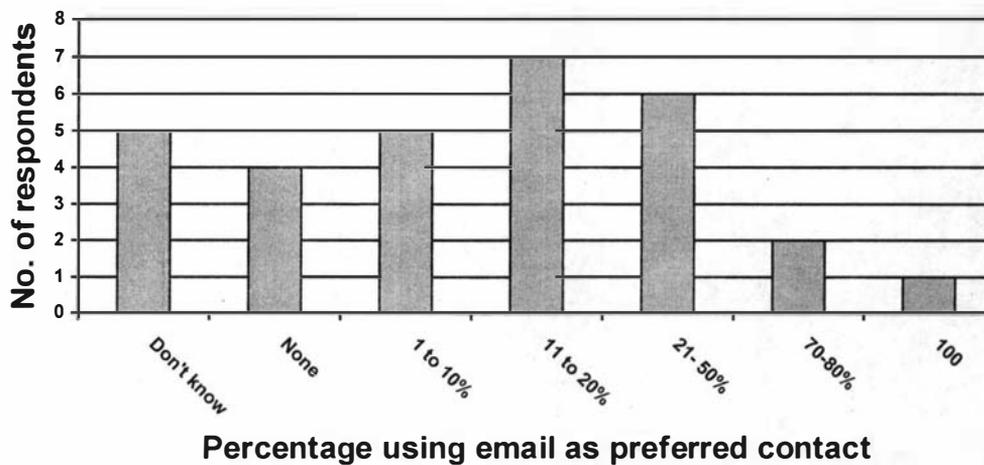
Respondents were asked in this question what percentage of their existing customers and clients they thought would prefer to use email as a means of contacting them (rather than phone or fax or face-to-face communication). This question has some similarities to question 24 in which respondents were asked "what percentage of your existing customers and clients would now use Internet solely as a means of contacting you?" There were 30 responses.

Only 10% of respondents said they thought that their existing customers and clients would prefer to use email (greater than 50% likelihood) as a means of contacting their organisation (rather than by phone, fax or face-to-face communication). There were a number of comments that gave some insight into what respondents thought. The person who said s/he thought 100% of the existing customers or clients would prefer to use email qualified that with "but not as a preference, only as and when appropriate." Another respondent who also gave a greater than 50% likelihood of their clients preferring to contact them by email said "75%- some of our clients are traditionalists and are adverse to using PCs." One very pertinent issue mentioned was "we don't really know how many of our customers have email. Our largest customer the Dunedin City Council (about 75% of our revenue) has email." One respondent said s/he thought "25%- or courier."

These responses indicate a lack of customer awareness or research about preferred communication channels. It appears some assumptions have been made without asking customers and clients how they would prefer to be contacted.

Email as sole means of contact	No. of Responses	% of Responses
Don't know	5	16.66
None	4	13.33
1 to 10%	5	16.66
11 to 20%	7	23.33
21- 50%	6	20
70-80%	2	6.66
100	1	3.33

**Table 6.47 Email as preferred means of organisational contact**



**Figure 6.47 Email as preferred means of organisational contact**

**Q48 What is your policy on the use of email for personal communication in your organisation?**

This is the same wording as for question 29 and this time there were 29 responses to the question out of a potential 36 replies.

Five respondents said the question was not applicable (presumably because they don't yet have email or intend to get it, although this comment may have been made by sole business operators). Another five respondents said they didn't have an email policy, which has been seen as different from comments from nine respondents that said there was no policy yet, or it was still to be determined. While it is hard to be clear about what respondents intended, it seems likely that there is a difference between organisations that do not have a policy and feel they don't need one and organisations that do not have a policy yet and feel they are likely to need one when they get online. Five respondents said their organisations did have a policy regarding the use of email

for personal communication and another five respondents said there were no restrictions on the use of email for personal purposes.

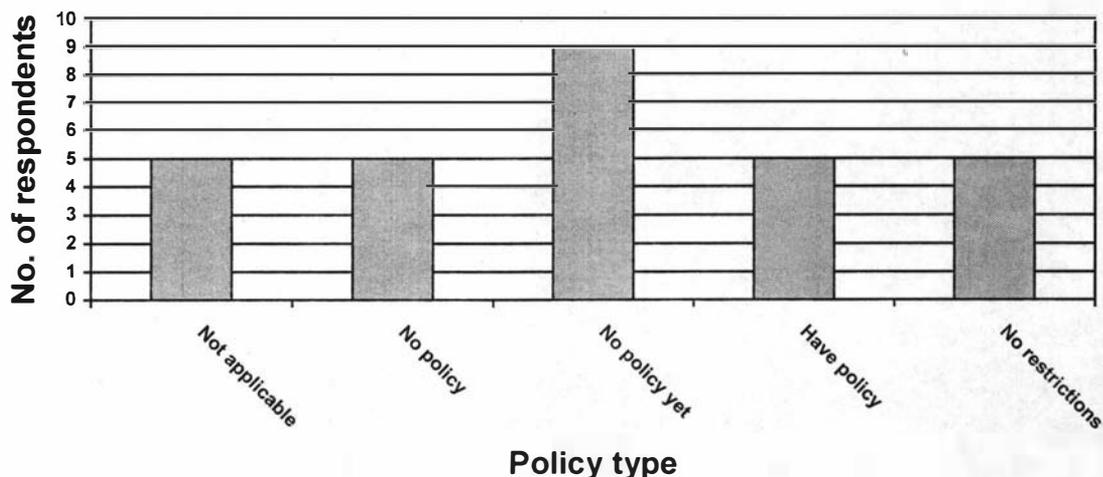
There was a range of responses that commented on policy, personal communication in the workplace and email use. Some of these referred to policy direction being received from elsewhere in the organisation such as "are awaiting these instructions" and "at the moment policy being established at Head Office as we are part of a multinational." Other comments placed the use of email within a wider context, "IS policy states all email is company owned and may be used by the company as evidence" and "company computers are to run company programs on to do company work." One respondent said that "(email is) encouraged as a replacement for memo etc" although as it seems unlikely anyone would write a memo as a form of personal communication, perhaps the respondent meant that email enabled a more informal method of communication than that afforded by a memo. Another somewhat curious comment is "restrictive on the grounds of importance" which may mean the importance of the email or the person concerned or perhaps, the speed of messaging.

While some organisations seemed to take the view that employees were responsible adults who would behave in a sensible manner "staff members' responsibility", other organisations were more interventionist, eg "we do not have one (email policy)- would discourage personal communications (if private and personal stuff)."

To summarise, nine respondents said their organisations didn't have a policy yet with a further ten saying they didn't have one or it wasn't applicable to them. A small group of five had a policy in their organisations and five had no policy but neither did they have any restrictions on the use of email.

Organisational policy on email usage	No. of Responses	% of Responses
Not applicable	5	17.24
No policy	5	17.24
No policy yet	9	31.03
Have policy	5	17.24
No restrictions	5	17.24

**Table 6.48 Policy on email for personal communication (non Internet respondents)**



**Figure 6.48 Policy on email for personal communication (non Internet respondents)**

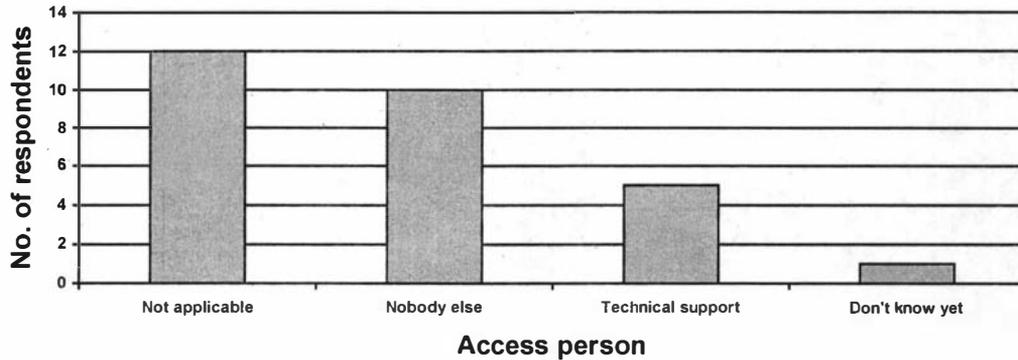
**Q49 Who, other than the employee, is able to access an employee's email?**

There were 28 responses of which nearly half (12) were "not applicable" comments. With the benefit of hindsight, it would have been a good idea to have written "would be able to" rather than "is able to" (access an employee's email), especially as the previous question asked respondents to predict a percentage. The other responses are shown in table 49.

The responses reflect those in question 30 with email access being primarily limited to the employee concerned or, to a lesser extent, technical support.

Ability to access employee's email	No. of Responses	% of Responses
Not applicable	12	42.85
Nobody else	10	35.71
Technical support	5	17.85
Don't know yet	1	3.57

**Table 6.49 Access to employee's email (non Internet respondents)**



**Figure 6.49 Access to employee's email (non Internet respondents)**

**Q50 Does your organisation have voice mail?**

This is the same wording as question 33 and asks about the use of voice mail. There were 33 respondents who replied to the question. Possible responses were yes, no, will get it, considered and didn't proceed, and had it and removed it. Some respondents ticked more than one box and other replies were: considered voice mail and didn't proceed, don't have it and will get it, and don't have it and not considered.

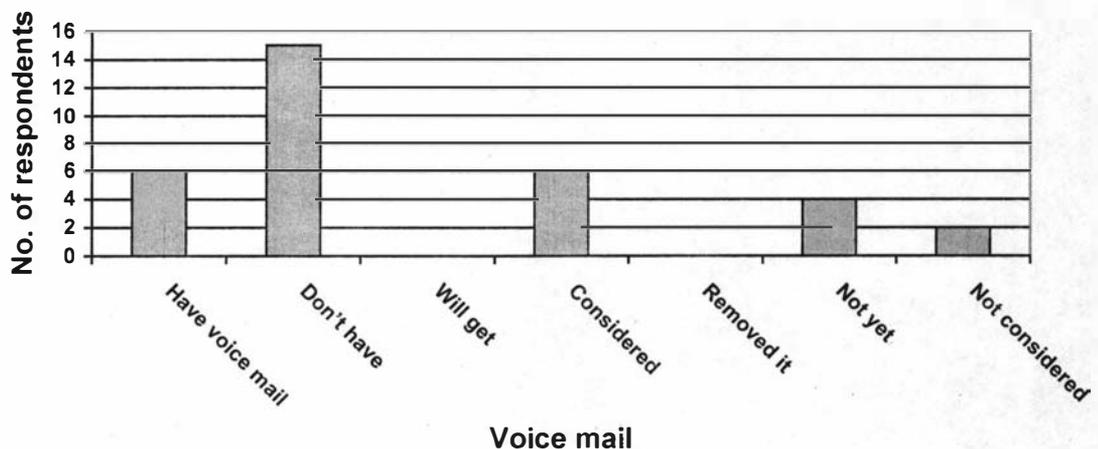
Some of the comments were:

- "just getting it as part of a new phone system to be installed next month"
- "yes but not in our small office. Not liked by many of our offices"
- "yes, it's called an answer phone"
- "no- we considered it and didn't proceed but reviewing again"
- "no- available on mobile phones only."

The most common response was that organisations didn't have voice mail and the same number had considered it and implemented it as had considered it and not proceeded to implement it.

Possible Responses	No. of Responses
Have voice mail	6
Don't have voice mail	15
Will get voice mail	0
Considered voice mail and didn't proceed	6
Had voice mail and removed it	0
Don't have voice mail and will get it	4
Don't have it and not considered	2

**Table 6.50 Organisational use of voice mail**



**Figure 6.50 Organisational use of voice mail**

## 6.2 Summary

Seventy percent of respondents to the paper-based questionnaires were primarily in industry sectors related to service with nearly half being local suppliers. The majority of respondents came from small businesses with almost fifty percent based in one New Zealand location and the majority not having any overseas locations. Eighty six percent of respondents had been on the Internet for less than two years with over half stating they had been on for less than twelve months. Over half the organisations connected to gain and send information often via email. Their ISPs were primarily selected on the basis of cost. Internet access tended to be polarised with either very few or nearly all employees being able to use it at work.

The most popular current and projected uses of the Internet were for data collection and external email. There weren't any overriding trends regarding the process organisations used to gain an online presence with a variety of approaches reported. Most organisations didn't have a clear idea about the amount of Internet traffic they were receiving. Most organisations provided no Internet training and tended to allow employees free access with no policies about use.

## 7 Results and Analysis of Email Questionnaires

### 7.1 Introduction

This chapter presents the results of email questionnaires sent to respondents' organisations. Analysis and interpretation of the findings follow. 255 questionnaires were sent to organisations that were listed in the NZ Who's Who and 1996 A'Courts Business Handbook. The full range of 17 industry sectors outlined in the 1993 Australian and New Zealand Standard Industry Classification Manual were sampled with 15 questionnaires sent to organisations in each sector. It was decided that this would allow a good range of responses with a comparable number being targeted in the paper-based questionnaires sent out previously. Regrettably, only eighteen email questionnaires were returned, giving a response rate of 7% which is really not enough to give definitive answers except perhaps in comparison with the other two questionnaire surveys. The following results are from the email questionnaires.

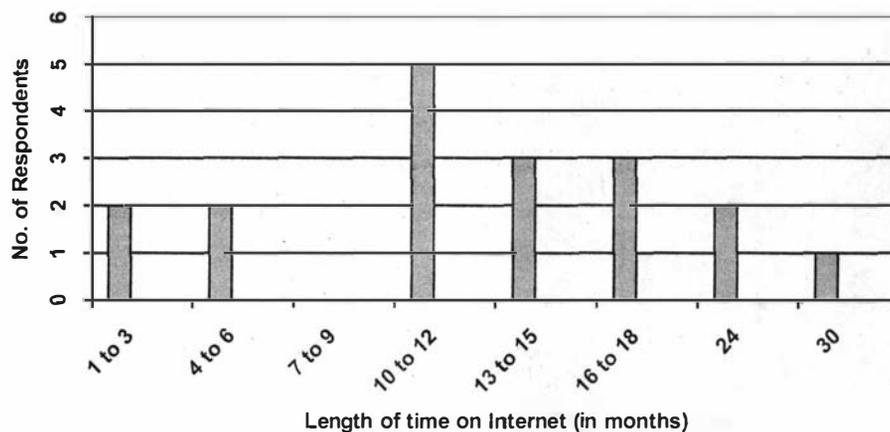
#### **Q1 How long has your organisation been on the Internet?**

All 18 respondents to the email questionnaire stated the length of time their organisations had been on the Internet with all responses converted to months and "several months" being coded as six. The shortest length of time was two months and the longest length of time any of the organisations had been online was thirty months. Half the respondents had been online for less than a year, with eight for periods between one and two years and one for two and a half years (thirty months).

This indicates that most of the respondents' organisations have had limited experience on the Internet and may not yet have their own Web sites. This does not however mean that the respondents themselves or other employees lack Internet experience as they may have previously been employed by other organisations that had been on the Internet longer than the ones in the current survey.

Length of time on Internet (in months)	No of Respondents
1 to 3	2
4 to 6	2
7 to 9	0
10 to 12	5
13 to 15	3
16 to 18	3
24	2
30	1

**Table 7.1 Length of time on the Internet**



**Figure 7.1 Length of time on the Internet**

**Q2 What were the contributing factors in your decision to connect to the Internet?**

There were 18 responses to this question with most respondents commenting on more than one theme. The most prevalent responses were to do with information and communication. Thirteen responses were to do with gaining and sending information, using email to send data and enabling faster and cheaper communication. Some responses indicated specific ways that the Internet was benefiting the respondents' information and communication needs eg "business research", "we needed to publicise our publication" and "cost and international acceptance/usage of email."

Eleven responses were to do with communicating with customers and suppliers. Some respondents mentioned the global nature of doing business in their replies with "appeal to a wider international market", "worldwide connectivity for traveller", "more efficient inter regional communication within the organisation and overseas" and "inter branch messaging, to offer our services worldwide." Other responses focussed on the email application of Internet to do business with "email access to our customers, suppliers", "quicker access to information for customers" and "some customers beginning to use the Internet and asking that we respond with email if possible."

Another category of four responses was related to various business functions. (Other respondents may of course have been thinking of these also and expressing them through the information and communication requirements mentioned earlier.) One respondent said, "(our) type of industry (travel and hotels) very much suited to the Internet", another said, "our business is Internet based" while the third response was that the Internet provided a "market presence" for the business.

Another group of three respondents' comments showed their need to stay current and find out for themselves and their organisations the benefits (or otherwise) of the Internet. Some comments that showed this are "curiosity", "natural interest" and

"general business trends- everyone is talking about it, has become a self fulfilling prophecy!"

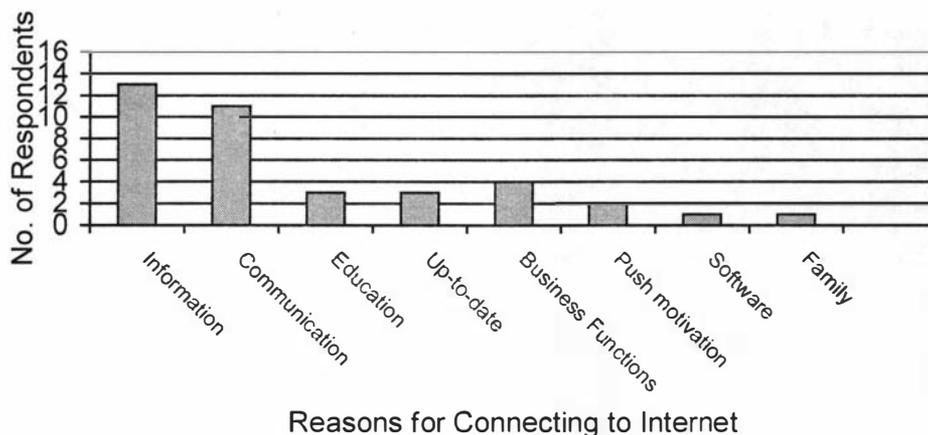
Three respondents wrote that they connected to the Internet for "education", "external education" and "personal development." With such short comments, it is difficult to determine whether this is linked to the larger category of gaining and sending information or the one of staying current and investigating the potential. The researcher decided this would be an additional category because one of these comments had "family use" preceding it.

There were two comments that indicated a "push" motivation eg "saw a portion of income start going to other companies so as a service we needed to provide Internet access to our clients" and "peer pressure."

One comment related to software available from the Internet and the benefits this would bring to the business eg "availability of software patches." Table 7.2 summarises these comments.

Reason for Connecting to Internet	No. of Respondents
Gaining and sending information	13
Communicating with customers and Suppliers	11
Education, personal development	3
Stay current and investigate potential	3
Various business functions	4
Push motivation	2
Software available from the Internet	1
Family use	1

**Table 7.2 Determining factors for Internet connection**



**Figure 7.2 Determining factors for Internet connection**

comments include "good technical knowledge of ISP", "only local provider- local support", and "simply the best service" and "the service is 100%."

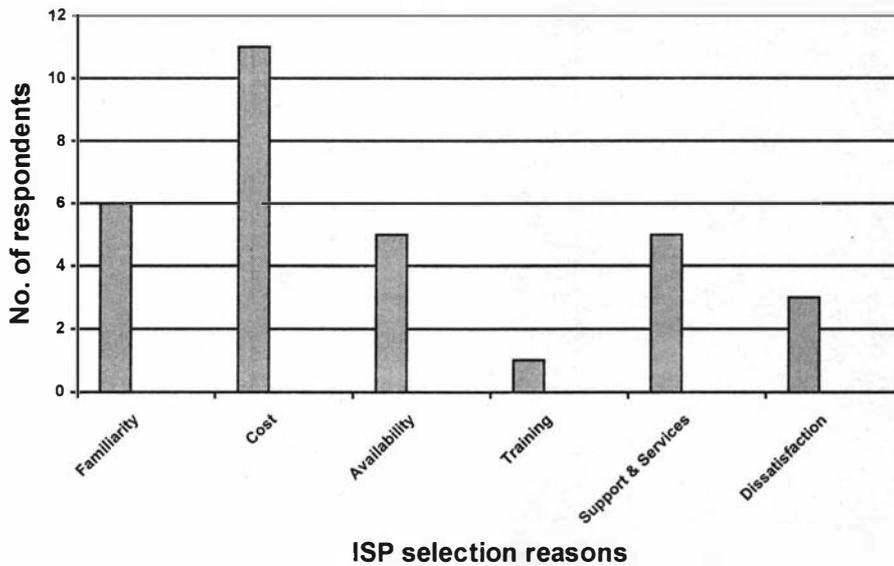
Only one respondent mentioned training although some respondents may have associated this with the online support function. The one comment was "training availability, available three main regional centres."

There was one comment that indicated the decision to use the particular Internet Service Provider was entirely one of chance "found name in Yellow Pages" and illustrates the benefit of not relying solely on the Internet for advertising!

In summary, the majority of respondents had more than one reason for selecting a particular ISP with cost being the most mentioned factor. Just under half mentioned they had selected their ISP on the basis of familiarity or word of mouth recommendation with another three mentioning that they were dissatisfied with a particular ISP. Availability and online support and service were equally ranked and some of the dissatisfaction comments also reflected that these particular issues were of importance in terms of their ISP. Table 7.3 summarises these comments.

Reason for selecting ISP	No. of Respondents
Familiarity, recommendation	6
Cost	11
Availability	5
Training	1
Support and services	5
Dissatisfaction with prior ISP	3

**Table 7.3 Reasons for selecting ISP**



**Figure 7.3 Reasons for selecting ISP**

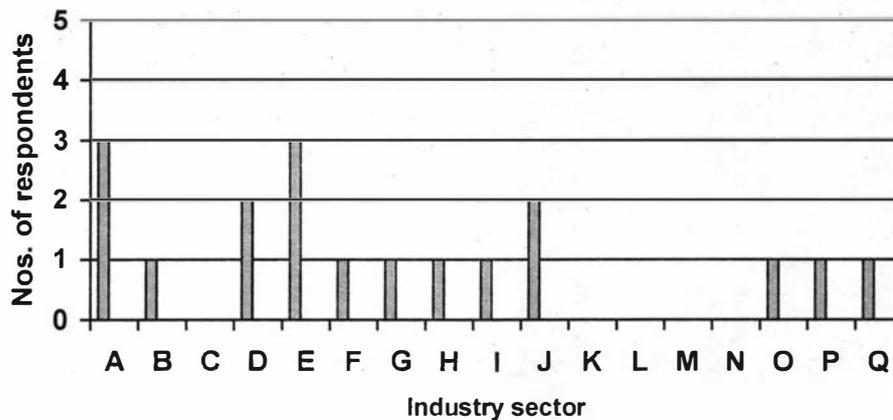
**Q4 What industry sector are you involved with? How would you describe your organisation's core business?**

Respondents described the industry sector they were involved with. The researcher then categorised the responses with the appropriate code from the Australian and New Zealand Standard Industrial Classification 1993 and the New Zealand Universal Business Directory CD-ROM (1997). There appears to be some differences between the codes on these two classification systems.

The small number of respondents does not make comparisons between industry sectors on subsequent questions very valuable. Five of the seventeen sectors have no respondents while the others have either one or two respondents with the exception of sectors A (Agriculture, Forestry and Fishing) and E (Construction) that each have three respondents. There is no representation from the finance sector but the blue collar and primary industry sectors seem to be well represented. Response rates for the various industry sectors were as follows:

Existing Code	Recoded	Category	Count
A	E	Agriculture Forestry and Fishing	3
B	E	Mining	1
C	A	Manufacturing	0
D	D	Electricity Gas and Water Supply	2
E	C	Construction	3
F	B	Wholesale Trade	1
G	B	Retail Trade	1
H	D	Accommodation Cafes and Restaurants	1
I	D	Transport and Storage	1
J	D	Communication Services	2
K	D	Finance and Insurance	0
L	D	Property and Business Services	0
M	E	Government Administration and Defence	0
N	E	Education	0
O	D	Health and Community Services	1
P	D	Cultural and Recreational Services	1
Q	D	Personal and Other Services	1

**Table 7.4 Summary of respondents in each industry sector**



**Figure 7.4 Summary of respondents in each industry sector**

A recoding was done to collapse some of these categories as previously done with the paper questionnaires. The categories chosen were manufacturing (A), retail and trade (B), construction (C), service (D) and other that included government departments and primary industries (E). Once the recoding was done, the results appeared as follows:

Code	Category	Respondents
A	Manufacturing	0
B	Retail and trade	2
C	Construction	3
D	Service	9
E	Other	4

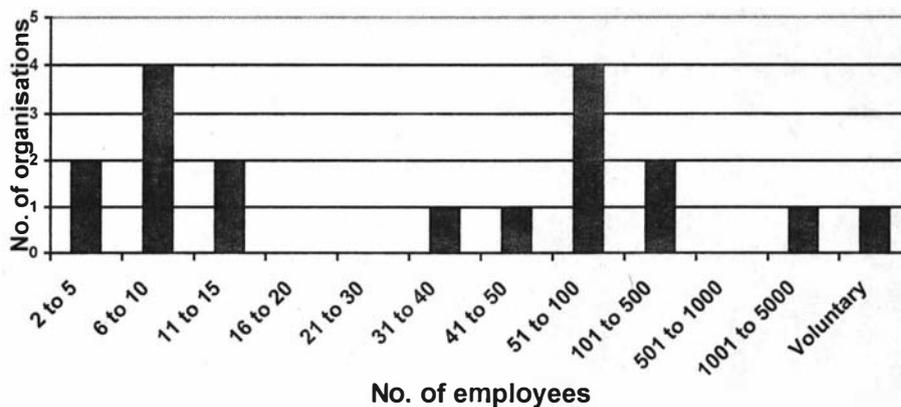
**Table 7.4.1 Recoding of industry sectors**

**Q5 How many employees are there in your organisation?**

All 18 respondents answered the question giving the number of employees in their organisation. Eight of the respondents worked in organisations employing between two and fifteen people with half of these having between six and ten employees. The other cluster of four respondents was employed by organisations that had 51-100 employees. The largest number of employees was 5,000. One respondent did not give a clear indication and said “nine employees plus individual hotel staff >60.” This has been classified in the 51-100 band. Another respondent replied "voluntary member contribution only", indicating they didn't have employees. No organisations had sole operators. The responses show that slightly under half of the respondents come from small firms and a similar number from medium sized businesses, using a New Zealand definition of SMEs.

No. of Employees	No. of Organisations with this many Employees
2-5	2
6-10	4
11-15	2
16-20	0
21-30	0
31-40	1
41-50	1
51-100	4
101-500	2
501-1000	0
1001-5000	1
Voluntary member contributions	1

**Table 7.5 No. of employees in organisation**



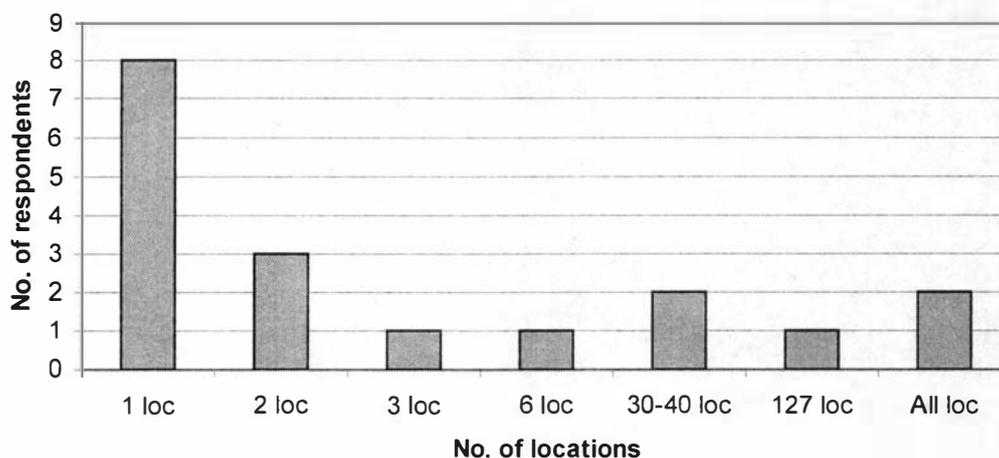
**Figure 7.5 No. of employees in organisation**

**Q6 How many locations do you operate from in NZ?**

All respondents answered this question and the majority operated from one location. Three operated from two locations and the others tended to vary in their responses. One respondent said 127 locations and two said "hotels all round NZ" and "one and many" referring to the volunteer component of the organisation. This accounts for all 18 questionnaires.

No of Locations in New Zealand	No. of Respondents
1 location	8
2 location	3
3 location	1
6 location	1
30-40 locations	2
127 locations	1
All locations	2

**Table 7.6 No. of NZ locations**



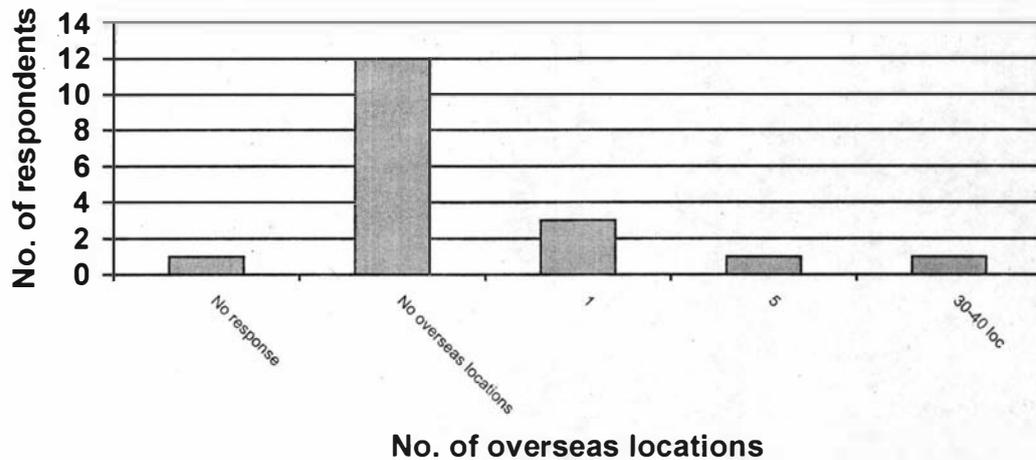
**Figure 7.6 No. of NZ locations**

**Q7 How many locations do you operate from overseas?**

The question asked how many locations the organisation operated from overseas. There were 17 responses to this question with 12 organisations having no overseas locations and three of them having one location overseas. One respondent wrote “area reps in some countries” so this has been coded as five. Another response was “we supply to retail shops globally, but do not have any other locations of our own” which was coded as zero. “Links only to similar organisations” was coded as zero as well. It would seem to be a likely conclusion that the majority of these organisations weren’t currently using or intending to use the Internet to assist in intraorganisational communication.

No. of Locations Overseas	No. of Respondents
No response	1
No overseas locations	12
1 location	3
5 locations	1
30-40 locations	1

**Table 7.7 No. of overseas locations**



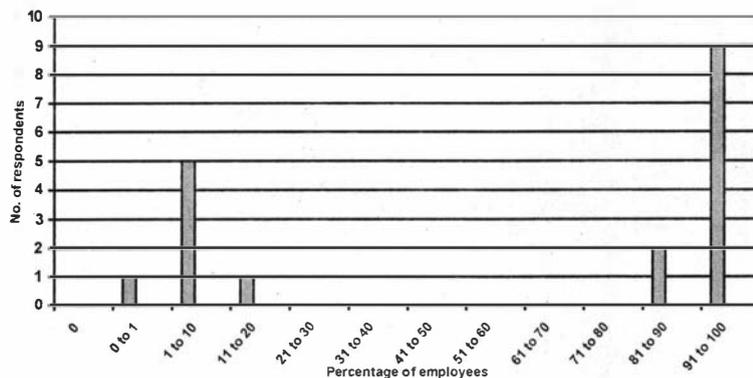
**Figure 7.7 No. of overseas locations**

**Q8 What percentage of these employees have access to the Internet?**

The results appear to indicate that organisations either allow very few employees Internet access (perhaps confined to management) or they allow nearly all employees to have access. Question 29 asked whether staff access is universal or selected and the responses were eight for each with two not applicable responses which seemed to agree with the “nearly none or almost all” pattern in the present question. It is unclear whether reasons for the pattern of responses is to do with perceived value of the information, cost or some other reason.

% of organisation having Internet access	No. of Respondents
0	0
0-1	1
1-10	5
11-20	1
21-30	0
31-40	0
41-50	0
51-60	0
61-70	0
71-80	0
81-90	2
91-100	9

**Table 7.8 Percentages of employees with Internet access**



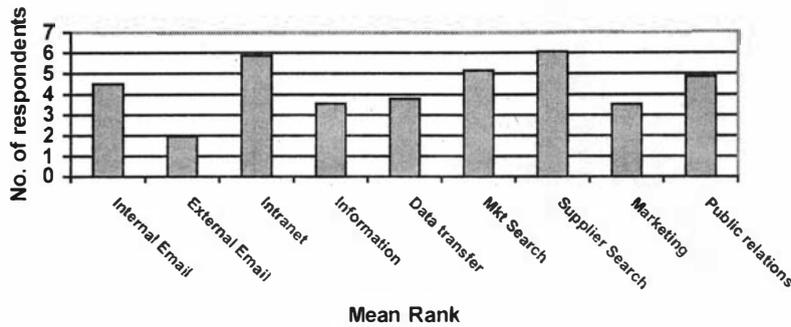
**Figure 7.8 Percentages of employees with Internet access**

**Q9 What does your organisation use the Internet for? (Please rank in order of importance next to the options, with 1= most important)**

The question asked respondents to rank in order of importance their organisation's use of the Internet at present. All respondents whose organisations were on Internet replied to this question. Some respondents ticked several boxes so the researcher has decided that they ticked all boxes they saw as being relevant so scores have been averaged ie 1 =1, 2 ticks =1.5, 3 ticks = 2, upto 9 ticks = 5+. Responses written as "nil" have been coded as 0.

Internet Present Use Ratings	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	7	8	9	10	Total	Mean Ranking
Internal Email	2	0	3	0	0	0	0	1	2	0	0	1	0	1	2	12	4.5
External Email	11	0	3	0	0	0	0	1	0	0	2	0	0	0	0	17	1.97
Intranet	1	0	0	0	2	0	0	1	1	0	1	1	0	1	2	10	5.85
Information Collection	1	0	1	0	4	0	6	1	2	0	0	0	0	0	0	15	3.56
Data transfer	1	0	4	0	4	0	4	1	1	0	0	0	1	0	1	17	3.79
Searching for new markets	1	0	1	0	0	0	2	1	1	0	1	2	2	0	0	11	5.13
Searching for new suppliers	0	0	1	0	0	0	0	1	3	0	2	1	1	2	0	11	6.04
Marketing through a home page	1	0	4	0	3	0	2	0	1	0	0	1	1	0	0	13	3.53
Public relations	2	0	0	0	3	0	1	0	3	0	2	0	2	0	1	14	4.85
Totals	20	0	17	0	16	0	15	7	14	0	8	6	7	4	6	120	

**Table 7.9 Organisations' current uses of Internet**



**Figure 7.9 Organisations' current uses of Internet**

In addition to the boxes that respondents were asked to rank, five of the eighteen respondents made comments under "other responses" and these included:

- (ranked 1st choice) sales and booking of hotels
- (ranked 2nd choice) advertising New Zealand manufacturers
- (ranked 4th choice) training (and) upskilling staff for own intranet internally
- useful in terms of recommending communications possibilities for clients

The table indicates that the most popular Internet application respondents' organisations were currently using were external email and data transfer (both selected by 17 respondents). External email was however, chosen as first choice by 11 of the 18 respondents while data transfer was selected as the second, third or fourth choices by four respondents each time.

The option selected by the second highest number of respondents (15) was information collection. This was closely followed at third place by public relations with 14 respondents, then marketing with 13 respondents and internal email at fifth place with 12 respondents.

Searching for new markets and searching for new suppliers were overall ranked at sixth equal, being selected by 11 respondents. Organisations ranked Intranet lowest on current Internet feature usage. Only 10 out of the 18 respondents chose this with the majority scoring it 5 or above (with 1 being highest).

The present Internet focus for these respondents' organisations appears to be on finding and getting information rather than being concerned with internal communication and searching for new suppliers and markets.

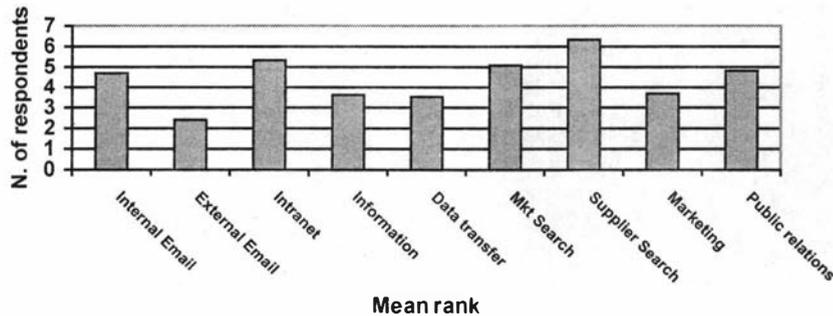
**Q10 How do you see the Internet being used by your organisation in the future? (Please rank in order of importance next to the options, with 1= most important)**

This particular question was similar to the previous one but this time asked respondents to rank in order of importance what they considered their organisation's use of the Internet would be in the future. All 18 respondents replied to this question and the same scoring system was used as in question nine. As for the previous question some respondents did a semi ranking where a number of options were first or

second equal. No amendment has been made to these replies. Responses written as "nil" have been coded as 0. A few respondents included another reason why their organisation would use the Internet in the future and ranked this along with the nine options given. This accounts for some respondents having a score in the '10' box.

Internet Future Use Ratings	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	7	8	9	10	Total	Mean Ranking
Internal Email	3	0	3	0	0	0	0	0	2	0	0	2	0	2	1	13	4.69
External Email	6	0	6	0	2	0	0	0	1	0	2	0	0	0	0	17	2.41
Intranet	2	0	0	0	1	0	1	0	3	0	1	1	1	1	1	12	5.33
Information Collection	2	0	2	0	3	0	3	0	5	0	1	0	0	0	0	16	3.62
Data transfer	2	0	2	0	3	0	5	0	1	0	2	0	1	0	0	17	3.52
Searching for new markets	0	0	2	0	1	0	2	0	1	0	2	3	1	0	0	12	5.08
Searching for new suppliers	0	0	0	0	0	0	1	0	5	0	1	1	2	2	0	12	6.33
Marketing through a home page	2	0	3	0	4	0	0	0	4	0	2	1	0	0	0	16	3.68
Public relations	2	0	1	0	2	0	3	0	1	0	1	4	2	0	0	16	4.81
Totals	19	0	19	0	16	0	16	0	23	0	12	12	7	5	2	131	

**Table 7.10 Organisations' future uses of Internet**



**Figure 7.10 Organisations' future uses of Internet**

In addition to the nine given items that respondents were asked to rank, a number of comments were made under "other responses" and these included:

- (ranked 1st choice)- as for last question (sales and booking of hotels). Booking and sales from people worldwide via Internet.
- (ranked 2nd choice)- assisting NZ commerce
- (ranked 5th choice)- EDI maybe
- (ranked 5th choice)- developing education resources to be available on Internet
- (ranked 8th choice)- designing Web pages for clients
- ranked "other" as 9th choice (without specifying the particular use)

The table indicates that the most popular use respondents thought their organisations would make of the Internet in the future was external email and data transfer (both selected by 17 respondents). External email was however, ranked mostly highly at first and second choice (six respondents each).

The options that were selected by the second highest number of respondents (16) were information collection, marketing through a home page and public relations. Internal email was ranked third in terms of Internet use by organisations, perhaps because external email was first equal choice.

Searching for new markets, searching for new suppliers and Intranet received the lowest equal rating. This may indicate that the organisations foresee that they will be marketing through a home page but not actively searching for new markets and suppliers via the Internet. There does seem to be some indication that Intranets are not anticipated to be of high value in the future; whether this is lack of knowledge about the concept, assigning higher priority to other Internet functions or organisation size the researcher is unsure.

When these future uses of the Internet are compared with the current uses in the previous question, external email and data transfer were the two uses that ranked first equal for both. Marketing was ranked second equal for current use but had slipped to fourth choice for further use, perhaps because they hoped systems such as their home page and email campaigns would then be in place. Information collection was second choice for current use and retained that ranking for future use, sharing second equal ranking with marketing through a home page and public relations. The third priority for current use was internal email but respondents ranked this fifth for future use.

#### **Home Page (Please answer if relevant)**

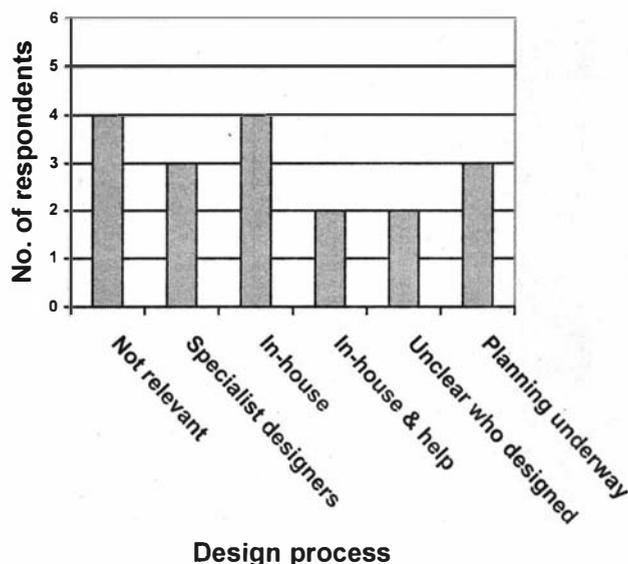
The next section of the questionnaire (Questions 11-25) dealt primarily with the organisation's home page.

#### **Q11 What process did you go through in getting a presence? (eg planning, home page design, technical and customer service back up etc?)**

This question was an open ended one and asked respondents what process they went through in getting a presence. All 18 respondents replied although four said the question was not applicable to them or not relevant at this stage.

Category	No. of Respondents
Not relevant	4
Specialist Web site designers	3
In-house	4
In-house and specialist help	2
Unclear who designed	2
Planning underway	3

**Table 7.11 Design process**



**Figure 7.11 Design process**

Some respondents used specialist Web page designers for the project- eg "we handed over to a specialist D.M.D.", "Employed a Web master who had the skills to plan and load under supervision" and "Found Web designers (iM3 Multimedia- Auckland) through advisors we use, they designed site, we sent modifications back, changed and went live."

Some pages were designed and created in-house eg "internally: planning (what to include and what not to), internal draft designs, internal feedback, then published it externally", "select ISP, register domain name, design appropriate material for home page, design and develop site", "design and development for the second time. I lost 40 hours of work due to non backed up hard drive" and "did it all from scratch, had CIT student for some of the Web Page design."

Other organisations' approaches used a blend of in-house and outsourced expertise, "Started to learn HTML, then used local design consultant to set up page, obtained copy of all his work, and used FrontPage to complete job. Still learning and site is still under development."

Some respondents made comments that were unclear as to whether they were done with in-house expertise or by outsiders. These included "The suggested layout was circulated throughout all branches and all information was given consideration" and "inspiration, trial on an ISP site, RFI to all ISPs, virtual site URL, transfer to selected ISP."

Some comments indicated preliminary work was progressing, "planning and design", "currently seeking advice" and "we do not yet have a home page. Individual accounts have been acquired as required. We are in the process of planning to acquire a proper presence."

There doesn't appear to be any clear trend in these responses. Some organisations sought help and outsourced the development at the start and others started on their own and then handed the project over to the professionals. Just under half the respondents either found the question wasn't relevant to them because they hadn't started thinking about it or because they were still in the planning stage. Perhaps this indicates that they consider having a Web site a major step and one likely to involve time and money that needs to be balanced with other areas in the business.

#### **Q12 What lessons have you learnt (positive and negative) about being online?**

Seventeen of the eighteen respondents whose organisations were online answered this open-ended question and these responses have been categorised as positive lessons, negative lessons and observations. Often a range of responses was given by one respondent- positive and negative.

There were seven positive lessons learnt and these were:

- "We can "export our product down a phone line"- it doesn't matter to a client in Malaysia if we are in New Zealand provided we find a method of delivering a product from our agent's computer to a local plotter."
- "Lots of information out there!"
- "It is another marketing tool. People only need one look to understand our services."
- "Provides a viable method of communicating between business partners."
- "The wealth of information and dissemination of same is done at an incredible rate. We are able to access the latest information for our clients. Also moving information to internal and external (ie spreadsheets to our accountants) is achieved far more readily and is less time consuming with fewer mistakes."
- "Wide range of contacts, data transfer for support services is a breeze."
- "Pros- positive reaction from clients (current and prospective), improved communications. Also benefits to the company stemming from access to updated software packages and improved support from software suppliers."

The responses cover a range of business areas such as marketing, customer service, communication and access to information.

The nine negative lessons learnt included the following comments:

- “Takes a long time to find anything useful! Yet another computer system that takes time to learn and for most people they only have time to learn the basics and don't get much further.”
- “There are a lot of browsers rather than bookers. Need to spend considerable sums to be involved with many search engines. It's hit and miss marketing.”
- “Does not present as many opportunities as first thought. Surfing is frustrating. Not (yet) a good advertising medium. A useful communications tool.”
- “Negative- good time and money waster if not kept in check.”
- “Places another level of support and training upon computer staff. Can be a time waster for staff (at least at the outset).”
- “It takes a lot of time to get a good site running.”
- “Find a reliable server. We are unhappy with the level of service we have obtained through our present supplier. No customer service, not being given enough information with regard to maintenance, news updates.”
- “Negative :-) worse than faxes for removing excuses- we provide engineering drawings to people in other parts of the world instantly and can't say that they are in the mail.”
- “Cons- none really.”

The responses tend to focus on the amount of time taken to get results through lack of information or training. The penultimate comment is a positive for the engineering company's customers but appears to be light heartedly seen as a negative by the respondent in terms of a faster response needed by the business. The final comment is a double negative- the respondent sees the lack of negative lessons as a positive.

Other observations made included:

- “No negatives- too much to list- still learning!”
- “Spend cautiously and sustainably! Make sure Web site can be maintained.”
- “We need a single point of presence before I can answer this effectively.”
- “Nothing big...small changes are being made continually depending on log reports. Biggest need is member support with contributions of material, photos etc for the site.”
- “Image, style and speed is everything.”

These five comments indicate that respondents are still relatively new to the process and are currently learning their lessons. The overall tone is a positive one.

**Q13 How much Internet traffic did your organisation have two months ago?  
(approximate)**

This question was the first of a series of three asking about Internet usage in the organisation in megabytes (mb). Some people who filled out the questionnaire had no real idea about the volume of traffic. No distinction (though unasked for) was made between incoming and outgoing traffic. One respondent mentioned that the ISP charged them a flat fee per month rather than by volume. There were 16 responses to this question.

Five respondents said they didn't know and commented "ask our provider", "Don't know- ISDN connection installed 3 months ago and traffic not yet reported on", "Unknown", "not recorded", "unknown, but small." One said a "moderate amount" was used, another said "don't know in mbs. In two months our bill from X has doubled from \$80 to \$160 per month" and one respondent said there was no traffic. Four people said their organisations had used less than 10 mb and four said they had used between 10 and 100 mb two months ago.

**Q14 How much Internet traffic did your organisation have last month?  
(approximate)**

There were 15 responses to this question. The comments about measurement in the previous question also apply here. Five respondents didn't know about the volume of Internet traffic for their organisation and a further person hazarded a guess with the comment "(a) slight increase (over the previous month)." Some respondents gave an indication of the volume of Internet traffic with two saying less than 10mb was used by their organisation in the last month, six saying between 10 and 100 mb and one giving the volume of traffic as between 101 and 1000mb.

**Q15 How much Internet traffic has your organisation had this month?  
(approximate)**

There were 15 responses to this question. Those respondents who were unsure in questions 13 and 14 about the amount of traffic their organisations had had during the past two months were still unsure in this question. One person knew their organisation had had more traffic and nine respondents were able to give an indication of traffic in megabytes.

Five respondents didn't know how much traffic there had been and made comments such as "don't know- ask our provider" and "unknown, but small." One person said "again an increase (on the previous month)" and eight people indicated the amount of traffic in megabytes with three saying less than 10mb, four saying between 10-100mb and one saying their organisation had used between 101 and 1000mb. One person said the question was not applicable to them.

In hindsight, a better way of wording this would have been "has the amount of Internet traffic your organisation received in the last month increased, stayed the same or decreased?" When questions 13-15 are looked at to discover any trends, it appears that those answering these questions tended to be unsure about the amount of traffic, therefore making comparisons of limited value. Those respondents who did give some idea of traffic volume in megabytes showed some increase with one organisation using between 101 and 1000 mb and a slight increase in those using 10-100mb over the two months.

**Q16 What is your organisation's policy for Internet use by employees?**

The question was open-ended and was designed to elicit responses about Internet policies. All except one of the respondents replied to this question and the categories

seem to be free access, work related access and limited access. Some respondents didn't state whether their organisation had a specific policy and three said the question was not applicable to them.

The first category of comments indicated that some organisations allowed free access to all employees by such comments as "freely available", "free and open access" and "open and free."

Other variations on the theme of free or unrestricted access for employees with some provisos were, "As long as it is outside of work hours, and not disturbing any other user, then it's OK. Since the Internet is not available on all office computers, it appears to be self regulating, in the regard that it requires co-ordinating the use of someone else's computer." Another comment along similar lines was "Except for two key users access is not encouraged during working hours unless for a specific purpose. Lunch time and after hours access is allowed. (Flat rate billing allows unlimited access so time/data charges do not apply)."

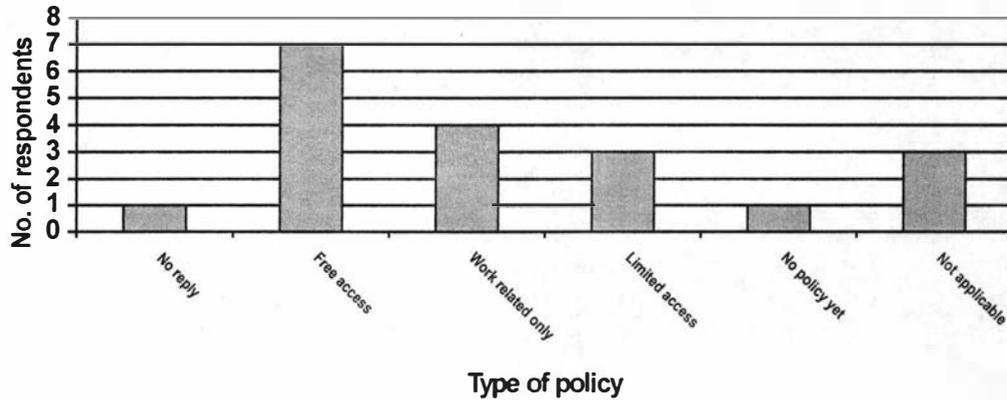
Other comments showed companies advocated free Internet access with some conditions, "At this stage we are encouraging them to help themselves so that they become more familiar with the tool and thus can make better use of our intranet as we build it. Company culture not conducive to time wasting, so it shouldn't be a problem." Other respondents said "it's OK, don't abuse it", and "At this stage it is not monitored and free access is available to all. No site blocking has occurred, although this is on a reviewable basis" and "Unrestricted- don't get caught wasting company time and money." One comment that seemed more directly to address the policy question said "The usual. No downloads of games, pornography, or other non-business downloads. Maintain security. No aimless surfing."

The third category of limited access included comments such as "We concentrate on email but after hours surfing is not encouraged only to glean information re news or technical updates." The researcher interpreted this to mean that general surfing was not permitted after hours but staff could use the Internet to look at work related sites. Two comments were made in the context of email use, "Email available for all PC users. Internet available through one resource machine for relevant research work only" and "They basically only use email facilities."

One respondent mentioned that "(we) do not have one (policy). We are so busy there is not enough time to play" perhaps indicating that the anticipated Internet usage would be recreational and not to better the business. Table 7.16 summarises these comments.

Internet policy	No. of Responses
No reply	1
Free access	7
Work related only	4
Limited access	3
No policy yet	1
Not applicable	3

**Table 7.16 Organisations' Internet policies**



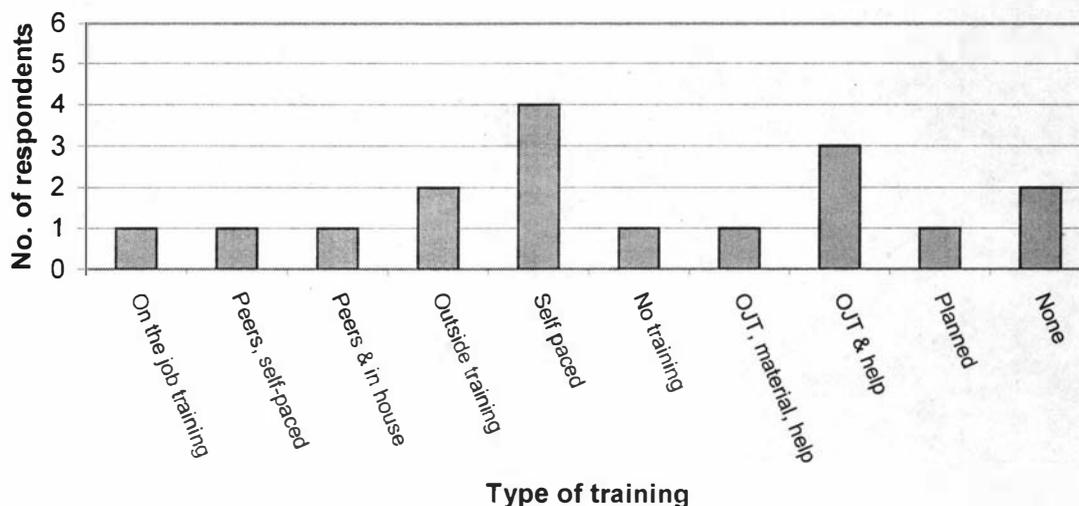
**Figure 7.16 Organisations' Internet policies**

**Q17 What training has been available for employees? (eg on the job training (self-paced, by peers), printed instructions, training given by Internet Service Providers etc)**

Respondents were asked what training has been available for employees. This was an open-ended question and several prompts (eg on the job training (self-paced, by peers), printed instructions, training given by Internet Service Providers) were given. The majority of responses indicated more than one training method such as training either on the job or by an outside provider followed by in-house assistance or employees' own efforts. Training that was provided seemed to be of short duration and at a fairly basic or introductory level.

Type of training	No. of Respondents
On the job training only	1
Peers and self-paced	1
Peers and in house assistance	1
Training from outside organisation eg ISP, seminar	2
Self paced and personal efforts	4
No training	1
On the job training, printed material, outside assistance	1
On the job training, outside assistance, in house assistance	3
None yet- being planned	1
None	2

**Table 7.17 Sources of Internet training**



**Figure 7.17 Sources of Internet training**

**Q18 What percentage of your employees telework? (work at home for your organisation with the aid of technology)**

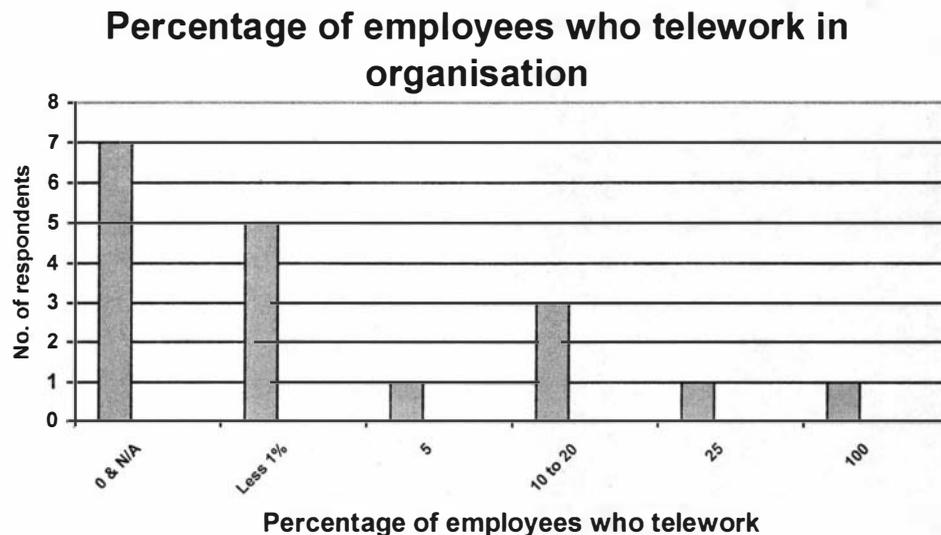
There were 18 responses, which meant that all organisations represented by the questionnaire answered the question. Respondents to the previous (paper) questionnaire were unclear about the term teleworking. For this reason, the definition "work at home for your organisation with the aid of technology" was given in the email questionnaire.

A distinction made in some replies was that some employees had the ability to telework although they didn't necessarily do so, or do so all the time such as "25% able to", "5% on an occasional basis" or "nil- except I occasionally work for a morning and use a dialup direct (non Internet)." A couple of replies indicated that some positions in the organisation led themselves to teleworking more than others

such as “10% of office staff, which would be 2% of our total staff” and “14%- our man in Japan.” One person replied, “We are essentially a teleworking business” so that response was coded as 100%.

Percentage who telework	No. of Respondents
None and not applicable	7
Less than 1 percent	5
5 percent	1
10-20 percent	3
25 percent	1
100 percent	1

**Table 7.18 No. of teleworkers**



**Figure 7.18 No. of teleworkers**

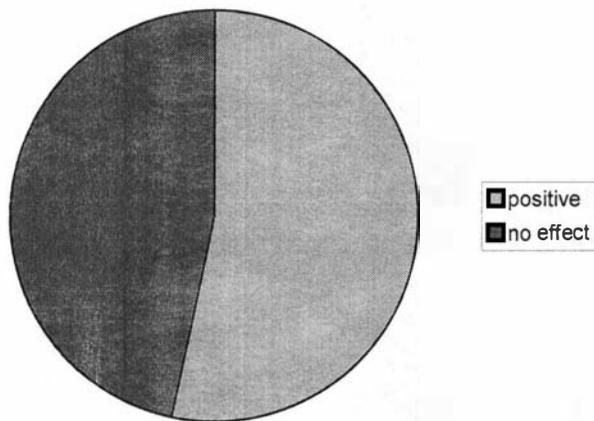
**Q19 How has your organisation's use of Internet affected your teleworkers?**

There were 15 responses with eight being positive and seven being neutral or indicating that the Internet had no effect on any teleworkers in the organisation.

Some of the comments that indicated a positive impact were “Growing realisation that they (employees) can use it. Some email files to themselves for work at night, some are aware of the future opportunities to have live links to Web sites of suppliers’ products built into our drawings.” “It allows our travelling sales staff (3) the ability to remain in contact with our Christchurch base. Also provides the ability to choose to ‘work from home’ on special projects etc, as an option. From an IT point of view, I can support the network and users from a broader range of locations and time periods, if required.”

Comments indicating that organisational use of Internet had had a minimal or neutral effect on teleworkers were four “not applicable” comments, “no, generally use direct dial up” and “no problems.”

Other comments related to ease of use such as “Life is a lot better. We now email at any time of day or night- before this the fax machine would ring throughout the house and disturb the family”, “allowed telework to occur more easily. Faster communication, file transfers etc”, “email has simplified what we do and continues to offer new opportunities” and “transfer of data is much easier and more efficient.”



**Figure 7.19 Impact of Internet on teleworkers**

**Q20 What responses have you had from organisations and individuals using the Internet to deal with you?**

All 18 respondents replied to this question. Eleven of the eighteen responses were positive with some indicating limited use so far eg “not large...some new members (12% approx.)...some magazine sales” and others heavier use eg “We get regular comments on the Web site and queries about our product- all positive so far.”

Other positive comments were to do with faster and easier access such as “An appreciation of timely responses. Ease of contact. Beneficial for our European customers who can get email replies the next day” and “Very receptive. Everyone loves email as it is so easy- just like completing this questionnaire”, “Relieved at easier access and transmission of data”, “The widespread uptake of Internet connections has made usage and responses as standard as sending a fax”, “Very good. Time savings and cost savings are high”, “Good means of communicating” and “Clear, fast, easy, wonderful etc etc.”

Two responses contained both positive and negative elements. These were “positive, some cash sales, a certain reluctance to pass the credit card details, the integrity is sometimes questioned” and “junk email, legit email and attachments.” A further comment showed a change in attitude, “Positive over the last 6-8 months. Prior to that connection/email was difficult at times.”

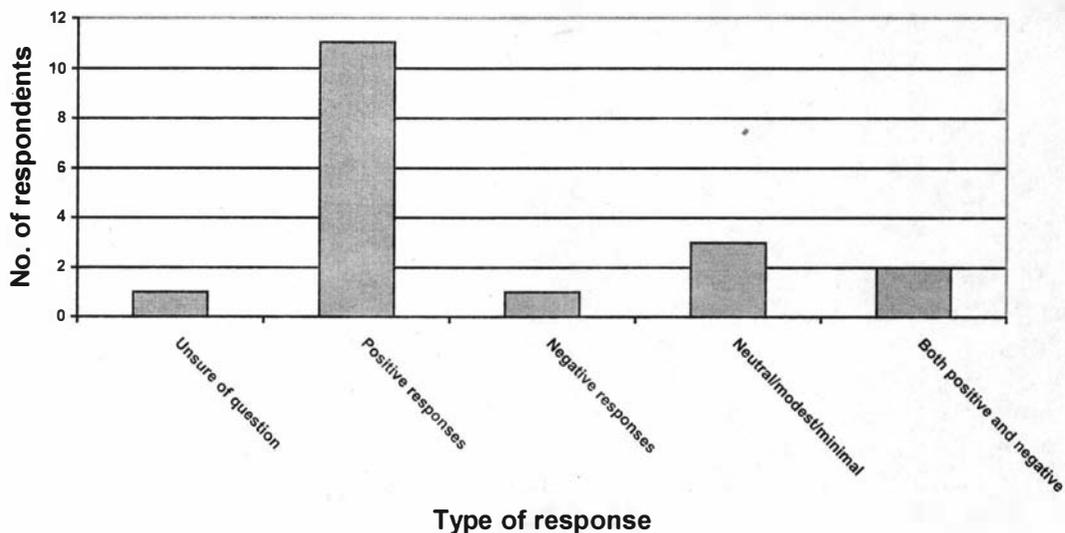
Three responses were fairly neutral and indicated minimal responses from those outside the organisation in terms of using the Internet to deal with them. Responses were “minimal”, “Little as yet. We are keeping use limited until fully online with new IT system” and “Internet makes it possible for me to work nationally from Nelson, however, most clients still need regular face to face meetings.”

One response could be perceived as negative, “They expect us to teach them how to do it”, although perhaps this was being taken as a compliment. The remaining response was from a rather puzzled respondent who may fit into the neutral or minimal response category “?? Internet is little different in dealing with outsiders to the phone/post. I'm not sure of the intent of this question.”

In summary, the majority of respondents said they'd had positive responses and reactions from organisations and individuals about their Internet use. Some of these were outright positive responses, some made positive comments tempered with some minor negative points and the neutral and minimal responses tended to reflect limited familiarity so far. When this is considered, the strong response to this question is that of positive experiences.

Responses from organisations and individuals about Internet use	No. of Responses
Unsure of question	1
Positive responses	11
Negative responses	1
Neutral/modest/minimal	3
Both positive and negative	2

**Table 7.20 Responses from individuals and organisations to Internet**



**Figure 7.20 Responses from individuals and organisations to Internet**

**Q21 What percentage of your existing customers and clients would now use Internet solely as a means of contacting you?**

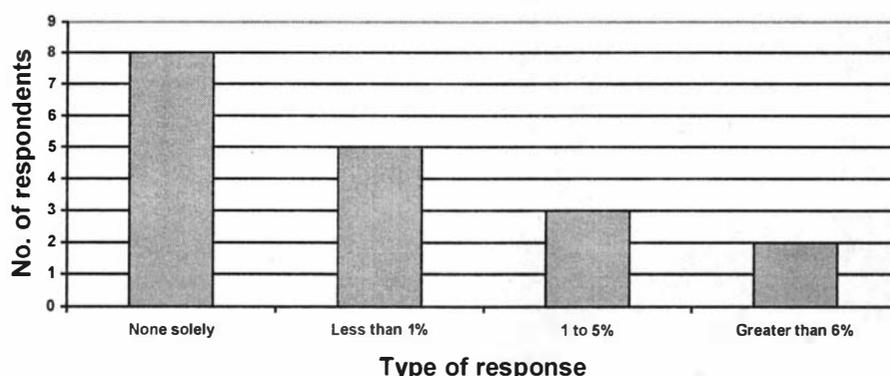
This question was not worded well. With hindsight, it should read "What percentage of your existing customers and clients would now contact you solely via Internet?" All 18 respondents whose organisations were on the Internet answered the question.

Some people replied that existing clients and customers would not use the Internet as the *sole* means of contacting the organisation. They elaborated on this by saying "0%- we have no dependencies of this kind" and "Once a company uses email, they realise how useful it is, so I would have to say 0% use it SOLELY to communicate with us" and "0%-still spread across email, fax and conventional mail (for audit/legal reasons)."

Five responses indicated that less than one percent of existing customers and clients would use Internet as a sole means of contact. At the other extreme, one reply was "0.95" and another was "90% for one of our businesses." Only one reply indicated that the division was more even, "none (solely), it's about 50/50" and only one reply indicated any change in communication patterns with customers and clients, "2% but it is growing."

Internet as sole means of contact	No. of Responses
None solely	8
Less than 1%	5
1 to 5%	3
Greater than 6%	2

**Table 7.21 Internet as sole means of organisational contact**



**Figure 7.21 Internet as sole means of organisational contact**

**Q22 What sectors of the community that do not have access to or who have a strong aversion to using Internet are you aware of?**

There were 17 responses to this question. The most common response was "none" or "none that I'm aware of" with nine responses (over half) in this category. There were a variety of comments in this category and it is difficult to judge whether in fact these categories are the same eg "no one really", "I am not aware" and "unknown?" etc. No differentiation has been made between those people who may have said they didn't know (ie haven't thought about) any sectors who lack access to or have a strong

aversion towards the Internet and those who say they aren't aware of any (ie don't think there are any barriers to participation).

Some of the "no sectors" responses qualified their answers by saying, "none really, most are at least curious" and "More and more businesses that we deal with are introducing email. Many more of our overseas clients are putting up Web sites."

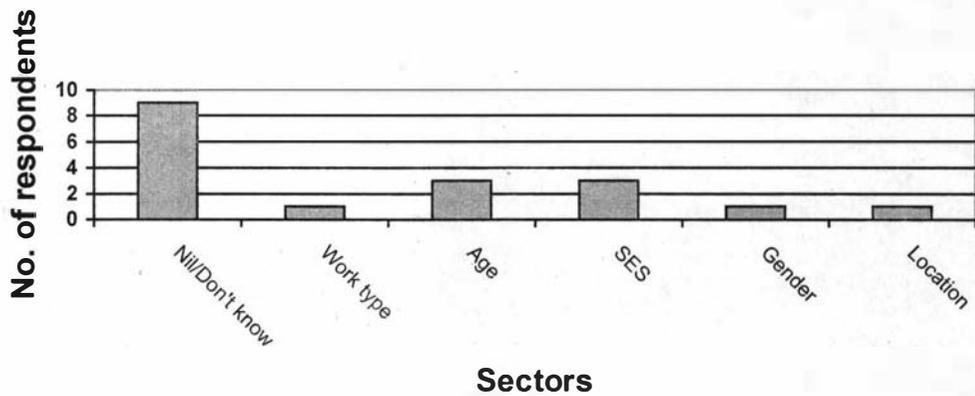
The other ten responses can be categorised as related to age, gender, location, socio-economic status, type of work, attitude or access to computers. Two respondents' comments addressed more than one category.

Three comments were about age, eg "older generation", "older people" and "mainly age related." Only one comment related to gender, eg "a few (do not have access or who have a strong aversion), surprisingly most are women." Location was mentioned by one respondent, "Very rural areas in South Island, not seen as useful or it will be around for a couple of years- a fad" and socio-economic status was mentioned by three respondents, eg "lower socio-economic", "poorer people beneficiaries" and "those on the benefit ☺." One respondent mentioned job type "self employed people" with the comment "Managers (sorry just a joke!), I'm not aware of any" being classified with the other eight who didn't know of any community sectors lacking access.

Despite the prompt in the question "or have a strong aversion to using Internet", this was not commented on by any of the respondents with all comments related to lack of access. As previously mentioned this may indicate a lack of awareness of any individuals or sectors with an aversion to the medium rather than there being none existing. The above comments have been summarised in table 7.22.

Sectors of the community perceived as lacking access or having an aversion to the Internet	No. of Responses
None/ don't know of any	9
Work type	1
Age	3
Socio-economic status	3
Gender	1
Location	1

**Table 7.22 Sectors perceived as lacking access or having an aversion to Internet**



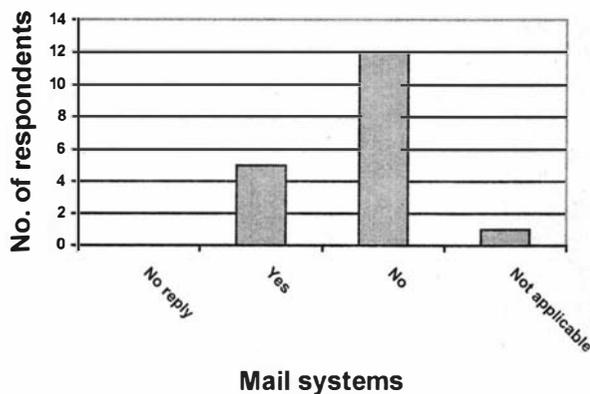
**Figure 7.22 Sectors lacking access or having an aversion to Internet**

**Q23 Do you have a separate system for internal and external mail?**

This was the first of five questions on email and asked respondents whether their organisation had a separate system for internal and external mail. Of the 18 possible respondents answering this section of the questionnaire, five said yes, twelve said no and one respondent said the question was "not applicable." This clearly illustrates that the majority of respondents don't have separate internal and external email systems, which may possibly be due to the small size of the business.

Separate systems for internal and external mail	No. of Respondents
No reply	0
Yes	5
No	12
Not applicable	1

**Table 7.23 Separate internal and external mail systems**



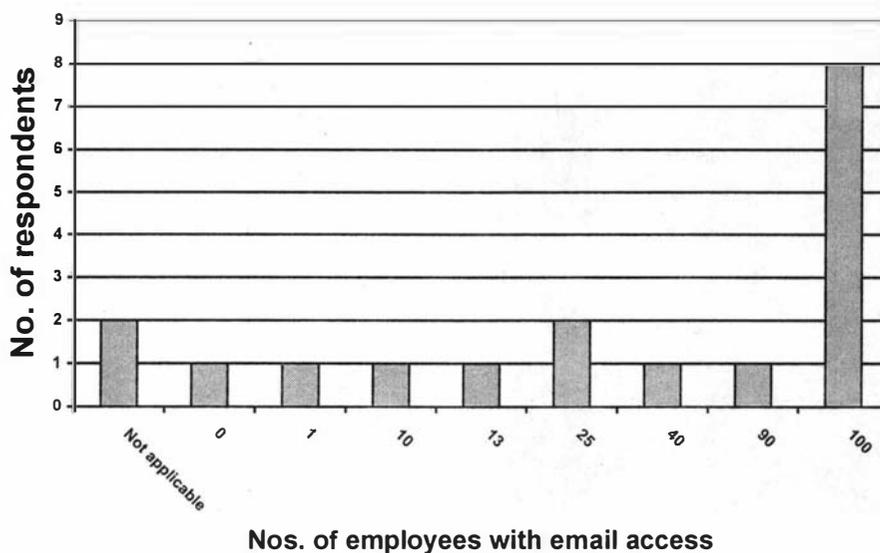
**Figure 7.23 Separate internal and external mail systems**

**Q24 What percentage of employees have access to internal email?**

All respondents answered this question and their responses (in terms of percentage employee access) follow. In question eight, only 50% of respondents said ninety percent or more employees had Internet access and the same is true for internal email access by employees. The other fifty percent of employees said 40% or fewer employees had access to internal mail.

Percentage of employees with access to internal mail	No. of Responses
Not applicable	2
0	1
1	1
10	1
13	1
25	2
40	1
90	1
100	8

**Table 7.24 Employee access to internal email**



**Figure 7.24 Employee access to internal email**

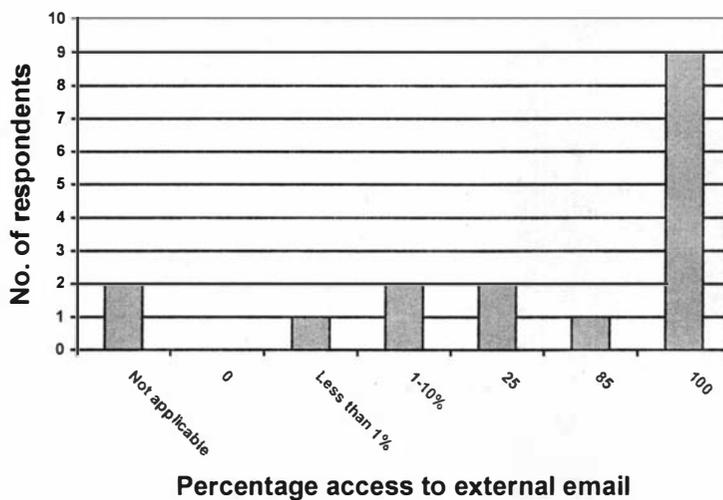
**Q25 What percentage of employees have access to external email?**

There were 17 responses to this question, compared with 18 responses to the previous question relating to employee access to internal email. The responses reveal a similar pattern with seven of the respondents' organisations having less than fifty percent of their staff with access to external email compared with nine respondents for the same proportion of access to internal email. Ten respondents said 85% or more of their staff had access to external email compared with nine respondents saying 90% of staff had access to internal email in the previous question.

The responses (in percentages) are presented in Table 7.25.

Percentage of employees with access to external mail	No. of Responses
Not applicable	2
0	0
Less than 1%	1
1-10%	2
25%	2
85%	1
100%	9

**Table 7.25 Employee access to external email**



**Figure 7.25 Employee access to external email**

**Q26 What is your policy on the use of email for personal communication in your organisation?**

There were 18 responses, which meant that all respondents replied to this question.

Five respondents said their organisation didn't have a policy eg “no policy- freely available”, “no policy- we just don't. We still like to talk to each other” and “do not have one, but many employees also have email at home in their own name.” Two respondents in this category said they didn't have a policy *yet*, possibly indicating that they realised they needed one and were possibly in the process of designing one eg “not defined yet” and “none in place at present.”

Six responses indicated that free and open use of email for personal use by employees at work was acceptable, eg “help yourself”, “unlimited usage” and “no restriction. Don't get caught wasting time and money.”

Two responses were against the use of email for personal purposes during work time eg, “no problem outside of work hours” and “there are no rules except that it should be done during a person's own time. As long as it doesn't interrupt an employee's regular

work, then it's OK.” One respondent’s organisation was against any personal communications at work, “no personal communications (same as phone- a little would be tolerated, I guess).”

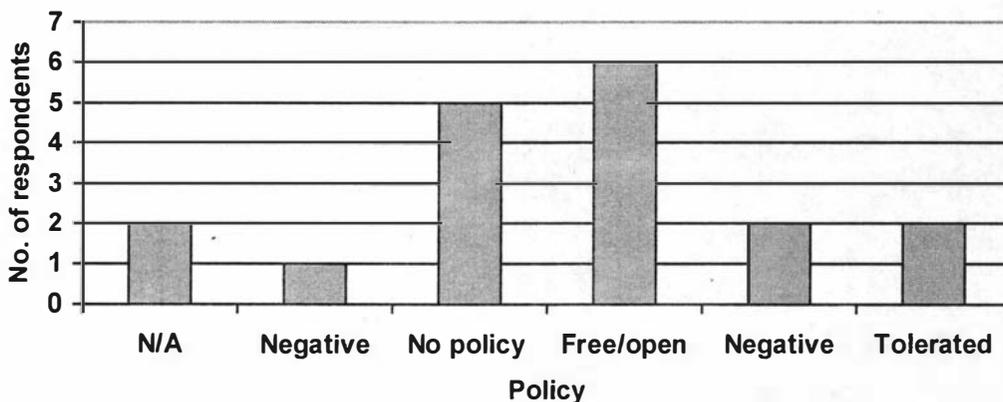
Two responses showed personal email in work time was tolerated often with some provisos, for example, “Generally OK if not abused. Rough records are kept” and “accepted provided it isn't abused.”

Two respondents said that a policy on email was not applicable to the organisations they worked in. They could perhaps be sole proprietors.

In summary, these responses indicate that these respondents tended not to have a policy regarding email usage in their organisation and were tolerant about the use of email for personal communication as long as it didn't interfere with employees' work. The lack of time respondents' organisations had been online, the relatively small amounts of Internet traffic they report and the lack of universal employee access to either internal or external email systems as seen in previous questions may account for few problems with misuse of email so far as well as the lack of email policies reported.

Organisational policy on email usage	No. of Responses
Not applicable	2
Negative	1
No policy (yet)	5
Free and open	6
Negative	2
Tolerated	2

**Table 7.26 Policy on email for personal use at work**



**Figure 7.26 Policy on email for personal use at work**

**Q27 Who, other than the employee, is able to access the employee's email?**

There were 18 replies to this question and the largest group of responses referred to a technical person having access eg “IT manager”, “system administrator” and “LAN technical staff.”

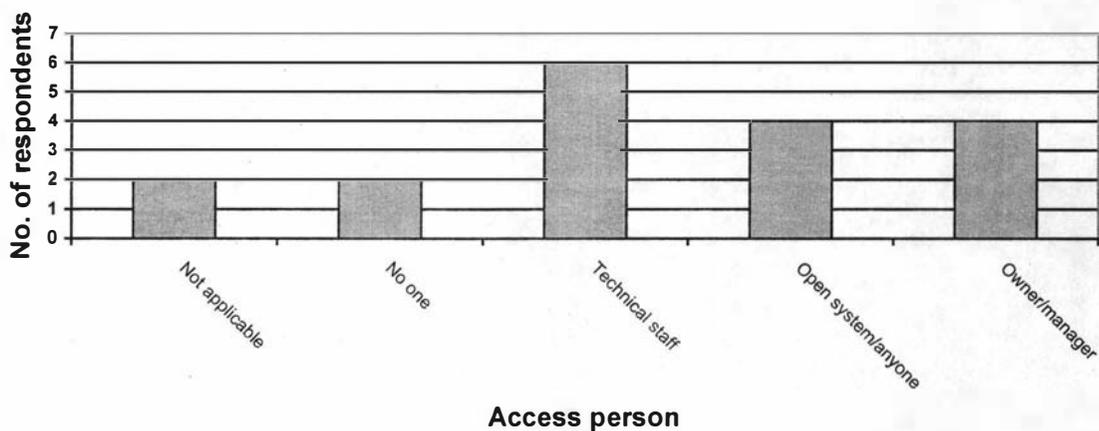
Four respondents said anyone could access the employee's email eg “everyone, although must be at the employee’s computer”, “Directors could if they wanted to, machines are generally left logged on during breaks, so anyone could”, “We have an open system. Mail can be picked up by anyone. We run a business that needs openness. If it is confidential then staff can use other means of communication” and “Basically anybody can access anybody's mail. This helps to allow teams to support one another. The norm is only to access your own, unless you are filling in for someone while they are absent. But there are no restrictions.”

The final group of four responses were that management had access, eg “the branch manager”, “company owners”, “only myself” and “me.” Two respondents each said the question didn’t apply to them and no one had access.

These responses show that technical or nominated staff tend to have the ability to access employees’ email but this is closely followed by a group that said management only access and a group that said anyone could access the email of others.

Ability to access employee's mail	No. of Responses
Not applicable	2
No one	2
Technical/nominated staff	6
Open system/anyone	4
Owner/manager	4

**Table 7.27 Access to employee's email**



**Figure 7.27 Access to employee's email**

**Q28 Do you have a Web browser? If so, which do you use?**

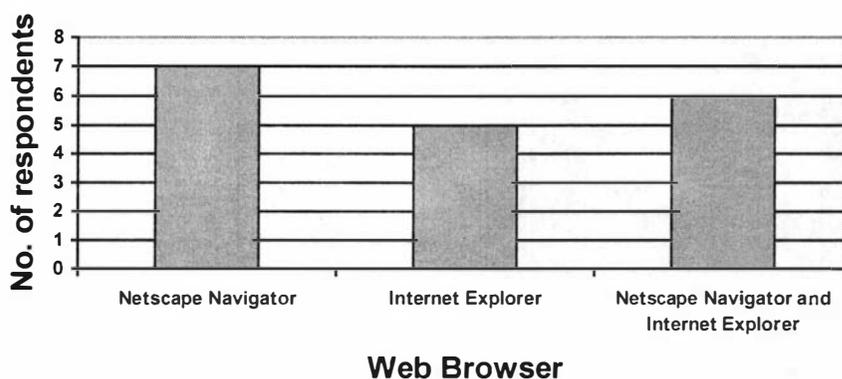
This question was the first of two about Web browsers. The first part of the question asked respondents whether they had a Web browser. All respondents answered yes. They were then asked which Web browser they used. The 18 responses were spread between the browsers as follows: Netscape Navigator (7), Internet Explorer (5) and both Netscape Navigator and Internet Explorer (6). All respondents knew which browser they were using and four responded by naming which version of the browser they used.

Web Browser	No. of Respondents
Yes	18
No	0

**Table 7.28.1 Web browser**

Type of Web Browser	No. of Responses
Netscape Navigator	7
Internet Explorer	5
Netscape Navigator and Internet Explorer	6

**Table 7.28.2 Type of Web browser**



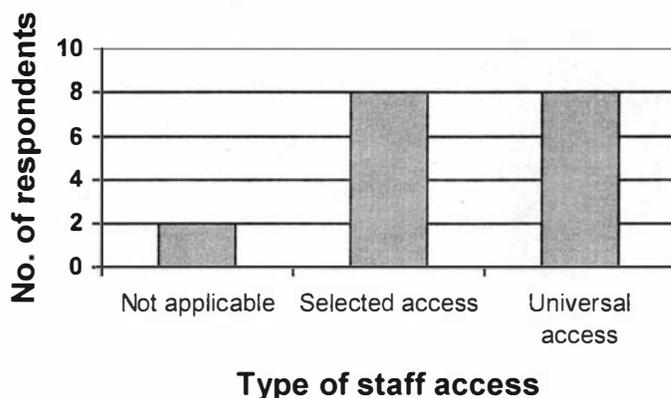
**Figure 7.28.2 Type of Web browser**

**Q29 Do you have universal or selected staff access?**

Respondents were asked whether staff had universal or selected access to the Internet and to respond by ticking the appropriate box. There were 18 responses, which meant that all respondents whose organisations were on the Internet answered this question. The responses can be classified as follows: eight have selected staff access to the Internet including one saying “(about 90%)”, eight have universal staff access to the Internet and two people said the question was not applicable.

Staff access to Internet	No. of Responses
Not applicable	2
Selected access	8
Universal access	8

**Table 7.29 Staff access to Internet**



**Figure 7.29 Staff access to Internet**

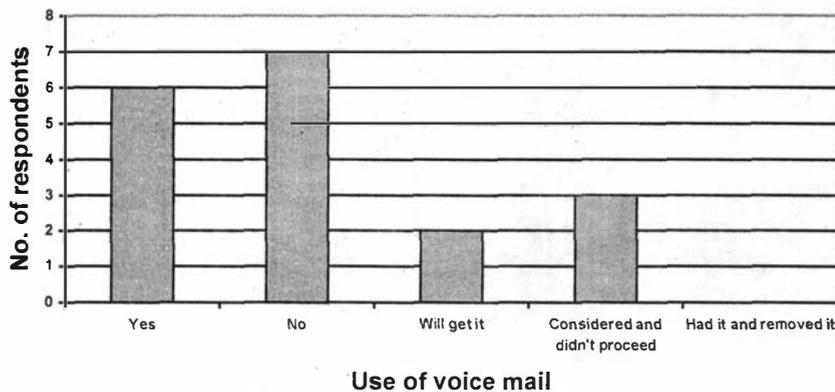
## Voice Mail

### Q30 Does your organisation have voice mail?

This was the first of two questions about voice mail. The question was "does your organisation have voice mail?" and five possible categories were indicated. One respondent said "Auckland yes, ourselves no" and this has been included in the "yes" category. One person who said "considered, didn't proceed" added that it was "too costly to add to our PABX." Just under half of all respondents' organisations either have voice mail or will be getting it with over half of the responses indicating they don't have voice mail, even after consideration. None of the organisations surveyed said they had removed a voice mail system.

Use of voice mail in your organisation	No. of Responses
Yes	6
No	7
Will get it	2
Considered and didn't proceed	3
Had it and removed it	0

**Table 7.30 Organisational use of voice mail**



**Figure 7.30 Organisational use of voice mail**

**Q31 If you do have it, what are the main functions it is used for?**

Those respondents who had voice mail were asked the main functions for which it was used. There were comments from the six respondents who had voice mail with one covering two categories, eg “basic auto attendant/ interactive voice response and message taking and call diversion” and the other “yes” responses included “messages when office attended or mobiles switched off” and “collating messages missed by our receptionist.”

Uses for voice mail within organisations	No. of Responses
Taking messages	5
Reception and retrieval of information	1

**Table 7.31 Voice mail uses**

**7.2 Summary**

This chapter presented the results from questionnaires sent via email to New Zealand organisations from the same seventeen industry sectors used in chapter six. All respondents in this survey had email addresses and these were used to send the surveys.

The findings showed that most organisations had limited experience on the Internet and tended to have connected for communication with customers and suppliers. Their ISPs were primarily selected on the basis of cost and while there were few respondents, slightly more were employed in the two sectors of agriculture, forestry and fishing and the construction sectors. The respondents tended to be evenly spread between small and medium sized organisations with most operating from one location with over half not operating from any overseas locations. Internet access tended to be polarised with either very few or nearly all employees being able to use it at work.

The most popular current uses of the Internet were for data collection and external email while the most popular predicted future uses were external email and data transfer. Over half the respondents reported that they had received positive responses

from organisations and individuals about their Internet use although the majority said new existing customers would use the Internet as their sole means of communicating with the business.

The majority of other questions didn't show any particular trends with only a few responses being made or the responses being spread across categories.

## 8 Results and Analysis of Paper Questionnaires Sent to SMEs

### 8.1 Introduction

6942 questionnaires were sent to organisations that were on the mailing lists of seven Small Medium Enterprise Centres (SMECs) in late 1998. The number of small businesses on the various mailing lists ranged from 40 to 4000. Those SMECs that gave permission to include the questionnaire with their next mailing were self-selected. 478 questionnaires were returned, giving a response rate of 14.5%. As the researcher relied on SMECs to send the questionnaires out with their mailings and didn't have access to mailing lists, no follow up reminders or questionnaires were sent. The following results are from the completed 478 questionnaires.

#### PART I

##### Q1 Are you receiving help from the business development board or a small enterprise centre or any other organisation on information technology?

The response to this question very clearly indicated that only 6.1% of those small businesses who answered the questionnaire were getting any help on information technology from any association offering help to small businesses such as the (now extinct) business development board or a small business enterprise centre.

Category	No. of Responses	Percentage of Responses
Yes	29	6.1
No	441	92.3
Missing	8	1.7

Table 8.1.1 Help received about information technology

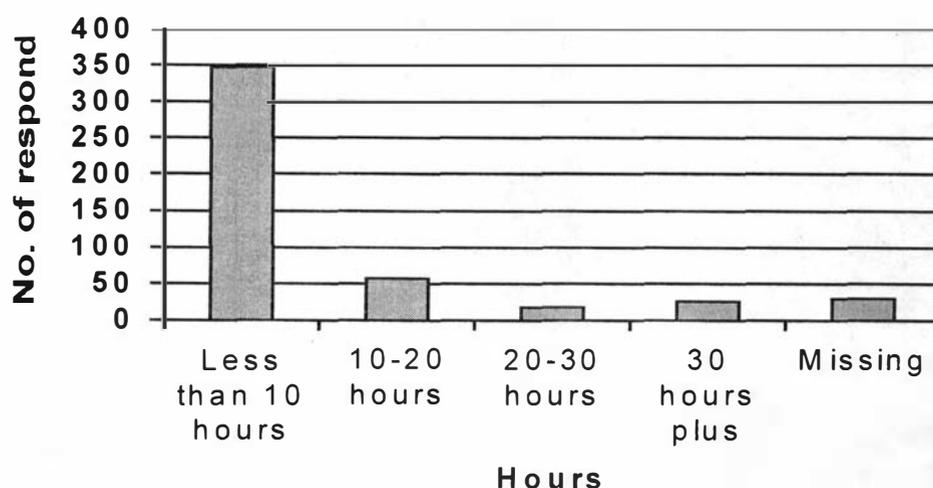


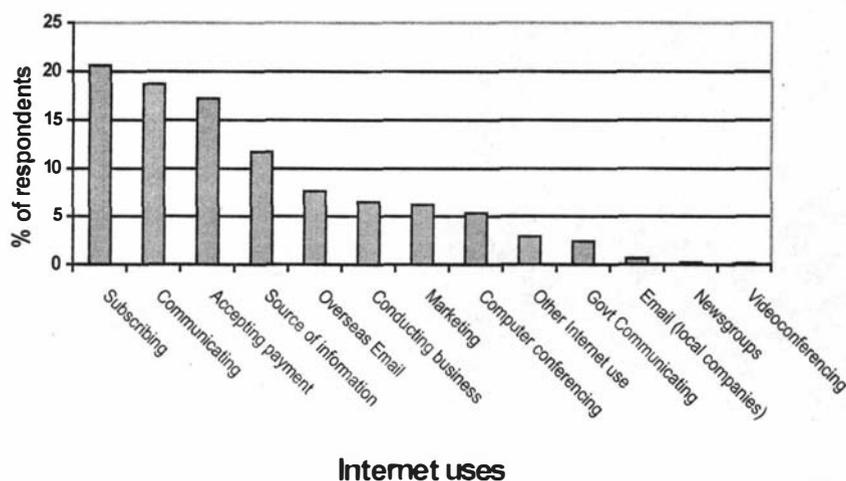
Figure 8.1.1 Help received about information technology

**Q2 How long has your organisation been using the Internet for business purposes?**

Respondents were given a choice of six time categories to indicate the length of time their organisation had been using the Internet for business.

Length of time on Internet	No. of Respondents	Cumulative % of Respondents
Less than 6 months	112	23.4
6-12 months	106	45.6
1-2 years	145	75.9
2-3 years	60	88.5
3-4 years	24	93.5
More than 4 years	10	95.6
Missing	21	100

**Table 8.1.2 Length of time on the Internet**



**Figure 8.1.2 Length of time on the Internet**

457 of the 478 questionnaire respondents stated the length of time their organisations had been on the Internet with 75.9% stating they'd been on for less than two years, and the majority of these (30.3%) indicating that they'd been online between 12 and 24 months. Only ten respondents' organisations had been on for more than four years. There is a decreasing trend suggesting that there are increasingly more organisations using the Internet.

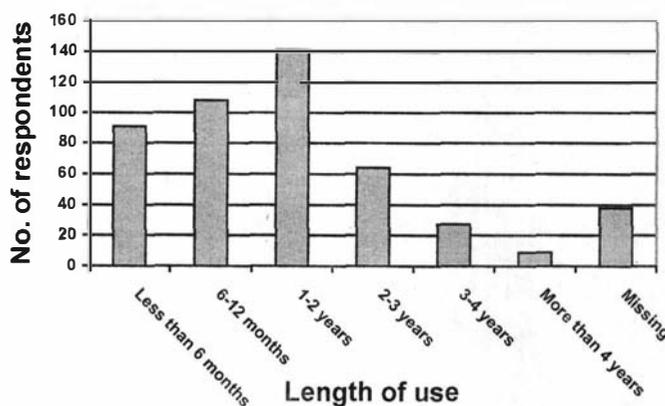
The results seem to reflect the fact that the Internet is a relatively new technology and, therefore, hasn't been used a great deal by small businesses for longer than two years. This may be because they are late adopters, lack information on how to proceed or are waiting for the Internet to be tried and tested by other small businesses before they commit themselves to getting online.

**Q3 How long has your company had WWW access?**

There were 440 responses to this question with 38 respondents failing to answer the question. Nearly 30% of organisations had had WWW access for between one and two years which was very similar to the time that they reported they had used the Internet for business purposes in the previous question. Only 7.5% of respondents had had WWW access for more than three years, indicating that the medium is still relatively recent and that these SME owners do not tend to be early adopters. The numbers show a similar trend to the previous question in terms of time online. In retrospect, it would have been interesting to explore respondents’ understandings of the terms “Internet” and “World Wide Web.”

Length of time connected to WWW	No. of Respondents	% of Respondents
Less than 6 months	91	19.0
6-12 months	108	22.6
1-2 years	141	29.5
2-3 years	64	13.4
3-4 years	27	5.6
More than 4 years	9	1.9
Missing	38	7.9

**Table 8.1.3 Time on the WWW**



**Figure 8.1.3 Time on the WWW**

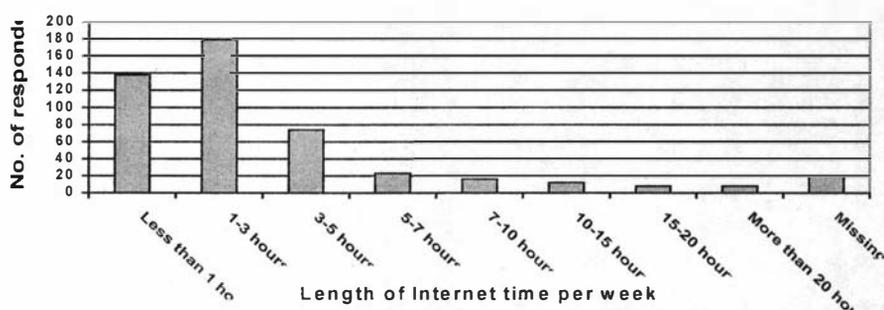
**Q4 On average, how many hours do you (as an individual) use the Internet for work purposes per week?**

There were 458 responses to this question with eight possible categories. There was a very strong indication that two thirds of respondents (66.3%) were making limited use (fewer than three hours per week) of the Internet for business purposes and 81.8% for fewer than 5 hours per week. Reasons for this may include the perceived lack of valuable information online, frustration with achieving a connection, limited skills finding information online and other aspects of the business having priority.

With 457 organisations on the Internet in this survey, a higher usage of the Internet per week could have been expected. When the question (ie question 4) is read in conjunction with question 15.4 on self-reported skill level, only 8.2% said their skill level was “excellent”, so it doesn’t appear as though their skills are saving them time online. Question 10 findings show that 71.8% of organisations did not provide any training for staff. This finding of low hours online again appears paradoxical. Explanations may be that small businesses perceive low value in online information at the moment, frustration with achieving a connection, have limited skills for finding information online and other aspects of the business have priority. This may also reflect the finding in question one that only 6.1% of respondents were receiving help from any organisation on IT matters.

Time on Internet for business use	No. of Respondents	% of Respondents
Less than 1 hour	138	28.9
1-3	179	37.4
3-5	74	15.5
5-7	23	4.8
7-10	16	3.3
10-15	12	2.5
15-20	8	1.7
More than 20	8	1.7
Missing	20	4.2

**Table 8.1.4 No. of hours spent on the Internet per week**



**Figure 8.1.4 No. of hours spent on the Internet per week**

**Q5 How many other company personnel (excluding yourself) also use the Internet for work purposes?**

Respondents gave the number of employees that used the Internet in their small businesses. While it appears that very few employees in small businesses either had or were allowed Internet access for work purposes at work, this to some extent reflects the small number of people employed in SMEs.

Another interesting finding is that a sizeable percentage of the sample (40.4%) said that no employees were allowed Internet access. It could be surmised that lack of

training, lack of access to Internet capable PCs and use solely by the Managing Director accounts for these figures.

No. of Employees	No. of Respondents	% Respondents
None	193	40.4
Less than 5	217	45.4
5-10	29	6.1
10 and above	24	5.0
Missing	15	3.1

**Table 8.1.5 No. of employees using the Internet**



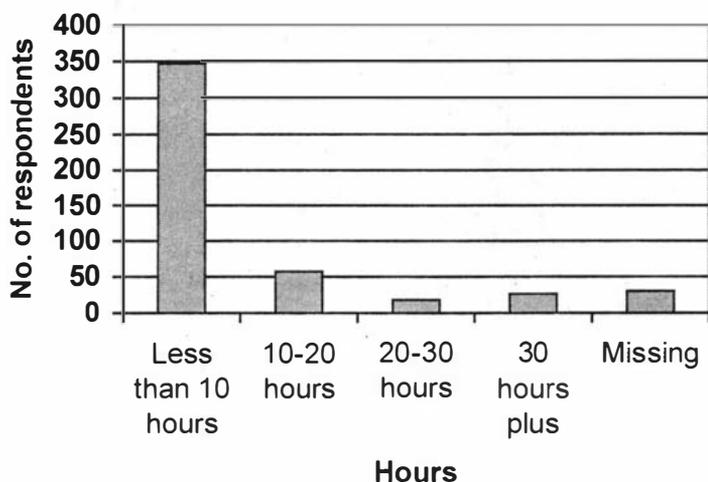
**Figure 8.1.5 No. of employees using the Internet**

**Q6 On average, for how many hours per week does your company as a whole use the Internet?**

There were 448 respondents who answered the question and the vast majority (72.6%) said their companies used the Internet for fewer than 10 hours per week. This confirms the results in question four where 66.3% of business owners were using the Internet for fewer than three hours per week.

Av. no of Internet hours per week	No. of Respondents	% Respondents
Less than 10 hours	347	72.6
10-20 hours	57	11.9
20-30 hours	18	3.8
30 hours plus	26	5.4
Missing	30	6.3

**Table 8.1.6 No. of total organisational Internet hours weekly**



**Figure 8.1.6 No. of total organisational Internet hours weekly**

**Q7 What does your company use the Internet for?**

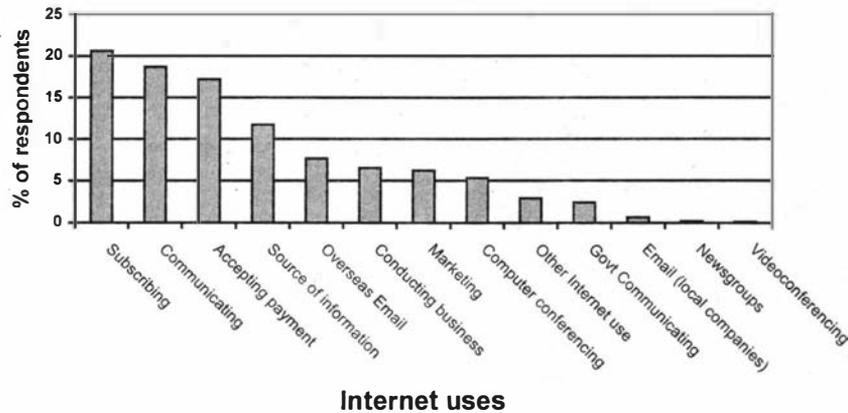
458 respondents answered this question with 20 questionnaire respondents omitting to respond. There were 12 categories given and an open-ended response space.

Respondents were asked to tick the categories of Internet use by the company. There were a total of 1771 responses. The main use is subscribing to electronic newsletters followed by communicating with customers and accepting payment.

The most highly rated responses cover information seeking, sending information to customers and financial transactions. These findings illustrate the limited range of uses that respondents were putting the Internet to within their businesses.

Company uses of Internet	Percentage of Respondents	Percentage of all cases
Subscribe to electronic newsletters	20.6	79.7
Communicating with customers	18.7	72.5
Accepting payment	17.2	16.6
Source of information	11.7	45.4
Email (overseas companies)	7.6	29.3
Conducting business	6.5	25.1
Marketing	6.2	23.8
Computer conferencing	5.3	20.3
Other Internet use	2.9	11.1
Communicating with government agencies	2.4	9.4
Email (local companies)	0.6	2.4
Newsgroups	0.2	0.9
Videoconferencing	0.1	0.2

**Table 8.1.7 Company uses of Internet**



**Figure 8.1.7 Company uses of Internet**

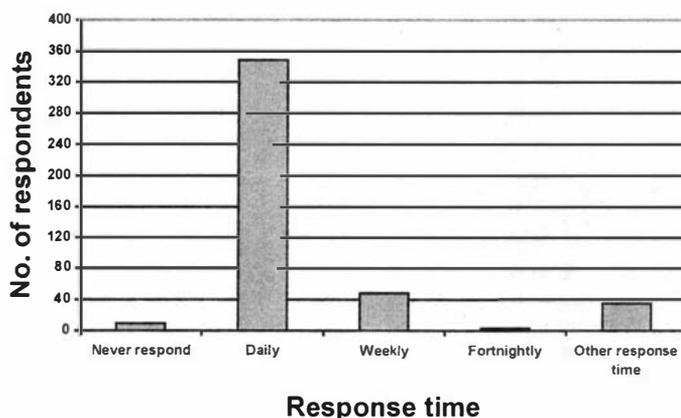
**Q8 How immediately do you respond to queries you receive?**

The question asked respondents about their responsiveness to queries received by the organisation via the Internet. There were 443 responses to this question. Some people were brave enough to say that they didn't respond (1.9%). The majority (72.8%) said they responded daily although it is worth noting 7.3% of respondents didn't answer this question and 7.3% gave another response time to the given prompts.

The 35 respondents who said their response time to queries was other than the given prompts: as soon as possible/ immediately (12), we don't get queries (12), within two-three days (8), regularly (1), hourly (1) and can't say at this stage (1). With these responses added in, nearly three quarters of respondents replied to emails received on their Web site each day.

Response time to queries	No. of Respondents	Percentage of Respondents
Never respond	9	1.9
Daily	348	72.8
Weekly	48	10.0
Fortnightly	3	0.6
Other response time	35	7.3
Missing	35	7.3

**Table 8.1.8 Response times to queries**



**Figure 8.1.8 Response times to queries**

**Q9 Please indicate the level of use within your company for each of these Internet applications.**

	Never	<25%	25-50%	>50%	Missing
Email	3.6	27.2	22.0	41.2	6.1
WWW	5.6	41.2	27.8	10.9	14.4
Newsgroups	37.0	17.6	2.7	0	42.7
FTP	30.5	24.3	4.6	.4	40.2
Telnet	44.6	5.4	0	0	50.0

**Table 8.1.9 Company use of Internet applications**

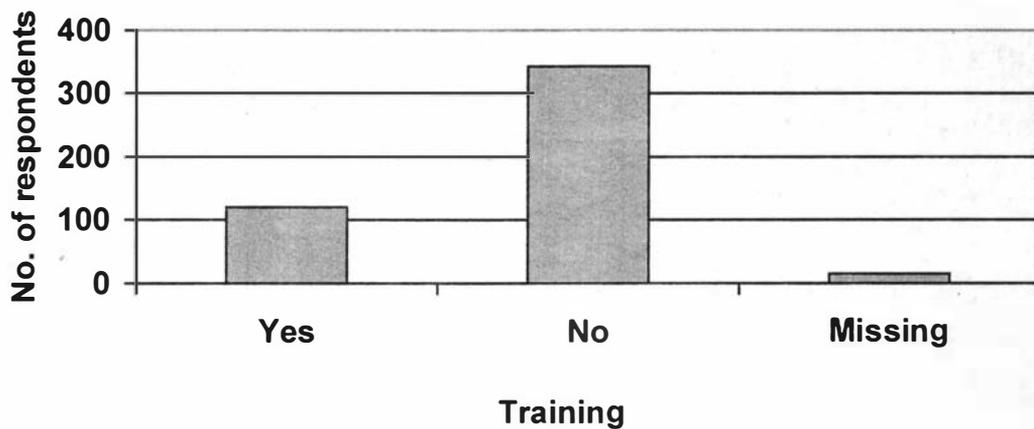
The table indicates that the most popular use respondents' organisations were currently making of the Internet was email selected by 197 respondents at over fifty percent of the time online followed by the WWW with less than 25% of time spent online on this.

The highest category for each of newsgroups, FTP and Telnet was the missing data category, possibly indicating respondents didn't know what these were, or conversely, that they perceive little value in these applications.

**Q10 Does your company provide training for staff to acquire a working knowledge of the above applications?**

Internet Training	No. of Respondents	% of Respondents
Yes	120	25.1
No	343	71.8
Missing	15	3.1

**Table 8.1.10 Company training**



**Figure 8.1.10 Company training**

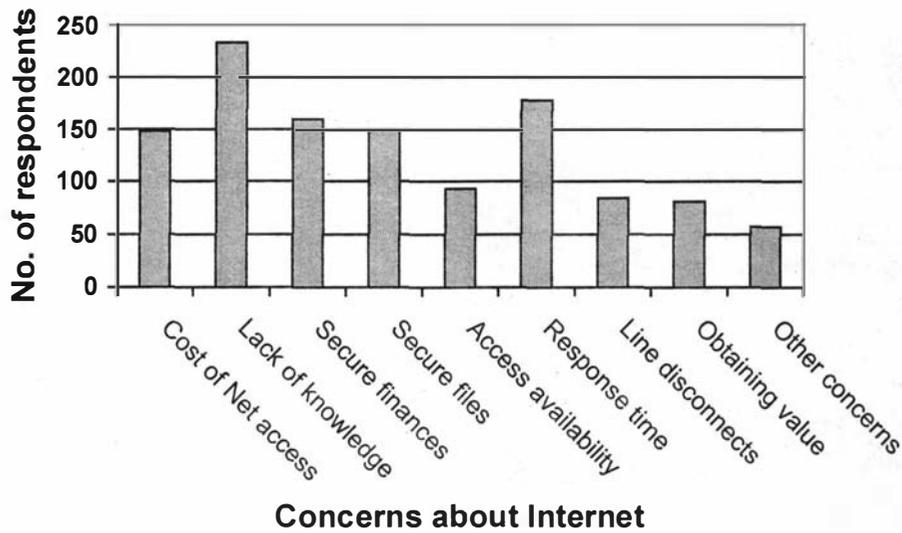
71.8% of respondents said that their company didn't provide training for staff on the Internet. One reason is that with so little time spent online, Internet training is not perceived as necessary. Another is that organisations perceive Internet to be so straightforward and easy to use that they don't think training is necessary. SMEs are perhaps also more unlikely than large organisations to have a training budget.

**Q11 What are your company's main concerns about using the Internet?**

An interesting finding from this question is that the primary concern of respondents was their lack of knowledge about the Internet. A previous question indicated that very little training has occurred. There may be a number of reasons for this including cost of the training and the time away from work that this would incur. Response time was signalled as the next most significant concern at 15% followed by security of financial transactions (13.5%) and security of company files (12.6%).

Concerns	No. of Respondents	% of Respondents
Cost of Net access	148	12.5
Lack of knowledge	233	19.7
Security of financial transactions	160	13.5
Security of company files	149	12.6
Access availability	93	7.9
Response time	178	15.0
Line disconnects	84	7.1
Obtaining value for money	81	6.8
Other concerns	57	4.8

**Table 8.1.11 Company's main concerns about using the Internet**

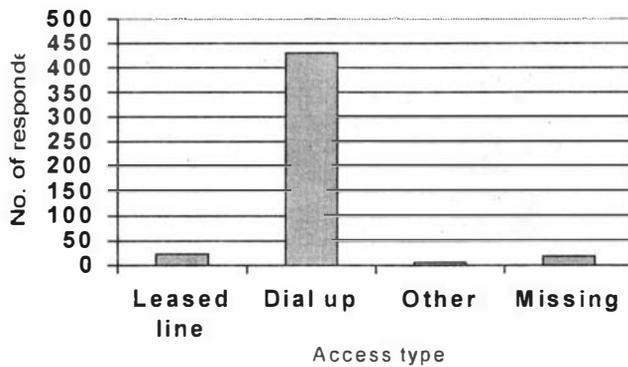


**Figure 8.1.11 Company's main concerns about using the Internet**

**Q12 (1) What type of facility does your company have?**

Type of Net access	No. of Respondents	% of Respondents
Leased line	23	4.8
Dial up	430	90.0
Other	6	1.3
Missing	19	4.0

**Table 8.1.12.1 Company's Net access**



**Figure 8.1.12.1 Company's Net access**

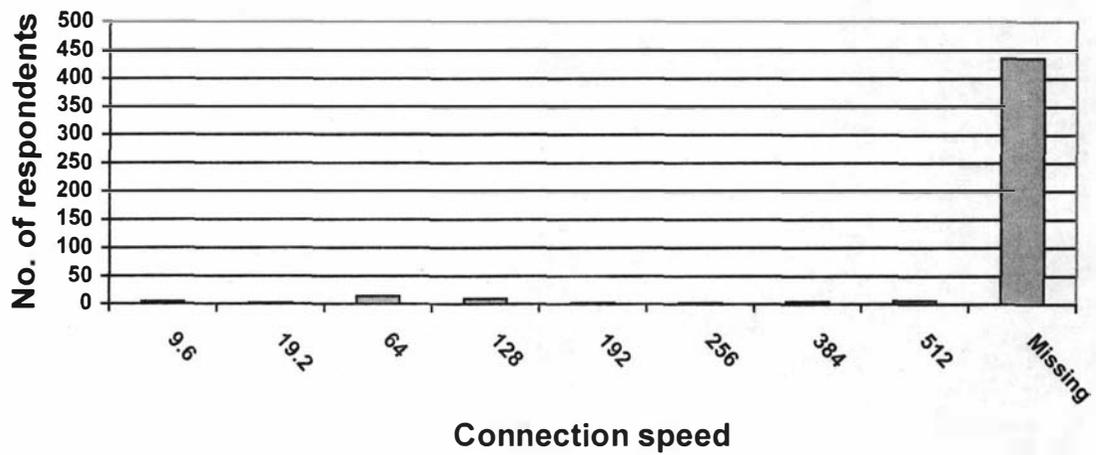
This clearly indicates the popularity of dial up access.

**Q12(2) If your company has a leased line, which speed is your company currently enjoying (in kbps)?**

There appeared to be some confusion with this question by a number of respondents. Twenty three of them had indicated in the previous question that they had a leased line but valid responses were received from 43 people. Of these 43 responses, 32.6% named 64 kbps at the connection speed.

Speed (in kbps)	No. of Respondents	% of Respondents
9.6	4	0.8
19.2	2	0.4
64	14	2.9
128	9	1.9
192	2	0.4
256	2	0.4
384	4	0.8
512	6	1.3
Missing	435	91.0

**Table 8.1.12.2 Connection speed**

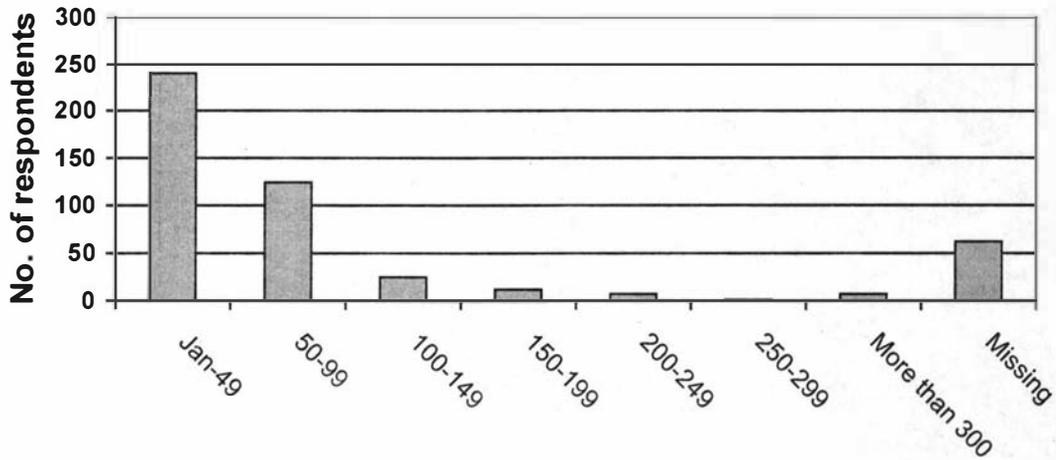


**Figure 8.1.12.2 Connection speed**

**Q12(3) If your company has dial-up access, what is your company's average monthly Internet bill?**

Cost (in dollars)	No. of Respondents	% of Respondents
1-49	240	50.2
50-99	124	25.9
100-149	25	5.2
150-199	12	2.5
200-249	7	1.5
250-299	1	0.2
More than 300	7	1.5
Missing	62	13.0

**Table 8.1.12.3 Monthly Internet bill**



**Average monthly Internet bill**

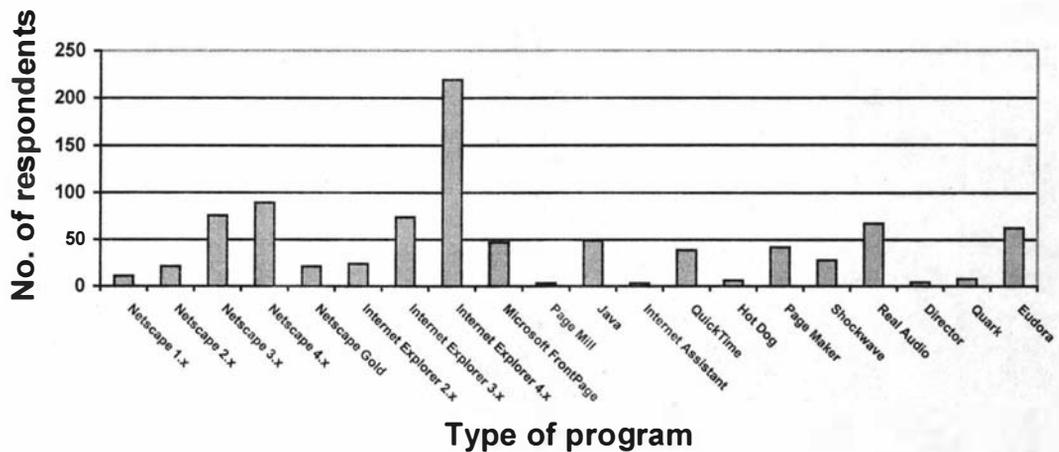
**Figure 8.1.12.3 Monthly Internet bill**

Since this survey, Internet access has become cheaper. At the time, 50.2% of all respondents and 57.7% of respondents who gave a monetary amount had monthly Internet bills of less than fifty dollars. It does depend on the nature of their agreement with their ISP, but it would seem that this is entirely reasonable given the data previously analysed of limited time spent online.

**Q13 Please indicate if your company uses any of the following:**

Type of Program	No. of Respondents	% of Respondents
Netscape 1.x	11	1.2
Netscape 2.x	21	2.4
Netscape 3.x	76	8.5
Netscape 4.x	89	10.0
Netscape Gold	21	2.4
Internet Explorer 2.x	24	2.7
Internet Explorer 3.x	74	8.3
Internet Explorer 4.x	219	24.5
Microsoft FrontPage	47	5.3
Page Mill	3	0.3
Java	49	5.5
Internet Assistant	3	0.3
QuickTime	39	4.4
Hot Dog	6	0.7
Page Maker	42	4.7
Shockwave	28	3.1
Real Audio	67	7.5
Director	4	0.4
Quark	8	0.9
Eudora	62	6.9

**Table 8.1.13 Company use of software**



**Figure 8.1.13 Company use of software**

These figures indicate that small businesses appear to be using a range of programs with 218 respondents using Netscape products and 320 using Microsoft. As previous

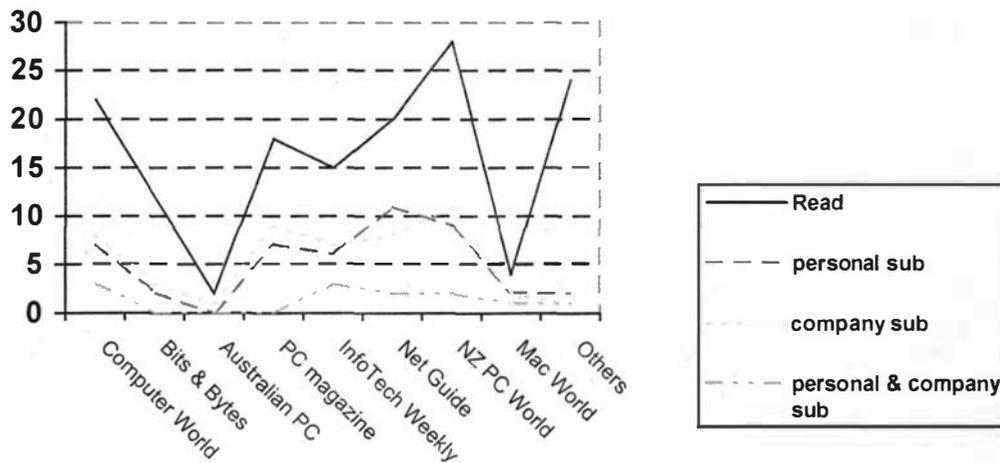
questions have revealed however, not much time is spent online and when it is, there is a concern about the lack of knowledge about Internet.

**Q14 Do you and your company subscribe to any computer magazines? (X= personal subscription, C= company subscription and B= both)**

It appeared the majority of respondents weren't readers of computer magazines. The most popular magazine read was NZ PC World, followed by Net Guide and Computer World. The question asked respondents to mark those titles read with an X (personal subscription), C (company subscription) or B (both). Few respondents did this, with most respondents just ticking the boxes. For this reason, it doesn't appear useful to analyse these categories.

Title	Tick	X	C	B	Missing
Computer World	22	7	8	3	438
Bits & Bytes	12	2	3	0	461
Australian Personal Computer	2	0	1	0	475
PC magazine	18	7	9	0	444
InfoTech Weekly	15	6	7	3	447
Net Guide	20	11	8	2	437
NZ PC World	28	9	11	2	428
Mac World	4	2	2	1	469
Others	24	2	1	1	450

**Table 8.1.14 Computer magazine subscriptions**

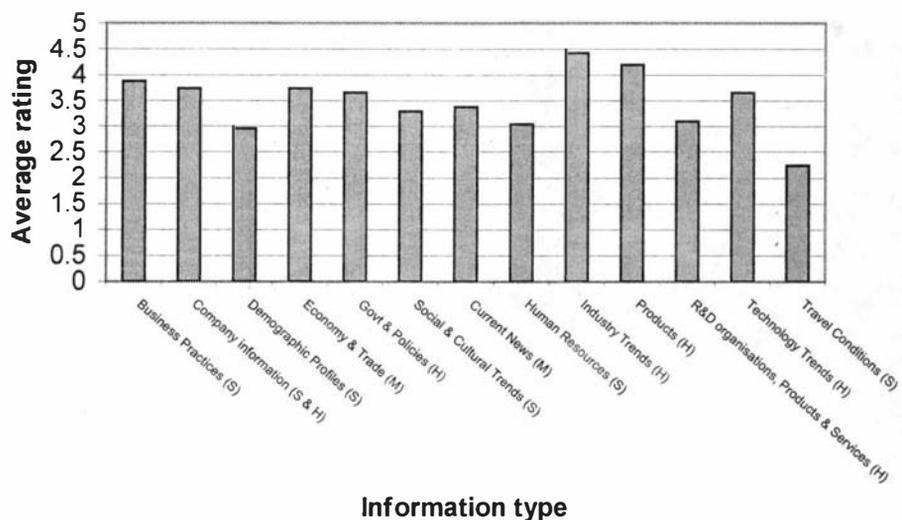


**Figure 8.1.14 Computer magazine subscriptions**

**Q15.1 How important are the following types of information on the external environment to your company?**

Type of Information	1	2	3	4	5	6	7	
	Totally Unimportant			Quite Important			Very Important	Missing
Business Practices (S)	5.4	7.3	13.8	24.7	15.9	14.4	9.6	8.8
Company information (S & H)	7.1	10.0	9.4	23.4	16.7	14.6	7.7	10.9
Demographic Profiles (S)	13.6	16.9	15.3	17.4	12.6	6.9	4.0	13.4
Economy & Trade (M)	8.2	9.4	11.1	19.5	18.0	13.2	9.4	11.3
Govt & Policies (H)	10.3	10.0	12.8	15.7	15.3	15.1	9.6	11.3
Social & Cultural Trends (S)	11.1	15.7	15.1	18.2	13.4	10.3	5.6	10.7
Current News (M)	9.4	13.2	15.7	19.5	16.3	10.5	4.6	10.9
Human Resources (S)	11.7	16.7	17.8	18.6	8.4	7.7	6.1	13.0
Industry Trends (H)	4.4	5.4	7.5	17.4	19.7	22.4	14.6	8.6
Products (H)	6.1	7.7	10.5	15.5	15.9	21.1	14.0	9.2
R&D Organisations, Products & Services (H)	11.1	15.5	14.6	12.8	11.3	11.3	6.9	16.5
Technology Trends (H)	6.7	8.6	10.7	15.3	16.5	17.6	8.6	16.1
Travel Conditions (S)	29.1	23.2	14.4	10.7	5.6	2.3	2.9	11.7

**Table 8.1.15.1 Importance of information to company**



**Figure 8.1.15.1 Importance of information to company**

Respondents were given a list of 13 types of information about their external environment and asked how important each was to their company. The data type was classified as hard (H), soft (S) or medium (M). Soft information was defined as needing further processing before it could be usefully applied to the company while hard information was quantitative (easily measured and monitored).

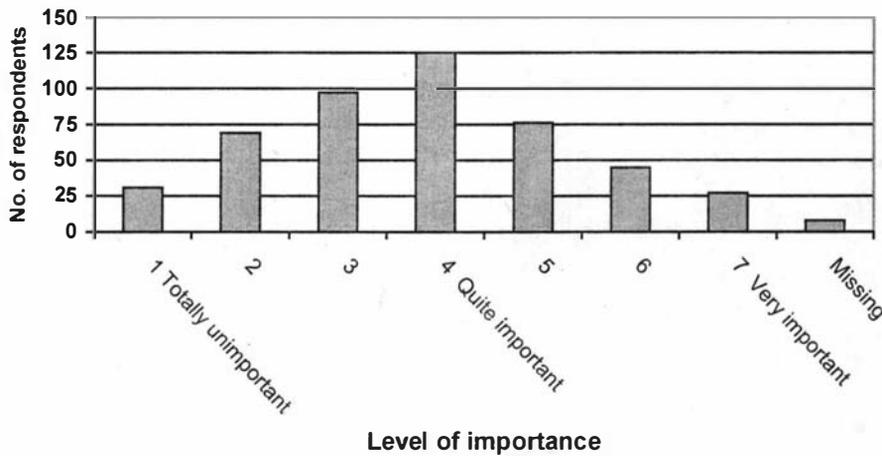
Using this definition, the two types of information about the external environment seen as most important to companies were industry trends and technology trends, both classified as soft information and ranked as 6 on the 7 point scale. They were followed with information about products at 5 on the scale with most other information types at mid scale. Information on travel conditions was given the totally unimportant ranking at 1 with information about R&D organisations, products and services at 2.

The midpoint of each type of information on the seven point scale was determined. Most of those types of information deemed soft tend to the left (ie being less important) with R & D going against this trend. It is surmised that respondents do not perceive the Internet as a good information source for soft data.

**Q15.2 How would you rate the significance of the Internet as a source for such kinds of information to your organisation?**

Category	No. of Respondents	% of Respondents
1 Totally unimportant	31	6.5
2	69	14.4
3	97	20.3
4 Quite important	125	26.2
5	76	15.9
6	45	9.4
7 Very important	27	5.6
Missing	8	1.7

**Table 8.1.15.2 Rating significance of Internet as organisational information source**



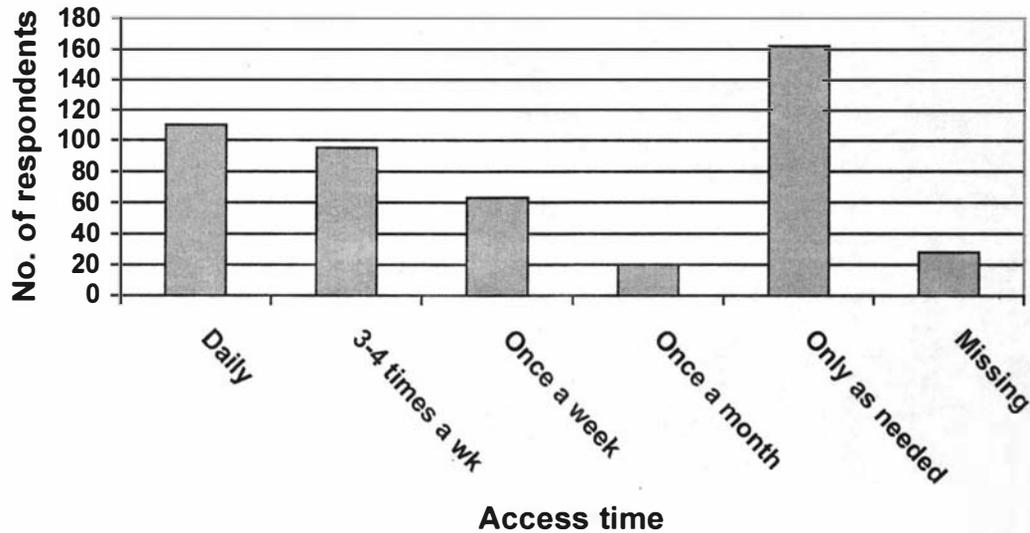
**Figure 8.1.15.2 Rating significance of Internet as organisational information source**

The highest percentage of respondents gave a “quite important” or mid ranking for finding information on the Internet relevant to their organisation but overall the responses show a slight bias towards the Internet being unimportant as a source for organisational information.

**Q15.3 How often do company personnel access the Internet for such information?**

Category	% of Responses	% of Respondents
Daily	110	23.0
At least 3-4 times a week	95	19.9
Once a week	63	13.2
Once a month	20	4.2
No regular basis, only as and when needed	162	33.9
Missing	28	5.9

**Table 8.1.15.3 Company personnel accessing Internet for information**



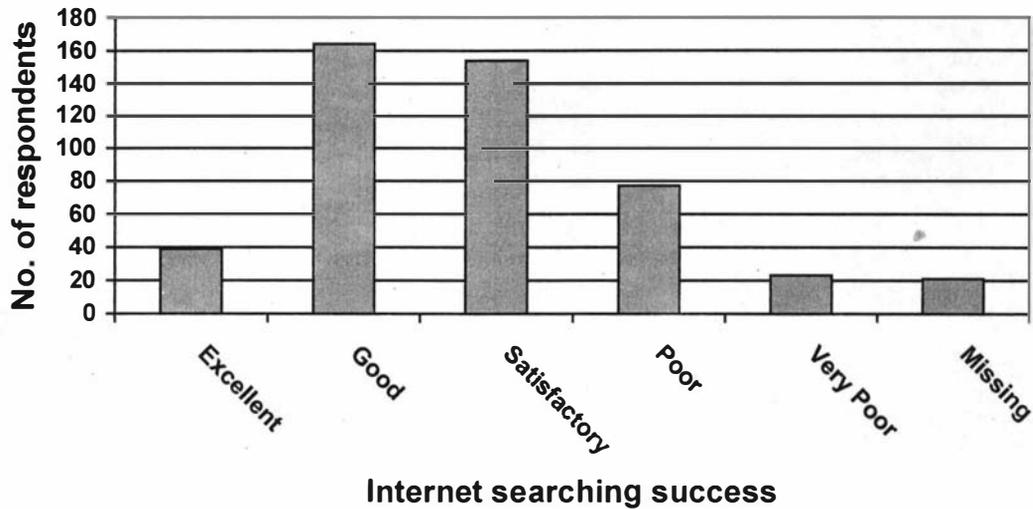
**Figure 8.1.15.3 Company personnel accessing Internet for information**

This question continues to refer to the list of information types given in Q5.1. Apart from accessing the Internet on an “as needed” basis, the data displays a downward trend with nearly a quarter of company employees accessing the Internet for information daily. As noted in previous questions, time spent online per week is less than five hours so while access is frequent, duration is short.

**Q15.4 How would you rate your own success in finding the information you are looking for on the Internet?**

Category	No. of Respondents	% of Respondents
Excellent	39	8.2
Good	164	34.3
Satisfactory	154	32.2
Poor	77	16.1
Very Poor	23	4.8
Missing	21	4.4

**Table 8.1.15.4 Rating of own success in finding Internet information**



**Figure 8.1.15.4 Rating of own success in finding Internet information**

Sixty six percent of respondents classified themselves as either good or satisfactory in finding the information they required. This is perhaps higher than might have been anticipated when their previous comments about time spent online and lack of training are considered. When read in conjunction with question 15.2 (where 26.2% of respondents rated the significance of Internet as an organisational information source as quite important (midpoint) on the scale), the good or satisfactory response to Q15.4 may indicate that not all the information they require is online and/or they may be unable to find it.

**Q16.1 Which of the following factors does your company regularly monitor?**

Respondents were asked which factors they monitored (see column 2), then whether Internet was their main source of information for that factor (column 3), if Internet was not their main source of information for that factor (column 4) and whether they used both Internet and non-Internet sources of information to monitor that particular factor (column 5).

The factors were classified into either hard or soft. As in Q 15.1, soft information was defined as requiring further processing and hard information as data that could be immediately used. Of the sources regularly monitored, the highest scored ones were company’s product quality (9.1%) followed by overall market size for product or service (8.2%). Lowest scored was R&D performance (2.8%) followed by distribution network (3.4%). The categories do not add up as respondents could make more than one response.

This question revealed that 53.5% of all 478 questionnaire respondents said they regularly monitored at least one of the given factors. The percentages in the boxes indicate how many of the 478 respondents ticked that particular category. The three most highly monitored factors were their company’s product quality (31.3%), overall

market size for their product or service (28.2%) and competitors' product quality (23%).

In all 18 factors, respondents said sources other than the Internet were where their information came from. The most selected factor was overall market size for the company's product or service (42.6%) followed by the company's product quality (40.1%) and annual market growth rate (39.5%).

Factor	Regularly Monitored	Internet main source of information	Internet not main source of information	Internet and non-Internet sources both used
Overall market size for your product/service (S)	8.2	6.3	7.3	8.5
Annual market growth rate (S)	6.5	3.9	6.8	4.7
Historical profit margin (H)	6.4	1.0	6.5	3.8
Competitive intensity (S)	6.2	7.2	6.0	7.5
Company's market share (H)	5.3	2.3	6.0	3.8
Competitor's market share (H)	4.7	5.3	5.4	4.7
Company's growth of market share (H)	4.6	1.0	5.6	4.7
Competitor's growth of market share (H)	3.5	3.6	4.8	3.8
Company's product quality (S)	9.1	7.9	6.9	4.7
Competitors' product quality (S)	6.7	11.8	5.2	8.5
Brand reputation (S)	5.2	8.2	5.1	2.8
Distribution network (H)	3.4	5.6	4.2	4.7
Promotional effectiveness (S)	6.4	5.6	5.5	11.3
Productive capacity (S)	3.9	2.0	5.0	2.8
Productive efficiency (S)	4.7	2.3	5.3	2.8
Unit cost (H)	5.9	4.9	5.8	3.8
Suppliers (H)	6.6	14.1	4.9	13.2
R & D performance (H)	2.8	6.9	3.6	3.8

**Table 8.1.16.1 Factors regularly monitored**

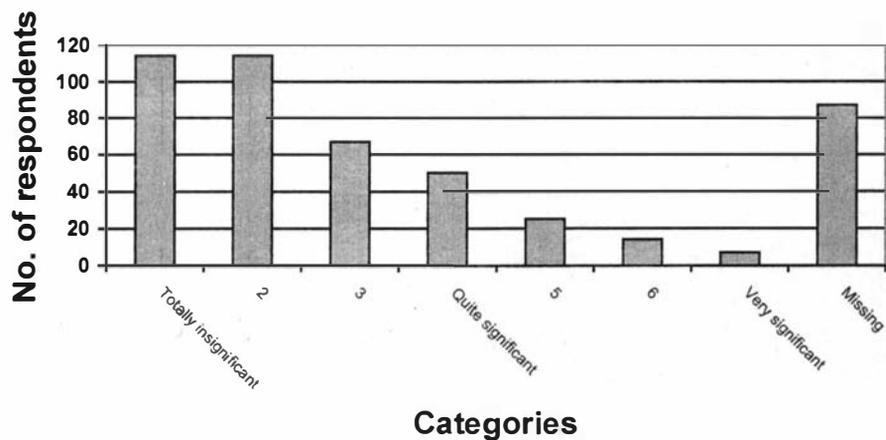
The Internet was used as the main source of information for 20.5% of respondents. The top factors that they used the Internet as their source of information for were suppliers (8.9%), competitors' product quality (7.5%) and brand reputation (5.2%).

Very few respondents (7.3%) reported that their company regularly monitored Internet and non-Internet information sources. These numbers are a very small part of the total sample with both Internet and non-Internet sources used for information in suppliers and promotional effectiveness.

**Q16.2 How would you rate the significance of Internet as a source for such kinds of information?**

Category	No. of Respondents	% of Respondents
Totally insignificant (1)	114	23.8
2	114	23.8
3	67	14.0
Quite significant (4)	50	10.5
5	25	5.2
6	14	2.9
Very significant (7)	7	1.5
Missing	87	18.2

**Table 8.1.16.2 Significance rating**



**Figure 8.1.16.2 Significance rating**

This reveals that 47.6% of respondents rate the Internet very poorly for the information asked for in the previous question. This also accounts for the fact that none of the factor values were above ten percent. It may be that the lack of search skills meant that the information sought online wasn't found, or alternatively, that the specific information wasn't available online even when respondents had adequate search skills.

**Q17 Which of these two statements reflects Internet usage in your organisation?**

Category	No. of Responses	% of Respondents
Individual staff members randomly access the Net	338	70.7
There is co-ordination in exploiting the Internet as a resource	76	15.9
Missing	64	13.4

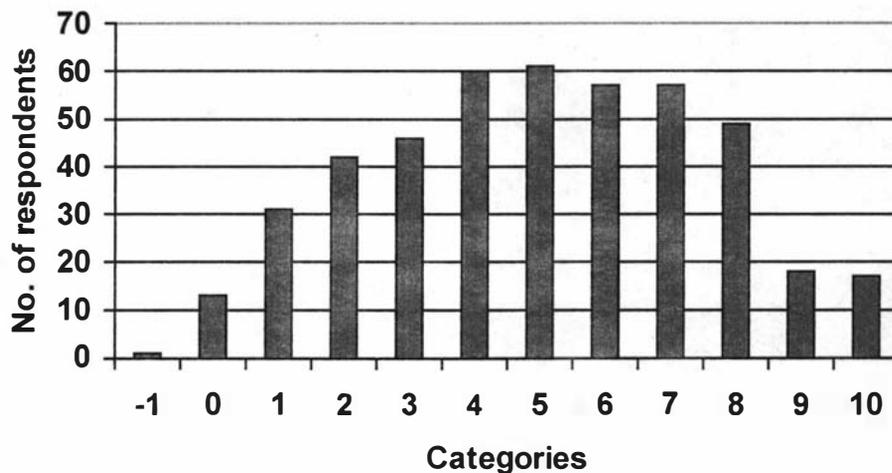
**Table 8.1.17 Method of Internet use**

These findings do indicate that the lack of training revealed in a previous question is consistent with the finding here. While staff access to the Internet may be on an “as needed” basis, there would not appear to be much co-ordinated data monitoring and gathering in the SMEs surveyed. The lack of co-ordination in company use of the Internet may account for a rather “hit and miss” approach to searching, leading to only a good or satisfactory success rating in finding information on the Internet (see Q15.4). Some guidance for staff about how to select the most appropriate search engine, the correct use of terms and boolean operators as well as how to narrow and extend a search would be valuable for staff.

**Q18 On a 10-point scale (10=excellent), how would you rate your own Internet competence (ie understanding the usefulness of search engines, ability to use the applications of Internet)?**

Category	No. of Responses	% of Respondents
-1	1	0.22
0	13	2.86
1	31	6.84
2	42	9.27
3	46	10.15
4	60	13.24
5	61	13.46
6	57	12.58
7	57	12.58
8	49	10.81
9	18	4.19
10	17	3.75

**Table 8.1.18 Rating of own Internet competence**



**Figure 8.1.18 Rating of own Internet competence**

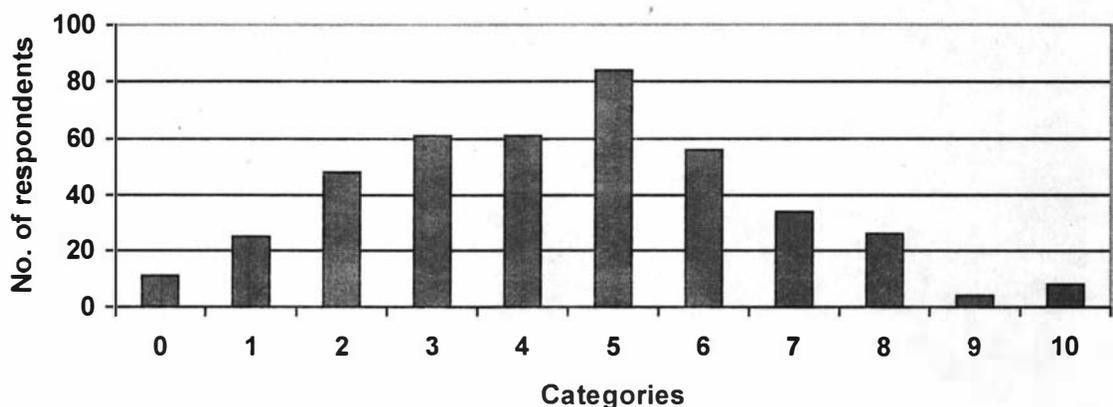
94.7% of respondents replied to this question. The midpoint (5) was highest ranked at 13.4% with responses to categories 5-10 accounting for 57.3% of all respondents. One person decided s/he was off the scale with a score of -1 indicating no competence.

This indicates that over half of all respondents consider their own Internet skills either average or below average. This is an interesting finding in respect to previous questions which illustrated that Internet tended not to be their main information source, they spent little time online and they lacked success locating useful information for their organisations.

**19 On a 10-point scale (10=excellent), how would you rate the collective Internet competence (ie understanding the usefulness of search engines, ability to use the applications of Internet) of your organisation as a whole in using the Internet as a resource?**

Category	No. of Responses	% of Respondents
0	11	2.6
1	25	5.9
2	48	11.4
3	61	14.5
4	61	14.5
5	84	20.0
6	56	13.3
7	34	8.1
8	26	6.2
9	4	0.9
10	8	1.9

**Table 8.1.19 Rating of collective Internet competence**



**Figure 8.1.19 Rating of collective Internet competence**

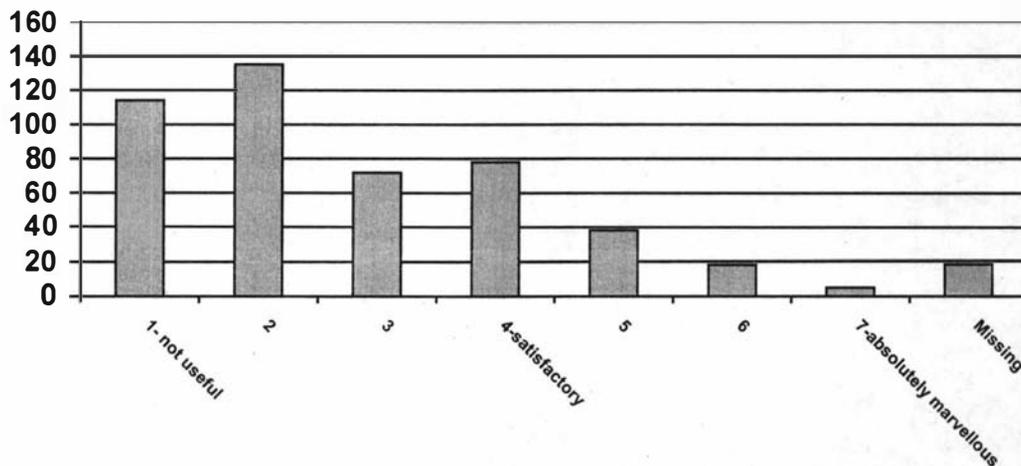
87.4% of respondents replied to this question. As in the previous question on individual competence, the midpoint (5) was highest ranked at 20% with responses to categories 5-10 accounting for 50.7% of all respondents.

This indicates that half of all respondents consider their organisation’s Internet skills either average or above average, which as mentioned in the previous question, is an interesting finding in the light of responses to previous questions on training, information gathering and use of the medium as an information source.

**Q20 At this point in time, how would your company rank the usefulness of the Internet as a tool for decision-making?**

Response	No. of Respondents	% of Respondents
1- not useful	114	23.8
2	135	28.2
3	72	15.1
4-satisfactory	78	16.3
5	38	7.9
6	18	3.8
7-absolutely marvellous	5	1.0
Missing	18	3.8

**Table 8.1.20 Company ranking of Internet usefulness**



**Figure 8.1.20 Company ranking of Internet usefulness**

Once again, respondents indicated that they didn’t value the Internet as a useful tool for gaining important business information and making decisions with 28.2% saying that the Internet really was not useful at all for this purpose. This finding links to question 16 about sources of information that the company monitors. While 53.5% of respondents to Q16 said they monitored at least one of the 18 listed factors, the Internet was not the main source of information for any of them.

**Q21 How does your company overcome the problem of the possibility that the information you get on the Internet is not accurate?**

Of the 478 questionnaire respondents, responses were given to this particular question by 278 individuals (58.2%) with 200 (41.8) of them omitting to answer. There were 24 respondents who made comments that fitted into more than one category on the following table. The responses included a range of open-ended responses that were classified in Table 21 as follows:

Response	No. of Respondents
Use other sources/ other checks	85
Treat with caution/ don't rely on it	37
Use offline sources	31
Use credible sources (industry, market)	15
Use offline sources & common sense/own knowledge	15
Not a concern yet	14
Not applicable	14
Unusual response	13
Ignored it/ not considered it	12
Discuss it/ follow up with personal contact	10
We don't worry about it/ take it at face value	8
Haven't acted on any information/ very little online information used so far	8
Use credible Web sites	8
Send email/fax with questions	7
No problems with the information so far	7
Use other online sources as well	5
We haven't overcome it	5
Use gut feeling	3

**Table 8.1.21 Possibility of inaccurate Internet information**

The majority of responses were to do with using other sources and making cross checks with other information sources rather than relying solely on a particular piece of information found online. Those respondents who fell into this category didn't elaborate on the other information sources they'd use so it was impossible to tell whether they fell into any of the other categories tabled.

Some comments that the 85 respondents in this category made include, "Double check if possible (depending on how critical the information is)", "Use other sources to check validity ie it is only one tool", "We cross check with other sources of information", "Assess it via other media", "Check elsewhere that information is duplicated", "Don't accept information without qualifying it" and "Get information from more than one source and compare those and NZ conditions." Some more specific responses in this category include, "We use it more for general information rather than specific information. Good for backgrounding material we are producing" and "Cross reference. If your Dr. tells you something what do you do?." One

respondent wrote "Scientific products- all have independent tests, validations and registrations" and another, "We always try to double check the information or if it's a product we want, samples prior to purchasing."

The second most popular category related to comments about treating online information with caution and not relying on it. Some of the three respondents wrote about a need to "verify (the) source or use the information with caution", the need to have a "healthy scepticism" and to "take everything with a pinch of salt but then that is what you must do with any information anyway regardless of where it comes from." Others said they were "Treating it with caution. Checking it against known reputable sources" and advised "Don't take everything as gospel", "Don't believe everything you read" and "We don't place any reliance on it." One person commented "It's accepted to the same degree that non Internet information is accepted. Some is important enough to require corroboration, most isn't." Comments in a similar vein were, "Information obtained is taken as a viewpoint or a possibility not as fact", "The Internet based information generally is supporting documentation to primary information." One respondent indicated that the Internet information they were using had a lower priority "Very little expectation or use of statistical or accurate information from the Net. Mostly sales/marketing and graphic design (Internet information used)."

The suggestion of using offline sources was made by 31 respondents and included requesting catalogues, business and trade magazines, reading InfoTech, using other databases, checking the library, using "traditional sources" and "external information."

The next seven categories are of a similar size. The category of 15 respondents who said "use credible sources (industry, market)" included comments such as "national body", "check within market", "(use) multiple sources eg Reuters", "research from recognised institutes", "cross reference suppliers and distributors", "Attempt to verify from as many sources as possible. Measure credibility of source. If important never believe one source", "Verifying information by comparing with primary sources known to be accurate. Additionally, discount factors are included in any analysis of Internet information."

Fifteen respondents said they used offline sources and their own common sense or knowledge to overcome the possibility of inaccurate information from the Internet. Some of the responses in this category were "compare with personal experience", "compare with what we know through experience and other sources", "use experience and knowledge as a frame of reference", "apply common sense, read everything in context of what you know from other sources", "personal knowledge of information-searching for it", "judgement", "personal interpretation", "personal evaluation" and "assess it in light of own knowledge."

Fourteen respondents said it was “not a concern yet” and the same number said the question of inaccurate information from the Internet was not applicable to them. While there may have been some overlap here, the researcher decided that there was a difference and the first group were accessing Internet information and the second group weren’t doing so. Those who fell into the “not a concern yet” category made comments such as “Internet is not used enough”, “as yet Internet not fully utilised for such purposes”, “new to Net, can’t really answer” and “using less than six months so none encountered yet” showing that they were new to the online environment and lack of time online has meant that they have not seen a range of different online information sources. Comments such as “Hasn’t been an issue –yet!!”, “I don’t think that would be a problem”, “not an issue at present”, “not yet a problem”, “not significant at the moment” may indicate that while online information accuracy isn’t a concern at present, they realise it may be in future.

The group who said the question of inaccurate information from the Internet was not applicable sometimes added additional comments such as “it is not relevant to our company”, “only accessing email- not applicable”, “don’t use it”, “Internet not useful in decision making”, “not applicable- do not use Internet to get information, only used for ordering supplies and emailing” and “no Internet at work.”

Eight respondents wrote about using credible Web sites- “Upto now almost all our information delivered from the Net has been from Government departments so we have had to trust them!”, “Look at credibility of Web site eg IRD, CA systems, government department, reputable universities”, “Information is mainly gathered off Government sites and there are not many problems with accuracy”, “We only use it for Government agencies” and “Have accessed Yellow Pages nationwide a lot- information seems very accurate!”

A group of eight respondents said either they hadn’t acted on any information or there was very little of it- “Not much information received but we usually don’t question it” and “we have only looked at what other florists are doing.” Another said it was used in a limited way in conjunction with other sources- “Internet information only used to obtain lists of possible suppliers- then follow up with non Internet contact.”

Twelve respondents said they hadn’t considered the accuracy of the information. Their comments included “ignore it”, “not considered”, “no set procedure”, “no attempt made”, “not thought about” and “have not even thought of it that way.”

There may be some common elements between these last two groups of respondents; perhaps the reason the group of twelve haven’t considered the accuracy of the information is because they have acted on none or very little of it. A third group of eight who wrote they don’t worry about the information and take it at full value may have some similarities with the group in the following paragraph, in that they have not had any problems with the information yet either because they are using so little of it, it is from credible Web sources, or alternately, that they have not suffered any ill consequences as a result. Those that say they don’t worry about the information and

take it at full value made comments such as “not too important”, “is it worse than any other source –“caveat emptor”?”, “the information inputted is only as good as the person inputting, therefore all information is taken on face value”, “trust on the integrity of the information provider” and “take it all at face value.”

One group of seven respondents said they had had no problems with online information with comments such as, “I have not experienced the problem”, “has proven 100% accurate to date” and “have not (had) any inaccurate information yet that we are aware of.”

Ten respondents said they discuss information and/or follow up online information with personal contact. “We never use one source. Share gathered information with other professionals before use ballpark expectations” and “any information found would be discussed among workers. Whether or not it’s true to use would be up to the manager.”

A further group of seven respondents made similar comments and said they would make further enquiries through email or fax rather than through personal means. Some of the comments from respondents were, “write emails with questions to clarify details”, “email for clarification”, “there are usually several newsgroups which we survey which confirms our source of information” and “confirming by sending fax/ snail mail.”

Only five respondents directly said that they’d use other online sources in an effort to confirm the information. This may however have been alluded to in comments such as “use other sources” and “use credible Web sites, two previous categories”. Other online sources mentioned were newsgroups, “by using similar sources on the Net”, “advanced search, use specific search engines” and “by the use of multiple site checking.”

Five respondents said they hadn’t overcome the problem that they may be getting inaccurate information. It would be interesting to know whether the other respondents thought they had overcome the problem by using the methods they outlined. The five responses include “haven’t”, “we don’t” and “New to Internet access. Need more help to achieve results.”

Three respondents mentioned gut feeling as a way to deal with the problem. Their comments were “too hard to actually assess (information accuracy)- one has to base accuracy on ‘gut’ feelings in most cases”, “evaluation” and “use own intuition.”

Thirteen responses didn’t directly fit into any of the other categories and are as follows- “Disclaiming any use of such information”, “booking secured via credit card number”, “we are aware of the points to look for in judging the accuracy of information”, “not a specific Internet problem” and “apply mathematical checks to data.”

It appears from the 278 comments that the majority of respondents and their organisations tend to use other information sources to collaborate the information they find online rather than taking information at face value. A range of mainly offline and personal sources were used with a number of respondents mentioning common sense, gut feelings and contact with sources via personal or electronic means as additional forms of verification.

**Q22 If you could receive help in Internet use, what type of help would you like?**

280 of the 478 questionnaire respondents answered question 22 with respondents seeming to fall into two categories in this particular question. 210 respondents named the type of help they would like and 61 named their preferred method of receiving help (or training) with four people giving both types of responses and one being a response to either category with “probably as much as you could give.”

Some respondents were quite specific about the type of help they’d like such as “to learn the placing of vehicle photos into Home Page for local use/information”, “holographics”, “availability of certain tartans” and “because I am blind an effective speech program that would allow me access to the Internet”. Other respondents were less specific such as, “in-depth overview”, “training generally, information on how we can use (specifically and how to) help our business”, “demo on use of Internet” and “how to use the bloody thing”.

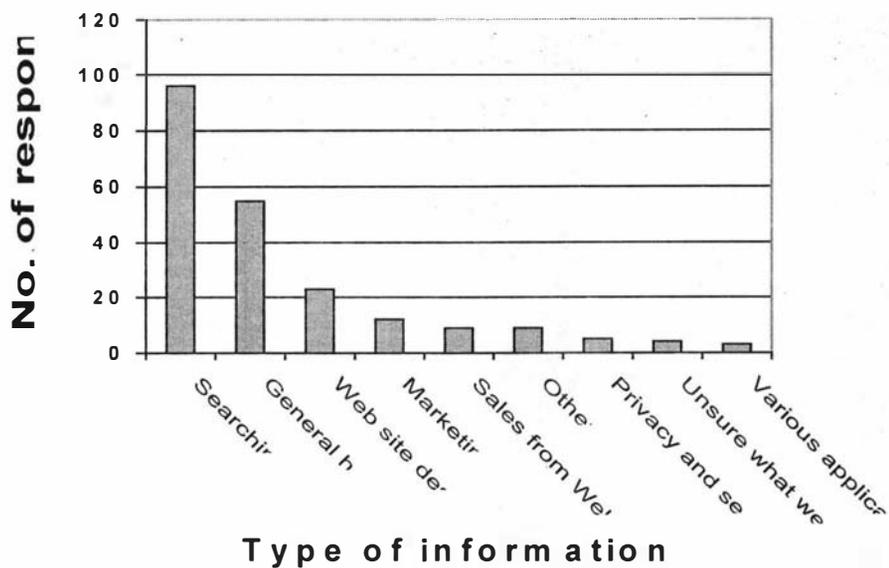
Some respondents just wrote “training” while others had ideas about how they’d like to receive help. One said “1:1. Pill to take which makes me proficient” as opposed to “A proper course on basics, jargon etc instead of starting in the middle, not fully understanding some of the jargon and not being able to advance.”

**Type of help**

A closer look at the information respondents would like to receive showed the following results. Twenty seven respondents included more than one category in their response.

Information wanted	No. of Respondents
Searching	96
General help for business	55
Web site design	23
Marketing	12
Sales from Web site	9
Other	9
Privacy and security	5
Unsure what we need	4
Various applications	3

**Table 8.1.22 Information wanted about the Internet**



**Figure 8.1.22 Information wanted about the Internet**

The largest category of 96 respondents said they wanted help searching for information, choosing the best search engine and using directories and databases. Some comments were “Quick tips ie did you know the fast way to search for... etc”, “how to narrow down a search”, “up-to-date information of search engine processes, new directory listing addresses and access to evaluation of advertising search submission”, “more targeted browsing”, “instruction on how to find specific information” and “how to find virtual libraries, how to manage/ sort bookmarks better.”

Other respondents within this category wanted help to locate suppliers or customers eg “ways of ensuring our site is being seen by potential travellers”, “how to source information on products and services from Japan”, “help in how to find potential customers” and “how to find similar manufacturers’ source materials.”

The next category of 55 respondents said they wanted general help about the Internet for their business including technical requirements and email. These ranged from “I would have liked to know that my computer didn’t have enough hard drive to run the Internet before I paid to hook on and I have no experience with Internet and don’t know where to start- perhaps I should upgrade the hard drive first”, “whether we need to log in or not”, “General use and knowledge, (how to) adapt the Internet to suit business requirements” and “any information on Internet would be useful” to more sophisticated queries such as, “How to use it effectively. How it could improve the profitability of our company”, “Faster connections and downloading of information”, “Managing the use of the Net by individuals more effectively to gain efficiencies” and “Help with business procedures, business plan etc- definitely daily motivation.”

Twenty three respondents said they’d like help with building Web sites and some of the design issues. Comments included, “Someone else paying the bill. No really the

only problem we have is developing Web sites to suit all users”, “What to look for in an effective Web page for very small businesses- ie the traps! And how to keep costs to a minimum but get the message out to as many people as possible”, “Designing/ implementing interactive Web pages” and “creating interactive forms etc.”

Twelve respondents wanted help with marketing. Some of the comments were “access to marketing tools”, “(information on) email (bulk) programs available. The evaluation of successfulness of programs and their pitfalls”, “if and how we can use it for a sales/marketing tool”, “information about how effective Web page advertising is” and “training on Internet-database linking for marketing purposes.”

Help on how to make sales from the Web site was particularly mentioned by the next group of respondents. They wished to have “advice re Web site building for Internet catalogue and sales with online purchasing”, “setting up customer purchasing facilities”, “setting up online shopping” and “apart from the bullshit, how can I actually use the Net to generate income?” indicating a level of frustration with the quality of information currently received.

The next group of nine respondents made comments that didn’t fit into any one particular category. Help that they were after included advice on software and support houses (possibly ISPs), trends, setting up an intranet, information on local Web sites as well as the following comments, “a rating system eg content/ ease of use/ maintenance/ time to respond...”, “help to pay the bills!” and “we use CompuServe.”

Five respondents had queries about privacy and security of the Internet and said “help in designing privacy practice and secure financial transactions- but I’m taking a course to enable me to design these areas into my Web site”, “setting up a secure intranet” and “ensuring confidentiality, prevent fraud/ computer hacking/ viruses.”

When asked, four respondents were unsure what help they required. “Non specific”, “do not know”, “don’t know what help we would need- seem to take too long to find what we want. We are better to use databases.”

Three respondents mentioned various applications eg “setting up databases and financial purchase capabilities in companies”, “computer conferencing” and “use of applications etc.”

### **Preferred method of receiving help**

Sixty one people named their preferred method for receiving help or training. Once again, some respondents made comments that named more than one training method.

The majority of respondents wanted face-to-face, hands-on, 1:1 help. Twenty people fitted into this category and some of their comments include, “Given the practice, an on-call tutor would be great for when I come unstuck”, “a human being to talk to”, “in-house personal tuition”, “hands-on/ over the shoulder help” and “1: 1 help.”

The next most popular category containing seven respondents was some form of help through mail, newsletters or other written materials. Comments included “clear written guide to using Internet and email”, “free stuff and an instructional guide”, “newsletters- information guides- information evenings”, “monthly bulletins of new ideas sites relevant to our core business” and “monthly newsletter of new items and handy hints.”

The other categories had between two and five responses and covered the training mediums of phone, video, email and tutorials or seminars. Comments include “0800 helpline- general accessing”, “series of half-day seminars” and “about 3 x 2 hour lessons so that questions can be answered at follow-up lessons.” Only one person mentioned learning by oneself with a couple mentioning on the job training and online learning.

A small number of respondents said they didn’t require help or none for the moment. One person said “none”, “we receive regular updates from our IT person (external) who is regularly on site so we don’t require help”, “not applicable- company (is) only myself at this stage, so presently have enough Net knowledge”, “don’t need any (as yet anyway)”, “none at present”, “happy to blunder through on our own.” A couple of others weren’t sure what they wanted saying “do not know” and “not sure.”

A major thread that seemed to come through this question both in terms of training content and method was that it should be low cost, in lay person’s language and make a difference to the business in terms of saving time and being more efficient. Several respondents mentioned that finding time was a problem.

## **PART II**

### **Q1 Does your company have a Web page?**

Company Web page	No. of Respondents	% of Respondents
Yes	141	29.5
No	329	68.8
Missing	8	1.7

**Table 8.2.1 Company Web page**

Over two thirds of respondents said they didn’t have a company Web page. Perhaps their online skills may improve once this occurs and they may be much more likely to invest in training and use the information resources of the Internet.

**Q2 If “no”, do you intend to have a Web page in the future?**

Intention	No. of Respondents	% of Respondents
Yes	210	43.9
No	101	21.1
Missing	167	34.9

**Table 8.2.2 Intention to have Web page**

There is a strong indication here that nearly half of those not presently online are intending to develop a company Web page. The 101 respondents who said they don't currently have a Web page and aren't intending to get one is still quite a high proportion of the total questionnaire respondents. A number of those classified as “missing” have not answered this question because they already have a company Web page.

**Q3 Please give us your Web page address**

This question was asked as a check to see whether respondents knew their Web page address and to do further Web site analysis later. An interesting observation made in conjunction with the first question in this section is that all respondents who said their company had a Web page were able to give the URL. Most respondents who said their company had a Web page were able to give the URL although a couple wrote “IHUG” and there were five email addresses. The majority of respondents had URLs ending with “.co.nz” although there were several URLs registered in the United States (.com) and a few Australian registered domain names. Several respondents said that by giving the company's URL the survey was no longer anonymous which is quite correct.

Web page address	No. of Respondents	% of Respondents
Given	141	29.5
Missing	337	70.5

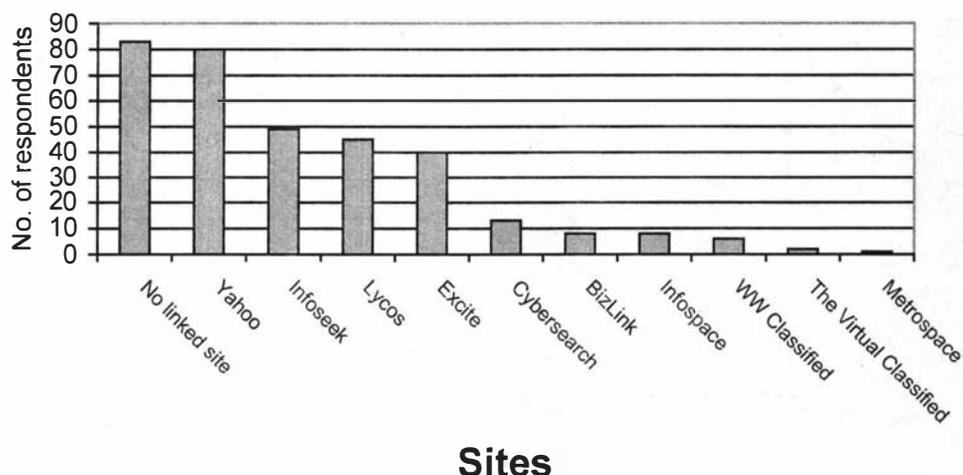
**Table 8.2.3 Web page address given**

**Q4 Which of the following sites are you linked with?**

This question asked respondents which of the listed sites they had linked to by submitting their Web site details. Yahoo (23.9%), Infoseek (14.6%), Lycos (13.4%) and Excite (11.9%) were the most common and well known ones used.

Linked sites	No. of Responses	% of Respondents
No linked site	83	24.8
Yahoo	80	23.9
Infoseek	49	14.6
Lycos	45	13.4
Excite	40	11.9
Cybersearch	13	3.9
BizLink	8	2.4
Infospace- The Ultimate Directory	8	2.4
WW Classified for Biz	6	1.8
The Virtual Classified	2	0.6
Metrospace	1	0.3

**Table 8.2.4 Linked sites**



**Figure 8.2.4 Linked sites**

**Q5 Who wrote/designed your Web page for you?**

Web page designer	No of Respondents	% of Respondents
Self	60	12.55
Consultant	81	16.94
Missing	337	70.50

**Table 8.2.5 Web page design**

141 respondents said they had home pages; comprising 29% of all respondents. Of those with Web pages, 42% said they designed their own. The missing category of 337 consists of those respondents whose organisations do not have Web pages and matches the responses in Part 2, question 1 where there were 329 respondents who replied that their organisation didn't have a Web page and the 8 missing responses.

It is interesting to note that the numbers are fairly closely split between those organisations who designed their own pages and those who obtained outside expertise. The researcher is unsure whether the small businesses felt they lacked time and expertise and the expense of an outside consultant was warranted or whether the cost of designing the Web pages was sufficiently small to outweigh the costs of more SMEs designing their own Web pages.

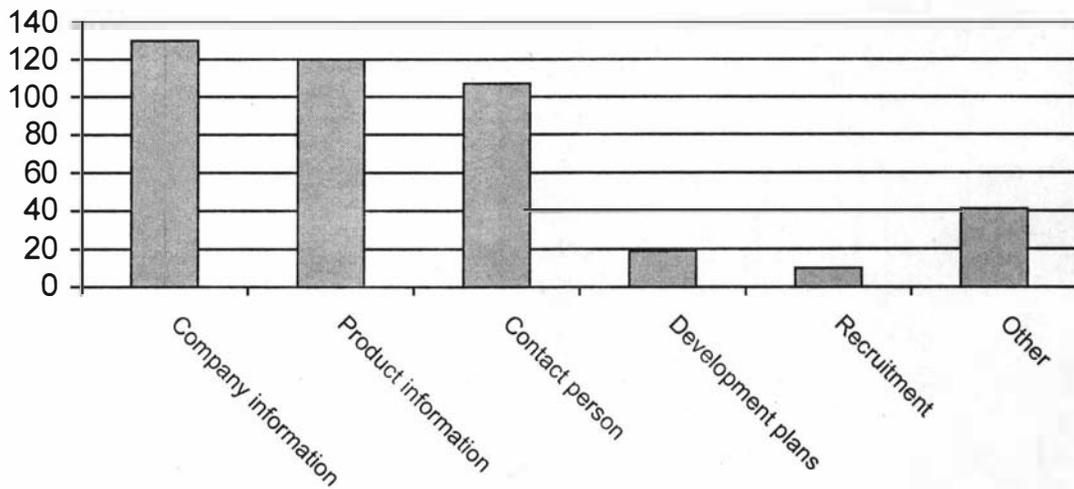
**Q6 What type of information do you provide on your Web page?**

Respondents could tick more than one option. There were 149 respondents who answered the question and 427 selections made. This means that the average number of responses was 2.8 with the three most popular being company information (130), product information (120) and contact person (107).

There were 42 respondents who said their page carried other information. Seven respondents indicated sales from their page with bookings, reservations and prices showing this. Fourteen responses were associated with providing information eg “dates of race meetings”, “examination timetables”, “seminar programme, press releases”, “immigration criteria and detailed government information” and “access to a database of consultants.” The remaining responses were either a combination of categories, information on services or links to other sites.

Type of information	No. of Responses	% of Respondents
Company information	130	30.4
Product information	120	28.1
Contact person	107	25.1
Future development plans	19	4.4
Recruitment information	10	2.3
Other type of information	41	9.6

**Table 8.2.6 Information provided on Web page**



**Figure 8.2.6 Information provided on Web page**

**Q7 Through your Web page is a 'visitor' able to (1) interact with you (2) place a sales order (3) make payment?**

Use of Web page	Yes	No	Missing
Interact with company	22.4	7.9	69.7
Place a sales order	12.1	15.5	72.4
Make payment	4.4	22.6	73.0

**Table 8.2.7 Web page uses**

The percentage of missing respondents is rather high in this question so it is perhaps unwise to draw strong conclusions here. It appears few of the SMEs questioned are using their Web sites to sell products and services and perhaps do not intend to in the future (as shown by the few requests for help regarding sales in question 22). This may be because of security concerns and the respondents seeing their Web site as largely brochure based with an email link at present.

**Q8 On the Web page itself do you provide an avenue for your `visitor' to interact with you?**

Interaction with business	No. of Responses	% of Respondents
Yes	87	18.2
No	58	12.1
Missing	333	69.7

**Table 8.2.8 Web page interactivity**

While some of the missing responses are from respondents who do not have an organisational Web page, it is disappointing that only 87 of the 478 respondents had the facility to give customers an opportunity to communicate with their business. This could have been as simple as an email link.

**Q9 Is there an individual who has been given the responsibility of managing your Web page?**

Individual Web page management responsibility	No. of Responses	% of Respondents
Yes	118	24.7
No	36	7.5
Missing	324	67.8

**Table 8.2.9 Management of organisation Web page**

This appears rather discrepant in the light of the previous question's results! It is reassuring to find more organisations than not had designated the responsibility of the Web page within their organisation. In hindsight, it would have been useful to have included an open-ended question asking what that person's duties were. Perhaps Web site interactions with site visitors was not seen as one of these duties.

**Q10 How frequently do you update your Web page on the Internet?**

Frequency updated	No. of Responses	% of Respondents
Daily	5	1.0
Weekly	5	1.0
Fortnightly	4	0.8
Monthly	37	7.7
Not yet so far	64	13.4
Other	26	5.4
Missing	337	70.5

**Table 8.2.10 Web page update frequency**

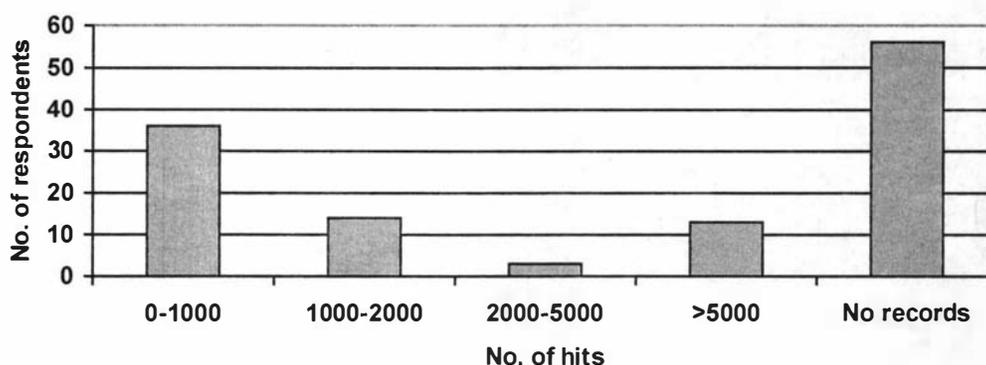
To a certain extent, it depends on the nature of the Web site how frequently it is updated as financial information may alter several times in a day while a brochure-based site may be fairly generic. Another factor worth considering is how long various organisations have had their Web site. Perhaps the suggested categories were too close together and it might have been better to suggest six monthly or annually.

There were twenty six respondents who said their updates were at times other than those stated. Nine updated their site as required whenever new product information was available or details needed changing. Two respondents each said monthly and quarterly and five respondents said they would revise their site every six months. Four said infrequently/ randomly or annually. The remaining four respondents replied “Web page is corporate and maintained in Paris”, “only just got it installed”, “when I have time” and “leave it to the professional.” This last comment is interesting and the researcher wonders which professional (IT person? Web site designer?) is referred to.

**Q11 What is the user access rate (number of hits) of your Web page so far?**

User access rate	No. of Responses	% of Respondents
0-1000	36	7.5
1000-2000	14	2.9
2000-5000	3	0.6
>5000	13	2.7
No records	56	11.7
Missing (ie didn't answer question)	356	74.5

**Table 8.2.11 User access rate**



**Figure 8.2.11 User access rate**

In question 1 of this section, 141 respondents said their organisation had a Web page. In question 11, 122 respondents gave data about the user access rate. Quite a few (45.9%) did not have an idea how many hits their Web pages were receiving. If they lack this information they will be unable to measure its effectiveness, monitor traffic flow through the site and update site content and design based on site records. In a previous question there was a fairly even split between those who designed their own Web pages and those who had used specialist expertise. A possibility may be that those who designed their own sites may not be aware of how to measure traffic with hit counters and use site tracking etc. It appears that Web site designers who were contracted to develop the site have not tended to train SMEs in taking measurements or how to track traffic on their Web sites.

### **PART III Demographics**

#### **Q1 Does your company export any products/services at the moment?**

Exporting from business	No. of Responses	% of Respondents
Yes	133	27.8
No	333	69.7
Missing	12	2.5

**Table 8.3.1 Exporting of products and services**

Just over a quarter of respondents said they were currently exporting. It would be interesting to investigate whether they were interested in exporting and whether getting a Web page in the future (as indicated in a previous question) was perceived as likely to enhance their exporting possibilities. It does appear from previous questions that respondents' Web pages were being used for a limited range of functions at present with selling having a low priority.

#### **Q2 Nature of company**

Company categories	No. of Respondents	% of Respondents
Manufacturing	101	17.9
Retailing	73	12.9
Trading	39	6.9
Construction	21	3.7
Service	237	41.9
Other	94	16.6

**Table 8.3.2 Nature of company**

There were 565 responses with some of the 478 respondents ticking more than one category. Service companies are quite highly represented at just over forty percent.

#### **Q3 Number of management level staff**

No. of mgt level staff	No. of Responses	% of Respondents
0	2	0.4
1	148	31.0
2	136	28.5
3-5	118	24.6
6-10	28	5.8
11-20	11	2.2
50-87	3	0.6
Missing	32	6.7

**Table 8.3.3 Number of management level staff**

The percent of management staff does seem quite high at the lower end although perhaps this is entirely reasonable if everyone has a job title in a small business of five employees or fewer. Question 5 in part 3 shows the range of respondents' job titles.

#### Q4 Total number of staff

Total number of staff	No. of Responses	% of Respondents
1	54	11.3
2	69	14.4
3 to 5	97	20.2
6 to 10	85	17.8
11 to 20	71	14.8
21 to 50	38	7.8
51 to 100	16	3.2
101 to 500	14	2.8
501 to 900	1	0.2
4300	1	0.2
Missing	32	6.7

Table 8.3.4 Total number of staff

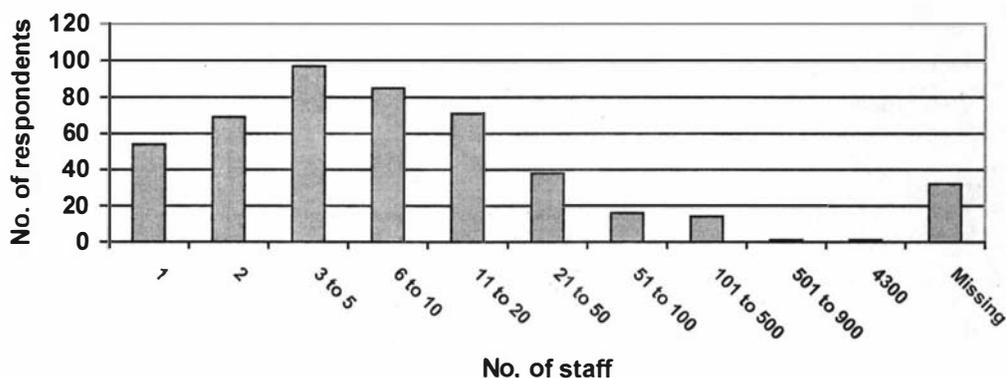


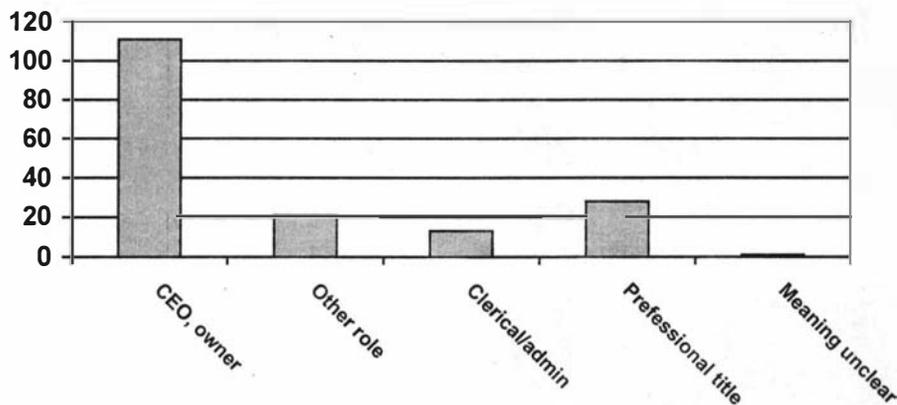
Figure 8.3.4 Total number of staff

46% of respondents' organisations had five or fewer staff and 64% had fewer than 10 employees. There were 32 respondents who have more than 50 employees in their organisations which indicates that they aren't likely to be small businesses in the New Zealand sense. They may have been on the mailing list for the small business enterprise centres through their interest in the area or be a small business linked to a larger organisation, such as a local franchise.

### Q5 Your job designation/title

Job Title or Designation	No. of Respondents	% of Respondents
CEO, manager, director, owner	111	63.79
Other role in the business	21	12.06
Clerical/administration	13	7.47
Professional title	28	16.09
Meaning unclear	1	0.57

**Table 8.3.5 Job Titles**



**Figure 8.3.5 Job Titles**

There were 111 titles that used words such as manager, principal, CEO, director, owner and sole proprietor. As the SBEC mailing lists were used to send out the questionnaires and the researcher wasn't privy to the address lists, it is hard to know whether the questionnaires were sent to a particular person within the organisation or the business in general. This largest category included titles such as "chief cook and bottle washer", "boss", "co-owner", "executive officer", "franchiser" and "M.D. to dog's body."

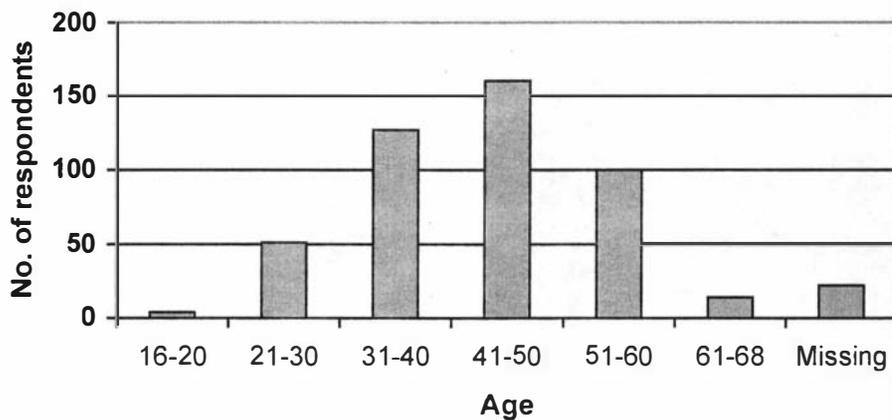
Twenty one respondents named a function within their business as their job title including "marketing", "senior accountant" and "business organiser/accountant." It is possible some of these roles may have been their professional title outside the business and fall into that category. Some of the titles assigned to that category are "engineer", "chartered accountant", "agronomist", "trout fishing guide" and "public relations advisor." The one title that was unclear was "New Int. Mkts Piv."

### Q6 Your age

The majority of respondents were in the 41-50 age bracket with 60% of all respondents aged between 31 and 50 years. The youngest respondent was 16 and the oldest was aged 68. Twenty two respondents didn't state their ages.

Age of respondent	No. of Respondents	% of Respondents
16-20	4	0.8
21-30	51	10.7
31-40	127	26.5
41-50	160	33.5
51-60	100	21.0
61-68	14	2.8
Missing	22	4.6

**Table 8.3.6 Age of respondents**



**Figure 8.3.6 Age of respondents**

#### **Q7 Your gender**

This question asked respondents about their gender. There is nearly a 2:1 male:female ratio with very few respondents neglecting to answer to the question.

Gender	No. of Respondents	% of Respondents
Male	316	66.1
Female	153	32.0
Missing	9	1.9

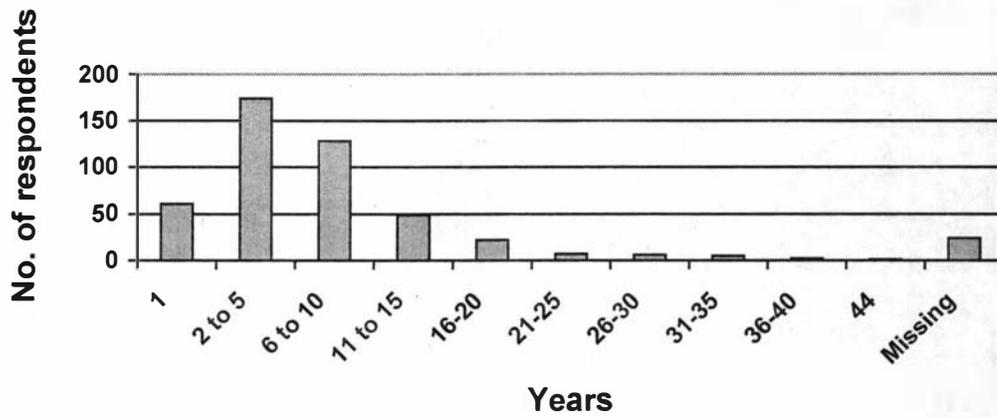
**Table 8.3.7 Gender of respondents**

#### **Q8 Experience with the company**

This question aimed to find out how long the respondent had worked with their present small business. Most respondents fell within the 2-5 year time frame with three quarters of all respondents (75.8%) having been with the company for fewer than 10 years and nearly two thirds of all respondents (63.2%) having between two and ten years experience with the company.

Experience with company (in years)	No. of Responses	% of Respondents
1	60	12.6
2-5	174	36.4
6-10	128	26.8
11-15	49	10.1
16-20	22	4.5
21-25	7	1.4
26-30	6	1.2
31-35	5	1.0
36-40	2	0.4
44	1	0.2
Missing	24	5.0

**Table 8.3.8 Experience with the company**

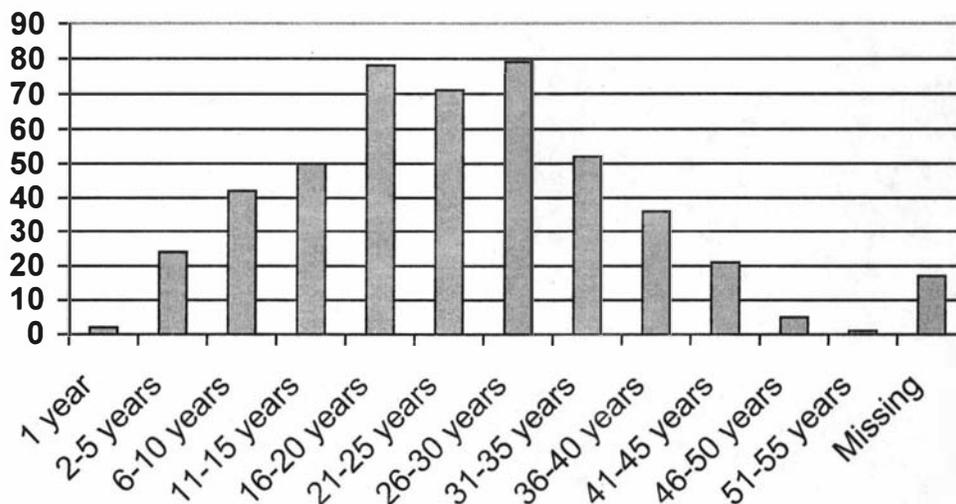


**Figure 8.3.8 Experience with the company**

## Q9 Total work experience

Total work experience (in years)	No. of Responses	% of Respondents
1	2	0.4
2-5	24	5.0
6-10	42	8.7
11-15	50	10.4
16-20	78	16.3
21-25	71	14.8
26-30	79	16.6
31-35	52	11.0
36-40	36	7.5
41-45	21	4.3
46-50	5	1.0
52	1	0.2
Missing	17	3.6

**Table 8.3.9 Total work experience**



**Figure 8.3.9 Total work experience**

When the total work experience of the small business owners was examined, the majority of them had worked between 11 and 35 years (69.1%) with the majority falling between 16 and 30 years (47.7%).

## 8.2 Summary

This chapter has examined 478 responses from paper questionnaires sent to organisations on the Small and Medium Sized Enterprise Centres databases. Only six percent were receiving help from any business development board or enterprise centre

and most had been on the Internet between one and two years with 23 percent having daily access although nearly forty percent were using it for only one to three hours per week. The most common business uses of the Internet were seeking information, sending information to customers and financial transactions. Over half of all respondents rated their Internet skills either average or above average. More than seventy percent provided no company training on Internet use and few companies subscribed to computer magazines.

Companies most highly monitored three factors: their product quality, overall market for their product or service and competitors' product quality. Sources other than the Internet tended to be used to monitor these and a variety of other factors with only twenty percent of respondents using the Internet as their main information source when monitoring and most didn't perceive the Internet as a useful tool for decision making. The majority of respondents tended to use other information sources to collaborate the information they found online rather than taking it at face value.

Just over two thirds of companies had a Web page with nearly half of those who hadn't, responding they intended to get one in the near future. Those with Web pages were fairly closely split between those who designed their own pages and those who obtained outside expertise. Information provided on Web pages tended to be company and product information as well as a contact person. The majority of companies had three to five employees, were service sector oriented and weren't exporting.

## **9 Organisation A case study**

### **9.1 Introduction**

This chapter is the first of nine using a case study methodology. Information gained from respondents to the paper and email questionnaires was used in the preparation of the questions and directed the observations for the case studies. While useful material was gained from the questionnaires, one of the limitations was the inability to ask respondents for clarification or to explore ideas they wrote in their anonymous responses. The case study method allowed issues to be raised, opinions sought from a range of individuals within the organisation, comments to be clarified and incidental remarks captured.

The interviews were semi-structured and progressed through various themes. Sometimes replies encompassed several themes and there is some repetition or a greater focus on one aspect or theme related to the organisation's Internet presence than for other aspects. The overall methodology used for the case study is described in section 4.2.3

The first of the case studies will look at the use of Internet within the finance and insurance sector (K). Organisation A forms the focus of the first case study. This chapter follows a similar format to all of the case studies that follow. It looks at the background to the case study for Organisation A and outlines the method employed for investigating the case. The results and discussion sections are next with the summary drawn from the case concluding the chapter.

### **9.2 Background**

Organisation A's products and services are a totally separate banking organisational operation from their parent bank. They have their own systems, own services, own employees, different management structure, different branding and different buildings. One of the channels they offer is an Internet banking secure area called the vault. They launched the site on October 6, 1997.

The design of the wholly new systems that Organisation A runs on were outsourced to IBM- both the Internet side and the new retail banking package. This was done parallel to but separate from ASB's Fast Net, leveraging off the expertise particularly in the security area.

Organisation A's management structure consists of the marketing manager, technology manager, finance manager, an operations manager who runs the call centre and has the bulk of the staff (accounts managers) reporting to her and a lending manager. In addition to the managers there are 25 people who are account managers based in the call centre answering the phones and a small back office staff making up the rest of the bank.

FastNet is a channel of the Auckland Savings Bank (ASB) and a means of customers accessing their ASB bank accounts just as fast phone is a means of doing it through Interactive Voice Response (IVR) and physically going into a branch is another way of doing banking, in this case through a branch. FastNet is a means of accessing ASB bank accounts through the Internet.

Organisation A is not a separate legal entity from ASB, so ASB is the legal entity that people sue if anything goes wrong. In shape and form though, Organisation A is quite separate.

### **9.3 Survey implementation**

The method used has been described in the methodology chapter with the particular approach to Organisation A described here.

Initial attempts to contact Organisation A were made through their Web site. When this didn't give names of any relevant contact people for the researcher's purposes, contact was made with ASB Head Office phone (09) 377 8930. Two names were given- DR (Technical Manager with Organisation A) and VW (Marketing Manager). A face to face interview with VW, Marketing Manager of Organisation A, was held on 21 January 1998. A phone interview was held with DR, Technology Manager of Organisation A on 10 February 1998.

Some reticence was evident especially in DR's answers due to the commercially sensitive nature of the operation. Organisation A staff were well aware that other banks are considering Internet banking and were keen not to lose any of their competitive advantage.

### **9.4 Results**

This section will detail the results under three headings: getting online; human issues and communication aspects; and looking back.

#### **Getting online**

The first cluster of questions in the case study examined motivations for getting an Internet presence plus planning, designing and launching the site. The success factors relevant to this phase of an organisation's Internet development are:

- Key success factor #1 Plan for the organisation's Web site
- Key success factor #2 Development of an integrated Internet package
- Key success factor #4 Support from top management
- Key success factor #12 Secure server
- Key success factor #13 Importance of a project champion
- Key success factor #14 Being aware of the competition
- Key success factor #16 Use of outside expertise
- Key success factor #19 Electronic commerce

### **Human issues and communication aspects**

The second cluster of questions examined aspects related to the internal and external communication for the organisation, training, Internet and electronic mail policies and related issues. Aspects of customer reaction and support issues are also covered in this section. The success factors relevant to this phase of an organisation's Internet development are:

- Key success factor #3 Site part of overall communications strategy
- Key success factor #5 Internet training given and updated
- Key success factor #6 Plan for dealing with site related communication
- Key success factor #7 Formal Internet policy
- Key success factor #8 Consideration of site's marketing aspects
- Key success factor #11 Intranet in place
- Key success factor #17 Meeting customer demand

### **Looking back**

The third and final cluster of questions in the case study were designed to get participants to evaluate the process of putting their organisation online. Areas explored were aspects they were pleased with and proud of, unhappy and dissatisfied with, their future plans, any remaining issues that required resolving, what they would do differently with the benefit of hindsight and the role of their ISP in the project. Relevant factors in this section are:

- Key success factor #9 Updating and refocusing of home page
- Key success factor #10 Positive relationship with ISP
- Key success factor #15 Consideration of Web site on business effectiveness
- Key success factor #18 Organisational culture responsive to change

## **9.5 Discussion**

This section will analyse interview material from the results section under the success factor headings derived from the literature review and the previous surveys.

### **Getting online**

The first cluster of questions forming the case study examined motivations for getting an Internet presence, planning, designing and launching the site.

#### **Key success factor #1 Plan for the organisation's Web site**

In June 1996 ASB did a survey with quite an extensive population sample of which some people were ASB customers and some weren't, to find out what people were looking for in personal (domestic) banking. The key finding was that people were very dissatisfied with the current ways of doing banking and there had been very little progress in banking methods which was at odds with changes in society over the same period. "Organisation A was set up as a solution to that need or that problem (lifestyle changes and inconvenience of visiting a branch)...it would offer a complete range of products and services and enable you to have a full banking relationship with

us...providing people with access to their accounts using alternative channels than a branch".

Customer demand and convenience prompted the move to have interactive online banking. Branch closures, amalgamations, the electronic delivery channels- ATMs, EFT-POS and call centres (ASB has been running one for at least five years) also promoted the Organisation A development. It was seen as a natural extension to what was happening both in the New Zealand marketplace and with overseas trends. Banks also realised they could reduce staff by encouraging customers to use Internet or telephone banking. "The survey was done (October 1996), then the business case was developed based on the output of that research and then the approval was given and a project team was set up and the work commenced on building Organisation A".

The project began in October 1996 after the big survey was completed. The business case was developed on the basis of that research, approval was given and a project team set up. One aim was to control the system costs by lowering the cost: income ratio so they could give customers value for money. As much as possible was set up along the lines of a virtual company strategy. An example of this was the outsourcing of the whole of the technology department and running of the operation. The technology and marketing managers have no staff and deal with agencies and specialist houses when needed.

Most of the team came on board in January 1997. One of the marketing manager's briefs was to develop and implement the products and services of Organisation A. After some thought had been given to this, a couple of organisations already working with ASB were approached. As the project was very secret, they couldn't go out and talk to every Web site designer that they thought they might want to work with. "So, we've got to have the technical people sitting there waiting for it all to happen, but we needed to really develop how the Web site was going to fit together, what was going to be in the site to do that, so the first thing we did was actually get the designers on board before we even knew what the Web was going to be, we knew we had to have Web site designers".

V (Marketing Manager) comments further on the process. "Once we had them on board (Web site designers), we worked with them with IBM, a business analyst and myself to actually define the requirements for the Web, so what would the structure be, what would we offer... what would be the cool things, what are the must have things etc. Once we had that in place, then we did a site design and then started basically biting off the chunks and prioritising... one thing for us that was really important was launching by a specific date in order to have the first mover advantage, so we had to prioritise, but we started work on the most important things first so that if we went over time it didn't matter what would be the core. And then it was a case of very much once those business requirements have been defined and approved basically we then go and simultaneous development in tandem and design, if you like in terms of the pretty front end sort of happening ...designers and developers sitting side by side and working through things".

“Organisation A was set up as a solution to that need or problem and it was seen as being very similar to ASB in offering a complete range of products and services enabling the customer to have a full banking relationship with the bank, using technology. This would provide people with access to their accounts using alternative channels other than the branch”. One of those very key channels was the Web and in the initial research, a very large portion of the bank's target market already had access to the Web but weren't using it for any banking transactions.

“The process ...really extended from a concept that the Managing Director Ralph Norris had. This was really his idea and he managed to convince the board that this was a good idea and got the go ahead to build a business case... Part of the business case was that we chose or at least understood the technology side, because setting up a separate brand, part of the business case recommended that, the research said that...always to lower the cost of income ratio to get that really way down so that we could give customers value for money. In other words, control that cost and lessen the margins. That was really the whole basis for doing what we did. But part of the business case needed to understand the costs of setting up the business obviously, so part of what we did was to go out to a number of suppliers and tell them about the content that we wanted to build and find out whether they were interested, and if they were, to tell them how they will achieve it”.

A key aspect was managing the process. “I (V) used to work for IBM and I have been involved with a number of Web sites before, in the actual design of them and the implementation. I've never been involved with a Web site before that doesn't actually go over the original budget. It was a pretty hard budget, ...when you have got to build a bank...everything at once, then unfortunately you don't (have) a lot of money for every individual component, you need to look at the big picture, and it was a hard budget and we did it (kept within budget)”.

The process was modified as it progressed. “We improved the speed of the site through testing, we identified navigational issues through testing. You know, it looks great on a piece of paper but sometimes perhaps it is not as easy to navigate around as we would obviously want it to be, usability, how things are worded, you get testers coming in cold (who) hadn't been involved with it, them going “I don't know what to do here”, “I found it quite hard to understand”. “It should be quite valuable to nut these out I guess”.

The commercially sensitive nature of the process meant the interviewees could not be entirely forthcoming. “Heaps (things we might do differently now if we were repeating the process), but I am not going to tell you what they were...hindsight is a wonderful thing”.

### **Key success factor #2 Development of an integrated Internet package**

The Web site was launched when all the supporting materials were ready. “We launched everything at once, so Web, the phones, IVR, everything was all at once.” It

is an interactive and not just an informational tool. "The other thing I am proud of is the end-to-end process, because that is something I was very strong on, so that the Internet was not just an informational tool, it had to very much be a sales tool and had to work for itself".

#### **Key success factor #4 Support from top management**

Support was evident from the start and throughout the project. "The process ...really extended from a concept that the Managing Director Ralph Norris had. This was really his idea and he managed to convince the board that this was a good idea and got the go ahead to build a business case..."

The management structure was outlined. "We tended to set the entity up even though we are wholly owned by ASB we have a separate management structure, for all intents and purposes we are a separate entity, we just happen to be part of ASB, but we have our own General Manager, management structure". "We have a General Manager, we have a Marketing Manager which is V, myself the Technology Manager, we have a Finance Manager- being a bank we have to and also as a new venture we have to pay particular attention to our costs and income...we have an Operations Manager who runs the call centre and really has the bulk of the staff reporting to her, we have a Lending Manager, because at the end of the day we are a bank and one of our prime reasons for being is to lend money to people. And that is our management structure".

#### **Key success factor #12 Secure server**

Security is a key issue. "Organisation A is a totally separate banking organisational operation, in that we have got our own products totally separate from ASB, our own services, our own systems, our own organisational structure, our own processes, and one of the channels we offer (like ASB offers FastNet), is an Internet banking secure area which we call the vault".

Careful thought was given to any damage limitation. "What we also want to do...say if by any remote stretch of possibility anybody was able to break the code of the encryption that they could only ever do malicious things, they couldn't actually hassle, annoying things actually...rather than actually transfer money from your account to their account".

Outside expertise was called on for secure systems. The R-cubed encryption software used by ASB proved extremely useful. "Absolutely and critical obviously (importance of security issues), I mean...we are a bank and keep bringing in this sort of thing and people are nervous about this sort of thing. And people are nervous about the Web anyway. So security was absolutely critical to us, we have some people working with us from KPMG who were specialists in Internet security and we had...quite a few people from audit actually ended up being business analysts and testers on the Web site. It is a big beast that keeps eating up more and more people. So security was absolutely paramount, we were lucky in that we were able to ride on ASB's coat tails a bit in that they already had ... R-cubed encryption software, and we were just able to

take that and introduce it and drop it down- we didn't have to search the world for the answer to our problems”.

“There was no point in duplicating that effort (that ASB had put into finding out about security) in a sense that we were both subject to the US government regulations in the fact that they wouldn't export strong encryption at that particular time and had to find a suitable replacement for that which we did and with the product R3 which was developed in Switzerland”.

### **Key success factor #13 Importance of a project champion**

While the management team consisted of a number of strong advocates both for the product and the technology, “The process ...really extended from a concept that the Managing Director Ralph Norris had. This was really his idea and he managed to convince the board that this was a good idea and got the go ahead to build a business case...”

### **Key success factor #14 Being aware of the competition**

When Organisation A were preparing the design for their site, V (marketing manager) did a lot of investigation to see what other banks were doing. She saw more things she didn't like than features she did. One aspect that was irritating was the "to find out more about us click here" feature which took the browser to another site such as the parent bank rather than the one that she wanted to look at. There were two analogies that banks used: the virtual bank and the brochure bank. The first analogy had the look of a branch with a teller etc and "click here for further information" or "click here for foreign exchange". The brochure analogy was like a brochure with pages and pages of information- not set out well at all.

“Truck loads of other banks (looked at while planning). I definitely saw lots of things we didn't like, probably more than we did like (helpful too) because it makes you go “I will remember that”. Things like people saying “oh find out more about us “click here”” and you would be taken to another site which is like the parent bank or something, and you are like “no, no, I want to know about this person, suddenly I am being told about some other bank that I don't want to deal with”.

One bank site she found was very seasonal and had a Christmas look at Christmas time and an Easter look later in the year. They were good in terms of refreshing the site all the time and 'keeping it clean". The other site was a United States bank called SFMB.com and was solely Internet based. The bank had some interesting alliances in terms of winning SFMB points and listed merchants who would credit customers' SFMB member cards with points once purchases had been made. The points might lead to extra interest rate payments or something similar. “They do some really interesting things with alliances in terms of how to win SFMB points or something and you click here and it is a list of merchants that if you buy goods off them there will be points credited to your SFMB member card and might get you extra rate payments or that sort of thing. And that was really cool. Some other sites where they are actually linking off to other relevant sites like they are advertising on the Web site which I

think is quite cool, use your site if you have people visiting your site why not promote other sites if you have the space and the opportunity?"

"We absolutely had to have something that wouldn't compromise...we wanted to have the banking system, we couldn't just have the informational site. People had to be able to transact on the Net and we missed out on being the first as the ASB had the launch of FastNet so we had to have the best site.

One of the ones (overseas banks) that is well written up is First Direct in the UK. We use the Internet extensively to look at the offerings of other Internet banks and direct banks start up. Canada was a particular interest to us and some German banks which are quite heavily into this area".

#### **Key success factor #16 Use of outside expertise**

The bank's technology partner was IBM and they were used for the Web site. The first thing that happened was to get the designers on board before they even knew what the site was to be (for security reasons). The marketing manager had previously worked at IBM and had two contacts there, both of whom stood out as being technical and creative. They became involved with the whole design of the site.

"I think the things I am really pleased about is the fact we managed to keep it (Web site planning) such a secret. The confidentiality was maintained because at the height of development we had 60-70 people from a number of ASB and IBM staff and contractors to IBM. We managed to keep the lid on the whole thing and we were first".

After the bank had decided on what they wanted to achieve and had thought about how to get there they decided to sound out some possible partners. "Once we had a name and we sort of knew what we were going to be, and how we were going to look in the core bank with the services we would have, I approached a couple of organisations who were already working with us, because we were very secret, we couldn't go out and have a talk to every Web site designer etc that you would want, and went through the process of finding someone who would work with us".

Other sources of outside expertise were used for the project. "We have some people working with us from KPMG who were specialists in Internet security and we had...quite a few people from audit actually ended up being business analysts and testers on the Web site".

"Once we had them on board (Web site designers), we worked with them with IBM, a business analyst and myself to actually define the requirements for the Web, so what would the structure be, what would we offer... Once those business requirements had been defined and approved basically we then went ahead with simultaneous development in tandem and design, if you like in terms of the pretty front end sort of happening ...designers and developers sitting side by side and working through things".

The bank's offshoots were used as a sounding board. "What we tried to do was catch up with them (FastNet) if we had specific problems. We thought "I wonder how they resolved this" because they have done it, they have learnt some lessons". It was more like maybe every six weeks, two months... "just so that they knew what we were doing, ...if we could stop duplication of effort or whatever, then we would. But it was pretty much that we operate stand-alone ...didn't want our site to look like theirs. It was really important that it didn't".

The bank attempted to set things up as much as possible along the virtual company concept. "We outsourced the whole of the technology development and the running of the operation. I'm the technology manager and I have no staff, what I have is suppliers' contracts and service levels. It is the same thing with the marketing side, V who you spoke to has no staff. She uses extensively agencies and specialist houses etc, design and so on, when she needs them".

### **Key success factor #19 Electronic commerce**

Both D and V were very clear that the Web site needed to be able to take transactions. "The other thing I am proud of is the end-to-end process, because that is something I was very strong on, so that the Internet was not just an informational tool that it had to very much be a sales tool and had to work for itself".

V spoke of the Web site having "A lot more (planning to do)... At the moment you can apply online and...we are one of a few sites in New Zealand where we are actually end-to-end, you can actually apply and you are going to get a response." She outlined her ideas for the future. "In the ideal world what I would like to happen is if you apply for a loan...you want to buy this house with this money...then we can go and do a search for the Valuation of New Zealand database, then I know that this house is worth what it says ...I can go somewhere else and check that the income details he has given me are correct...I can connect with VISA so that they have been right about the limit...I have done a credit check...then I can actually come back to them and say that well basically on the information you have quoted, your loan is approved...all we need now is, this document is on its way to you, you will need to sign it and fax it back and tell us when you want the money and it will all be settled".

### **Human issues and communication aspects**

The second cluster of questions in the case study examined aspects relating to the internal and external communication for the organisation, training, Internet and electronic mail policy and related issues. Aspects of customer reaction and support issues are covered in this section also.

### **Key success factor #3 Site part of overall communications strategy**

The Web site is extensively promoted and the URL used widely. "What has been happening lately, it is still very high, we are still getting a very high number of hits, we have got a lot of focus on our Web site, we are probably one of the few companies who put our Web site at equal proportion to our telephone number in terms of status, we give it on our advertising, on our informational material".

Although there are no physical branches, other ways of contacting the bank were outlined. "I guess everyone who is a customer has a computer that they can access you on, the Web is only one channel. It is a very important channel but it is only one channel, so you don't have to have a computer... Yes, they can deal with us by phone, ATMs or EFT-POS machines".

**Key success factor #5 Internet training given and updated**

Bank staff have been thoroughly trained in a range of areas including customer service and bank knowledge as well as Internet and navigating the Web site itself. "Training for account managers? We did a couple of days training. They came on board about three months before we launched so that they all became familiar with our systems and stuff and they went through Internet training as part of that. Quite a few of them were quite Internet savvy already, because of the type of account managers we have got. We have got a "peer to peer" approach and the people you should be speaking to on the phone should be a lot like you the customer. Rather than being old, you know like being sixty-five, being eighteen you know that there shouldn't really be a lot different to our customer profile. So they were quite Internet savvy, most of the people here in terms of management structure are quite Internet savvy already, so they were switched on".

Although the training was provided, there was a timing issue that needed attention. "We give our team extensive training, over quite a period, that has paid dividends and that went well and was difficult too because we were also developing systems at the same time as we were training the people. That is again, I guess one of (the) things we would probably do better and make sure the systems were available for longer prior to launch".

Training is ongoing and will adapt with further developments. "We have a permanent training manager as part of the operation staff...we expect growth over the next few years. We know that there will be on-going training needs and we want to introduce new systems, new products, new facilities etc".

**Key success factor #6 Plan for dealing with site related communication**

V is the first point of call for all sited related communication. "I deal (with) every piece of feedback that comes to our Web site. We did have one other person who is a more technical Webmaster than I am who gets the more technical questions. But I am the first point of contact, the emails and stuff that comes through".

Once again, lessons from the Fast Net have proved beneficial. "We learnt a lot from the Fast Net help desk in that 80% of their queries were about 20% of these things that people struggled with and we had the benefit of the experience. Basically our account managers answer a truckload of the queries, they have got an online sort of guide, so if someone tried to get on the Net and this and this happened they know the right questions to ask, and based on those answers they know what to recommend. If it gets beyond that that they can't help them we have got the technical Webmasters who can provide backup who can be more helpful in that area".

**Key success factor #7 Formal Internet policy**

The bank has a clear policy on security and acceptable business use. "We do have written policy things like getting outside files and sending these around, being aware of viruses and not exporting external things, you know that sort of thing. There is a lot of new court cases that have brought out some precedents and things like when you delete an email it is not deleted, it can still come back and bite you and what is acceptable to be sent by correspondence and ...personal email versus business email. We do have quite a lot of strong documented policy for our size in terms of what is acceptable behaviour and what is not".

The information of individuals is protected. "When you log onto the system where the email is you have got a password like your own name and a password, and those are individually protected, I can't go and look at someone who works for me unless they tell me what their password is".

A responsible adult level of trust exists in terms of viewing Internet sites. "Things like me going and looking at shopping mall sites even though it may not appear to be part of my job description, it is all about how other people do things and grabbing good ideas from wherever they are. It is more about, you know, you know what you are supposed to be doing... you have got to have trust with people".

**Key success factor #8 Consideration of site's marketing aspects**

The launch of the Web site was a major marketing event. "Basically we had a public relations launch first and foremost on October 6th, we were on Breakfast TV at 6.30 in the morning, on all the radio stations in terms of the news... We had done releases ...Ralph was on Holmes being interviewed in terms of the launch, etc. There was PR throughout the day and we made a decision not to announce interest rates until 4pm in the afternoon so that we kept the interest in us because interest rates are what New Zealand cares about...if a home loan goes up or down, you know, it would hit the 6.30 news which was what we wanted to be on... We were on the TV news on all channels and then we basically started advertising at 7.30 on the Monday night and ...simultaneously as we started with the advertising, we launched the Web site. At 7 o'clock we launched it, were flooded with hits on it immediately...we had over 125,000 hits on the Web site in the first seven days".

Thought had been given to various forms of media in terms of the site launch and ongoing publicity. "From the media, very positive (feedback), we won the Net Guide award for ingenuity in 1997 which was good for us cause we are a good company, (people like Clear and Fletcher won different awards and that sort of thing so we are pretty happy). There was some very positive write up, fantastic coverage in the Herald, and in IT publications about the structure of the site. There<sup>e</sup> was one negative section...there is a big site called X written by Y; he tore our site to shreds".

V had given thought to whether the bank wished to have sites linking to and from their one. "We have links from other sites coming to us in terms of advertising, so like on

the NBR we have got a Organisation A, “here is our interest rate, click here to find out more” sort of thing but we aren’t actually linked to other sites”.

The nature of the medium demands some very good quality marketing strategies. “I guess it is a channel that is very immediate in that it is like advertising and some companies forget about this...It is a constant focus to keep them up-to-date. It is very out there and it is very media. If the interest rate changes it has got to change at the right time on the Web, whereas if you have a flyer or something you know you print it and its out there when its there and you destroy the old one. There is a difference, it is just a focus of keeping it up-to-date, it is a minute by minute kind of job rather than a day by day kind of job”.

While work is progressing on the current Web site, thought has been given to extending the work already done. “Obviously we will be moving into other products and services that fit a direct financial services model...it is an absolutely thrilling experience to be part of building a brand, because that is really what we have been doing”.

The marketing initiatives and campaigns have been monitored and evaluated although results were not available to the researcher because of commercial sensitivity. “I can’t give you those (total numbers and growth over the time we have actually been online). Obviously we are small because we started from the zero base, but in fact the interest has been much greater than we anticipated and our sales, getting customers on the loan advance, all other banking products etc are ahead of our business plan. We are absolutely delighted with the response we have had”.

**Key success factor #11 Intranet in place**

No comments were made about an intranet.

**Key success factor #17 Meeting customer demand**

While the site primarily caters for New Zealand customers, there has been interest from overseas. “(Customers are) throughout New Zealand and there has been a lot of interest from overseas customers but ...it is just not so easy for them to transact if they are not New Zealand residents... Just in terms of identifying you, being able to do credit checks on you, and all that sort of stuff, in terms of what type of customer we are looking for”.

The existing customer base “is very representational of the actual New Zealand population spread. There is not one particular city or area that is standing out from the rest, so, we have a lot of Auckland customers but a lot of New Zealanders live in Auckland, so that’s fine. We are still mainly urban, we are not rural perhaps not so early adopters as the urban cousins...25 to 45 years of age, high socio-economic, well educated, (more males), professional, quite technologically aware and confident”.

V considers “Customers love convenience at the end of the day, that is what is driving us is the customer convenience and there is a whole group of customers who just

literally never go to a branch these days. It was a natural extension as to what has been happening in the New Zealand marketplace and the trends overseas".

The use of radio on the Web site is designed to appeal to their key customers. "Moodscape I really like because its real audio, nobody's really doing that in New Zealand so I'm really quite proud of that, something quite innovative... We have a contract with Sony whereby we are featuring their new releases in New Zealand, so you can listen to a couple of songs in Sony and we have a link to (radio station) BFM. So that is quite cool, quite innovative".

The Vault is meeting customer demand. "When they get into The Vault, they get a flash screen of all their accounts which is immediate so this is where all your accounts are at right now. They love that. They love transferring funds, they love scheduling, basically all the functions of The Vault are pretty well used. We have a couple of things like maintenance of your loan account which is not being used that much yet. Like changing the day you repay your loan or changing how much you pay every week".

"We were absolutely overwhelmed with the public response in the first few weeks that we launched. It was one of those things we actually didn't necessarily underestimate but didn't believe our own estimates. And it won't be a surprise to you that we have been recruiting more account managers ever since".

### **Looking back**

The third and final cluster of questions in the case study were designed to get participants to evaluate the process of putting their organisation online. Areas explored were aspects they were pleased with and proud of, unhappy and dissatisfied with, their future plans, any remaining issues that required resolving, what they would do differently with the benefit of hindsight and the role of their ISP in the project.

### **Key success factor #9 Updating and refocusing of home page**

The bank's Web site is dynamic and frequently changing. "I guess it is a channel that is very immediate in that it is like advertising and some companies forget about this...It is a constant focus to keep up-to-date. It is very out there and it is very media. If the interest rate changes it has got to change at the right time on the Web, whereas if you have a flyer or something you know you print it and its out there when its there and you destroy the old one. There is a difference, it is just a focus of keeping it up-to-date, it is a minute by minute kind of job rather than a day by day kind of job".

Customer responses have helped with the redesign of the site. "A good thing about the Web is that people are pretty open and honest and they tell you exactly how they think. If they love it they will tell you in glorious tone and if they hate it or want to give you some constructive criticism about a particular part they do that pretty openly as well, so lots of really really good feedback and we have already made several changes to our site based on the feedback we have received from customers".

An example of customer feedback helped the bank redesign the site to make it easier for customers to apply for an account. "Some people said (we thought it was really obvious but it obviously wasn't), "oh I have been all over your Web site and I can't apply for an account, how dumb is that?" Something we have been really keen on doing is the fact that you could do the whole process, you could find out about an account, do a calculation, look at what would happen if you had that account, then actually apply for that account online. Within each product section we got the button saying, "apply now". We kind of figured that it was quite good but it wasn't and so what we have done now in terms of that is at the front page we have had something called "short cuts" and one of the things is to apply for a product and you can go straight there and choose a product and then go back to make things smoother".

Another source of frustration for customers were the thought tunnels. "Things we have (called) thought tunnels in our Web site which are cute little things...say you choose to go to loans and there would be a little thought tunnel before you actually got the information showing someone being refused a loan and him coming to Organisation A and being rewarded, or something. We have taken those out because they slowed it down too much, people got really frustrated like "I've chose loans, I want to go there and you've given me this crappy little thought tunnel and you know I have already decided to go to loans, you don't need to do a sell job on me".

The process of site updating and refocusing continues. "We are continuing to review it, there is a lot more we want to do with the Web site so it is a constant process of reviewing both what customers are telling us and what we feel we could have done better or know we might do a little differently... We have already done one major refresh in terms of the structure and how it actually looks. It is completely different from when we launched".

#### **Key success factor #10 Positive relationship with ISP**

The bank has a very good relationship with IBM, their Internet Service Provider. "Well because IBM is our technology partner they are also our ISP and so it is once again it is probably a little bit of a unique situation. They have been intimately involved in every stage of the Web site development... I had another job before this one, but before that job I used to work for IBM. I understood where they were coming from...it is a slightly different culture from technical development type people at IBM".

#### **Key success factor #15 Consideration of Web site on business effectiveness**

Customer demand has led to growth in the bank's employees. "We were absolutely overwhelmed with the public response in the first few weeks that we launched. It was one of those things we actually didn't necessarily underestimate but didn't believe our own estimates. And it won't be a surprise to you that we have been recruiting more account managers ever since".

"It was also very difficult because we wanted to be conservative in our business case to say "okay this is what we expect our growth rates to be and this is how many calls

we expect to handle.” I guess we needed to be conservative to have a credible business case, which is workable. As I say, we weren’t quite equipped to handle the volumes that we did get”.

Various reports and statistics from the Web site are monitored and considered. “Daily report showing...we know the popular pages, the time of day they are visiting, we know how long they are there for, we know what ISP they are using, all that sort of stuff”.

### **Key success factor #18 Organisational culture responsive to change**

Initial predictions of site growth and customer numbers were conservative. “I think we might have been a little more aggressive in terms of our account managers and having the staff available. Again, it is very difficult to justify, the people side is still a key expense in the sense of the training, the associated equipment to support them, the premises and so on, you still have to do that even though those cost ratios are much less than a traditional bank. I think if anything that would be... we worked extremely hard in the first couple of months of operation, just trying to cope with the backlog. If we did it again I am sure we would be much more confident in our predictions of what the customer response would be”.

The growth in numbers meant new staff needed to be recruited and trained. “We were absolutely overwhelmed with the public response in the first few weeks that we launched. It was one of those things we actually didn’t necessarily underestimate but didn’t believe our own estimates. And it won’t be a surprise to you that we have been recruiting more account managers ever since”.

## **9.6 Summary**

Organisation A had quite a few positive experiences to report about their Internet presence development process. In addition, issues that arose with the potential to be negative were swiftly addressed and had a positive outcome. Interview comments on seven key success factors were particularly positive. One of these was factor two where the process of developing an integrated Internet presence was discussed. The organisation had solid support from top management, a positive relationship with their ISP and had a strong project champion. Updating and refocussing of the home page was a high priority as was factor nineteen, electronic commerce and factor twelve, secure server, partly because of the nature of the organisation.

## **10 Organisation B case study**

### **10.1 Introduction**

This chapter will look at the use of Internet within the finance sector (K). Organisation B forms the focus of the second case study.

The chapter follows a similar format to the previous one examining Organisation A. It looks at the background to the Organisation B case study and outlines the method employed for investigating the case. The results and discussion sections are next with the summary drawn from the case concluding the chapter.

### **10.2 Background**

Organisation B has traditionally been a rather conservative banking institution. The branch network is very strong and little has been done with phone banking or electronic communication with customers. The current site is seen as a niche site rather than a transactional banking site and is not intended to affect the operation of the branches.

The Web site was implemented in October 1996 and the design, operation and maintenance are very low cost. One disincentive for the bank getting online was the perceived lack of financial gain. While some employees have been interested in the bank having a Web presence for some time, management has tended to be more cautious with ownership by an English bank limiting local initiatives.

Design and development was done rather quickly with all work in-house. No survey was done of users' needs. The site was created in response to customer demand rather than what the bank considered should be online. Web site upkeep and maintenance has been sporadic and there has been limited support from management for doing this.

### **10.3 Survey implementation**

The method used has been described in the methodology chapter with the particular approach to Organisation B described here.

Initial attempts to contact Organisation B were made after examining their Web site. Contact was made with MS (Webmaster) and an interview was arranged for Friday 23 January 1998 with M, AD (Project Manager for Direct Link) and JM (Secretary for X and Y).

All three interviewees spoke openly in response to questions about Organisation B, Internet banking and communication issues. Follow-up questions were done by phone and email to those initially interviewed.

## **10.4 Results**

This section will detail the results under three headings: getting online; human issues and communication aspects; and looking back. This framework was used in the previous chapter when examining the interview data and observations pertinent to Organisation A.

## **10.5 Discussion**

This section will analyse interview material from the results section under the success factor headings.

### **Getting online**

The first cluster of questions in the case study examined motivations for getting an Internet presence, planning, designing and launching the site. The success factors relevant to this phase of an organisation's Internet development are:

#### **Key success factor #1 Plan for the organisation's Web site**

When asked about the planning process, the researcher was told that the site was set up fifteen months ago (that is October 1996) and "initially that was the idea, put the information up". The site was in response to customer demand rather than what the bank thought should be online.

"A couple of customers (or more than a couple of customers) said "why don't you have this stuff on a Web site?" and the F who is quite technically literate knew that must be pretty easy, surely that isn't going to cost us any money to do that. And he was dead right. The man (F) came to A and I and said "is this right?" and we said "yeah, yeah that will cost us nothing and any sort of a PC with a Web server on it will pick it up" and you know, so we went to our design unit and said "do you have time to do this (without making a big song and dance about it) and you might have \$1000 consultancy out of it" and they were just keen "yeah we would love to do that" so they sort of did it, they fitted it into their schedule. So we didn't take on any marginal cost at all really".

"Our current home page isn't electronic banking...A lot of finance houses started to say "stop faxing us this and put it on the Web" because it is where people are picking it up. So that drove our Web site which is essentially (currently anyway) economic information, economic reports and the various publications that our economics department produces".

A comment that illustrated the Bank's attitude towards the role of the Web site has been reflected in the site design, "We have tried to make the site sort of like a bit businessy and say maybe slightly dull, you would only come to it if you were actually interested in that information, it is not a surfing page".

This whole thing (current Web site) was done in sort of a couple of meetings saying "what do you want to do and when?" Some people were saying, "oh you're putting up

a Web site, that sounds rather scary". (It is on the other side of the firewall, there is zero risk!). "Do you want to disappoint F?" was a comment made to Web site detractors.

No consultation with prospective users was done and the site content was governed by what was available at the time to construct a brochure-based information site.

The design unit in the bank who worked with the ED designed the site. "I would say that it is very clearly Organisation B, it has the right colours, the right images, it has the right feel in terms of how conservative it is. It is quite a nice site, looks reasonably sophisticated but is not flashy, you know, we don't have animated gifs, we don't have garish colours, it is quite low key".

Maintenance of the site is very low cost. "It (the site) is hosted at the moment on the NT machine with one firewall which requires very little maintenance and management. Overall it has been a very inexpensive exercise".

While the development of the current Web site has been rather ad hoc and is a combination of brochure-based and database-driven components, some comments were made about the complexities of extending this to transactional banking. Although this was a development that the three interviewees were keen to see happen and largely felt was overdue, caution was expressed about some of the technical aspects involved with online banking. "All of a sudden you are thinking about how you are going to make that (technical side) happen because it is not just a matter of flicking up a Web site and connecting to the back end and hoping that everyone knows what to do. Our experience with the electronic banking product is that we end up owning a lot of people's PC problems that really aren't much to do with us... So that has to be well managed and you have got to do it well. Our perception of the ASB services is that they have done themselves a disservice to some extent as it hasn't gone as smoothly as it should have".

Another comment related to the technical issues. "It will have to come through the firewall into our internal network, obviously to be processed. Transactions have got to be live. There are issues of reliability and robustness and redundancy and what have you".

Those involved were asked for their thoughts about online banking and Organisation B. One comment was, "From the perspective of A and I, it has been clear that Internet banking is the way for us to go for some time. We have a very successful corporate based electronic banking product (Direct Link)...but the cost of issuing it isn't cost effective for personal customers. It is too heavy weight, it does international payments, letters of credit and very good at doing payroll budgets, 2000 transactions and that sort of stuff and we would suspect a personal customer just wants to see the balance of their cheque account and move a little money somewhere".

A further comment that showed their predictions about what customers wanted with online banking was "I can't actually see why a person would want it. If you were only running a cheque and savings account which is what most people are doing, what would you need online banking for?" This comment was followed with the need to make money out of the process. "Some people lean on the Web or Net to the extent of zealotry...if you can't do it on the Net it isn't worth doing the thing. It makes the mundane thing of what is in my cheque account somehow more cool because, you know, if we could pander to, and somehow make money out of it we should as an organisation".

"Statements are the really obvious one I think, I mean making your bill payments and this is a hassle (with phone banking)...but it is almost useless from my perspective in terms of wanting to see what transactions have gone through my account. That would be the killer part". ... "I think the visual aspect of using the Net will add to the value of the covenant banking type of concept". These comments were based on the personal thoughts of the three interviewees and no survey had been undertaken to identify users' needs.

One aspect that seemed to be a demotivator for getting online was the perceived lack of financial gain for the bank. "You have got to understand the profitability of customers. I mean that is the other thing about Internet is that you have got to figure out how to make money out of it."

Some other comments that reflected the bank's thoughts about costs were, "People ring up saying well I want to do Internet banking and if you sent them a letter back saying "well that is fine, it will cost you fifty bucks a month, tell us when you want to sign up", you wouldn't hear from them again. And those are the real questions, so we have views on how to make money out of the Internet"... "I wouldn't pay 10 bucks a month for it", (other interviewee's comment) "I wouldn't pay five bucks a month for it".

A further comment expanded on the above statement, "When M talks about making money out of it he is...that reference is saving money from using that means and attracting more customers". The Internet medium was compared with telephone banking, "Absolutely that's what telephone banking is all about. It is convenient to have a convenient sort of client but it is also a cheaper delivery mechanism for the bank".

"You've got to think hard for that retail customer, personal customer, how are you going to save the organisation money because some people are really going to come to the branch less, and if they do, it is not as easy as it sounds to say "oh well, who will come to branches, so we can reduce our costs. Everyone says about general dropping head count, but again these are very difficult problems...it all sounds very simple and no doubt the man who says we don't we have electronic banking "you are a bunch of idiots" type of thing...in that personal effect it is a little more complicated, I believe".

A later comment was, "We will do some transactional banking. It will be a whole different...it will have no parts in common with this Web site. This will be subsumed by it and looked after. That will be a real initiative". Another comment in the same vein was "transactional banking is obviously going to cost a lot more to do, has to be better thought out".

The launch appears to have been practically non-existent with "not one single thing (done) other than put the site up and register it. I don't believe that we sent an email to all our customers or wrote them a letter saying that "we have this site and please use it, it is really good", I think we just stuck it on and just let nature take its course".

A submitted the Web site URL to about 20 larger search engines, indexes round the world and in Asia and Australia "so it should then be picked very regularly but the sorts of words that were registered were all economics and New Zealand economy and business analysis".

### **Key success factor #2 Development of an integrated Internet package**

Organisation B doesn't offer an interactive online banking site. It was described as "a niche site, very much a niche site to meet a particular need for a small more sophisticated group of the bank's clients". Those using the information on the site are "large international investors, superannuation funders, Wall St financiers, people who have responsibility to invest a large amount of money and diversify it around the world. We (are) giving them constant information so they can feel comfortable with this country and having funds here".

At the moment the site is very much an add-on operation to the bank's operations. There is not, for example, the opportunity to read the information and then continue further to make transactions on the site. M explained the bank's philosophy, "I think from the bank's point of view is the Internet is just another delivery channel and so you could never consider Internet as a major direction of the bank, because that would be like saying "shrubs in the branches are a major direction of the bank". It is a statement that does not make any sense of how we understand banking. We will do it, and again the people in the bank are really keen for Internet banking to happen."

A comment that showed some bank staff lacked familiarity with the Internet was expressed as follows "I was with the personnel guy in this building, he got an email yesterday which referenced the particular applicant's CV on the Web page, so I had to go and find a Web page and print out the CV. That was from a Bulgarian applicant. He had just completed his tertiary education in economics and finance. Not very technically literate, our personnel manager". The tone of this comment implied that this was not the only staff member who lacked Internet skills.

A comment that reflected the random nature of the bank's Internet development was, "It's been uncoordinated because the other Intranet ... that we have something to do with, is another site across the road and they have been dabbling, they have been more trying to find a problem to solve than we have, we thought oh this has, you know we

have had a problem, how are we going to get everyone else to understand this? So I said "why don't we get a free server somewhere and whack it up on the Internet?" and eventually, so we have solved it.

#### **Key success factor #4 Support from top management**

A comment that gave some insight into the bank culture was, "Internet is very scary for a bank, you know we are owned by an English bank which is very conservative and so it is a long path before we can convince all the powers that be that we won't immediately turn all the staff into paedophiles by connecting to the Internet, or we won't immediately have hackers come from some strange part of the US...and somehow manifest themselves in our mainframe or issues like that".

"Top management is split. You know very top management is sort of more conservative, you know- "who would want to do that (online banking) anyway?" But one level down it is pretty imperative and we have got to get going. And so it is just, I mean we are not that sort of het up about it... This is a very exciting, a frustrating issue for the bank so some people find it very hard to make this happen".

The issue of management support was referred to in conjunction with further directions and thoughts about interactive banking at Organisation B. "The resistance to that is along the lines expressed by M earlier, the concerns about utilising the Internet for business, what sort of risks and... top management doesn't fully appreciate what that is and haven't completely focussed on it yet. Haven't been able to completely analyse it".

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Another comment illustrating the rather random development of Internet within Organisation B was related to the intranet. "It's been uncoordinated because the other intranet, that is the intranet that we have something to do with, is another site across the road and they have been dabbling, they have been more trying to find a problem to solve then we have, we thought oh this has, you know we have had a problem, how are we going to get everyone else to understand this? So I said "why don't we get a free server somewhere and whack it up on the Internet?" and eventually, so we have solved it."

#### **Key success factor #12 Secure server**

The Web site maintenance cost is very low. "It (the site) is hosted at the moment on the NT machine with one firewall which requires very little maintenance and management. Overall it has been a very inexpensive exercise".

### **Key success factor #13 Importance of a project champion**

When asked about the planning process, the researcher was told that the site was set up fifteen months ago (that is October 1996) and "initially that was the idea, put the information up". "F who is quite technically literate knew that must be pretty easy and surely that isn't going to cost us any money to do that. And he was dead right. The man came to A and I and said, "is this right?" and we said, "yeah, yeah, that will cost us nothing" and any sort of PC with a Web server on it will pick it up. We went to our design unit and said, "do you have time to do this?" (without making a big song and dance about it) "and you might have \$1000.00 consultancy out of it" and they were just keen- "yeah we would love to do that", so they sort of did it, they fitted it into their schedule. So we didn't take on any marginal cost at all really".

### **Key success factor #14 Being aware of the competition**

Those interviewed were asked whether they were aware of any other banks providing a similar service to what Organisation B were doing with their information. "JP Morgan has the same sort of site, it is a huge site and offers information called risk metrics. Banks all over the world, everyone all over the world goes to that site to get this information, to constantly drag down their statistics. They are the supreme example of an organisation that is getting a name out all the time by providing a free service. And presumably it is just all out of a marketing budget effectively all those 5000 statisticians and economists working there but you can't see their advertising offering".

The three interviewees were asked what type of watching brief was being kept on other banks and their plans for online banking. "People (at Organisation B) don't have to feel threatened because our assessment of the ASB thing is that we think it is pretty rubbish and not very slick...The general impression is that Organisation A despite the award recently for the well managed project, I read, seems to have absolutely overwhelmed them with the problems that they have been, you know you hear...M and I are sort of computer people more than bankers really and we have got a lot of other computer people who know people. And sort of through the grapevine, they seem to have encountered very many problems- I think the impression will be the marketing has gone very well but the ability of service to deliver to the people who actually make the enquiries has been to absolutely overwhelm them and they sort of have a lot of difficulty holding together".

Those interviewed felt that the Organisation A case differed from their own situation. "I think Organisation A who are a bank where their entire focus is Internet business and if they weren't really another bank, I don't think it would have got set up - just a pure Internet based bank in New Zealand standing on its own. I think it would not work...a bit of research done recently on K refers to the first Internet bank and their deposit base, the number of clients they have and the costs associated with them, all indicate that it is pretty marginal for them as well. The partner they are involved with (the technology company)- that's really their base, they're associated with each other.

The bank is their shop window for the technology organisation as much as it is a successful bank I think”.

When asked whether what was happening in other countries would have influenced any of the site content, this was not seen as relevant. "I doubt it, I think it is meant to market to customers and the rest led directly to it".

Comments about the first mover advantage were, "I think we should have been first in, we have got people technically capable and have been for years to do this, personal view I think we should have been first in...I have a view that while you wait -the market is not really saturated- there's just talk about the massive growth but its only going to get bigger and maybe it isn't that big yet, I also don't think that many people will actually shift banks to do it". These comments presented a different view from top management's views (refer success factor #4).

A comment about some of the opposition's customers was, "there will be some people, the sorts that are zealots, the people who are not really interested in their banking at all but the...computer nerds, some people think you know that would be so cool to do my banking on the net, I can't get anything else right, right I will go to Organisation A, I will open an account".

The following comment indicated that there was some indecision about whether not having an Internet presence would be harmful for the bank. "It (Internet banking) is just another channel and the banks -if we don't offer it and we are the last to offer it...there is no, at the moment I would suggest that they will say is there any real evidence to suggest that in a while it will hurt us in terms of customer base and profit?" There was no evidence of any survey of Organisation B customers to assess any demand for the service or monitoring of users of the existing site in terms of customer satisfaction.

#### **Key success factor #16 Use of outside expertise**

The current bank's Web site has been designed in-house. The following comment indicates the process. "A couple of customers (or more than a couple of customers) said "why don't you have this stuff on a Web site?" and F who is quite technically literate knew that must be pretty easy, surely that isn't going to cost us any money to do that. And he was dead right. The man came to A and I and said "is this right?" and we said "yeah, yeah that will cost us nothing and any sort of a PC with a Web server on it will pick it up" and you know, so we went to our design unit and said "do you have time to do this (without making a big song and dance about it) and you might have \$1000 consultancy out of it" and they were just keen "yeah we would love to do that" so they sort of did it, they fitted it into their schedule. So we didn't take on any marginal cost at all really".

The Web site hosting has also been done in-house. "It is hosted at the moment on the NT machine that was one firewall which requires very little maintenance and management. Overall, it has been a very inexpensive exercise".

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The Web site hosting has also been done in-house. "It is hosted at the moment on the NT machine that was one firewall which requires very little maintenance and management. Overall, it has been a very inexpensive exercise".

Although their expertise had not been needed for the existing Web site, technical contacts are available through Victoria University. "With the university base, we have

always got some technical people. A long time there we had technical issues when they came down to talk to our guys in a meaningful way. But they don't do anything for us".

### **Key success factor #19 Electronic commerce**

There appears to be a real reluctance to use the Internet for banking by this particular bank. One of the views from the bank's upper management as well as those involved with the present Web site is that the cost will deter potential customers. "People ring up saying "well I want to do Internet banking" and if you sent them a letter back saying "well that is fine, it will cost you fifty bucks a month, tell us when you want to sign up", you wouldn't hear from them again. And those are the real questions so we have views on how to make money out of the Internet".

Other concerns centred around the technical aspects of Internet banking.

"Transactional banking is obviously going to cost a lot more to do, has to be much better thought out. It will have to come through the firewall into our internal network, obviously to be processed. Transactions have got to be live. There are issues of reliability and robustness and redundancy"... A further comment from A was in agreement with M's concerns. "Yeah, so we use a protocol internally, it is not a technical issue now to use it externally... resistance to that is along the lines, expressed by M a bit earlier. The concerns about utilising Internet for business, what sort of risks - top management doesn't fully appreciate what that is and haven't completely focused on it yet. Haven't been able to completely analyse it and understand it".

### **Human issues and communication aspects**

The second cluster of questions in the case study examined aspects relating to the internal and external communication for the organisation, training, Internet and electronic mail policy and related issues. Aspects of customer reaction and support issues are covered in this section also. The success factors relevant to this phase of an organisation's Internet development are:

### **Key success factor #3 Site part of overall communications strategy**

"Our list hasn't gone down since we have put it (publications) on the Internet because people still get a hard copy...No one has said "don't send it to me anymore because it's on the Internet".

When asked if the site had attracted new customers or clients, it was evident that little monitoring and follow up was in process. "It is possible, we wouldn't know. We have a few hits on those pages and we get an amount of traffic so it is being read but we can't tell by who".

When asked whether what was happening in other countries would have influenced any of the site content, this was not seen as relevant. "I doubt it, I think it is meant to market to customers and the rest led directly to it...It was already being provided to

them in paper form because we had people saying "why don't you guys have a site with all your stuff on?".

More information is provided to customers when material is faxed, so the printed material doesn't absolutely duplicate the online information. There does appear to be some confusion over the relative costs of the exercise. "There are more timely things that we send out in these faxes. There is a cost saving when you convert that. You know we want to fax it to people in the first instance, or that can't access it or it is not as convenient for them to get it on the Net, then we would want to fax, because they buy these things as soon as people get them. That is quite expensive to fax everyone".

When the researcher asked if a premium would be charged for sending faxes or paper based information to encourage readers to look at the Internet material instead, the response was, "I shouldn't think so and I don't think they ...I mean you have to look at the fact that we have this ED, who produce all this stuff for us. I think it would actually, for the likes of the Business Outlook and Regional Trends- I think it costs something like 30 cents to actually produce each one. Well to actually then try and charge someone to receive that money, it would probably cost you more to receive it. We do charge the odd person for (one of the forecasts) which is every second month because they actually want twenty of them, so every quarter we actually charge them \$10 for the smaller copy and \$20 for the bigger copy. They are quite happy to pay for that because they want the extra copies".

When the researcher made the statement that the information was available online for people and they could go there and get it without having to pay, the comment made was, "they actually want the good printout". They can also get it in PDF format so it would come out exactly the same. There appears (from the interview comments) to be a desire for "nice high quality gloss paper and a heavier card cover".

One interesting aspect was that readers were often not making an "either paper or Web" decision in terms of gaining the material- a significant number of people were reading it on screen (and possibly printing it out) and getting a paper copy supplied by Organisation B. There was an advantage in getting the quarterly report in printed form, "I thought the quarterly one is a classic, it's in copperplate, looks really great on a piece of paper but on the screen it has a very high resolution, a bit grainy, gets a bit hard to read, find your way round the pages and all that. These are the sorts of publications that will ultimately find their way back to an organisation's information centre and have to be filed in the library for the next five years. That particular one we only send to our corporate clients, we actually keep that down to a reduced list, mainly because they are expensive. It is all right to send it out if it is 30 cents a copy (we would send that to anybody), but some of the others we keep down to a limit".

In addition to the paper that is sent out, there is a lot of faxing done each week via SmartFax. These comments indicate that Organisation B are not thinking ahead about the future of the technology.

### **Key success factor #5 Internet training given and updated**

No training was given to Organisation B employees on searching the Internet or how to use their Intranet or own Web site from the researcher's understanding of discussions.

### **Key success factor #6 Plan for dealing with site related communication**

When asked about the response they had received to graphs rather than just texts, there was once again a lack of knowledge about viewer response, "I don't really know myself".

Comments about requests for information from the site indicated that some Organisation B staff weren't conversant with the content. "A lot of people actually had the research papers there listed (I've never really gone through the page to be honest). There is a new instrument for this country and we took the view of being pre-eminent and understanding and explaining and so the E guys did quite a fat paper- that is the main one they ask for".

A later comment in the conversation was, "I don't know if you (other two interviewees), like G had read any of these reports (and I must do it), but they try and make an interesting style so all the way through there is all these little jokes and little plays on words...this is their attempt to make it more readable and lighter".

A further question explored the feedback the site received. The response was, "I sat down the other day trying to think what people sent to me and it was actually a bit more than I realised. People are sending CVs wanting jobs. So you get things quite unrelated to what the pages are about. People wanting to transfer money from overseas, wanting to open accounts if they are overseas and coming back to New Zealand".

Some negative feedback about the site design was, "T had a (little picture) in the Business Outlook last year- a noose. We had a customer who was extremely upset because he had just had a friend who was a farmer who had just been killed with something, he thought it was very inappropriate to have something like a noose- presumably there was some bad news with regard to the economy".

A change made in response to negative feedback from the corporate interactive banking product was, "We had a sort of thing in Direct Link...a change in status was signified by something changing from red to green. The red/green colour blind people... so we modified that to cater to that particular need".

Some of the other communication received from the site was job related. "You still get people who will say "oh yeah ...that is a good place to ask for a job as a teller". That is what I get all the time". A later comment was, "They (job applications) do come in. I was with the personnel guy in this building, he got an email yesterday which referenced the particular applicant's CV on the Web page, so I had to go and find a Web page and print it out the CV. That was from a Bulgaria applicant. He had just

completed his tertiary education in economics and finance. Not very technically literate, our personnel manager”.

Some comments related to the lack of online banking offered by Organisation B. "A lot of people want to know when online banking is coming. I had one guy who was quite upset about the fact that Organisation B did not have online banking and he reckons it is the worst Web site he had ever come across". The continuation of the comment was another sign that there was a somewhat haphazard process for actioning email communication. "I actually passed that one onto N to deal with. The guy sent me another one about a week later so I assumed N hadn't replied to it so I sent it to him again. I haven't had another one from this guy so I assume that N must have written to him. He was quite ...wasn't very impressed with our Web site at all. His is the only one that I have received that...his subject line was "the worst Web site ever"".

#### **Key success factor #7 Formal Internet policy**

Organisation B has a clear policy that email is for business purposes except that they are not allowed to do any business on it either. "It is a strict policy and we inherit it from L who are our parent company... I suspect our audit people would have come up with it themselves if they had inherited it because that is what security are there for-telling us not to do anything”.

#### **Key success factor #8 Consideration of site's marketing aspects**

"I submitted this (site) to about 20 larger search engines, indexes around the world... so it should be picked very regularly but the sorts of words that were registered were all "economics" and "NZ economy" and "business analysis" rather than "personal banking" or "NZ banking" or "retail".

When asked about marketing the site the comment was, "I don't think we did any work at all. Not one single thing other than put the site up and register it. I don't believe we sent an email to our customers or wrote them a letter saying that "we have this site and please use it, it is really good, I think we just stuck it on and just let nature take its course". Dealers told people that the site was available and the URL was put on the letterhead.

#### **Key success factor #11 Intranet in place**

Organisation B has an Intranet although it isn't referred to as such. HTML has been used for about the last three years before the term "Intranet" gained recognition. "Intranet implies a more structured effort and that is beginning to happen now with thoughts of some sort of group to provide services and marketing". The Intranet will not apply to the branches, rather to what is termed the "corporate campus which is "basically not the branch but everyone else outside banking, retail, marketing groups, finance, technical, IT developments etc”.

The Intranet duplicates the information on the Internet site and there are mirrors for those staff who can't pass out. There is some testing with the material, "the guy in the

design unit is responsible for it and puts it on a server where people can just go and check it out before it gets moved to the Internet”.

The comments made about the Intranet indicate that, like the Web site, it caters for a select audience and has been created in-house. “Until recently it has been a grass roots kind of movement, (that means that people know how to do it- typically the technology people), so what’s getting up there are technical documents that need to be shared, that need to be made more public, so some sort of specifications for projects, but more likely technical documentation about systems or about tools with links to outside sites”.

Another similarity that the Internet and Intranet at Organisation B have in common seems to be the vision of what could be and the present reality. “That is about it at the moment, but we are trying to, the bank has a view that there is an opportunity here to do something and whether they see the opportunities or not, the purpose of this (IT) group is to understand that opportunity. The pursuit of the groups that A and I work in, we think we have got a lot of the real details”.

#### **Key success factor #17 Meeting customer demand**

The interviews tended to reveal a lack of customer responsiveness and interest. Some comments from potential customers were relayed with little understanding of their wants or needs.

Comments about the current Web site include "All those foreign currency graphs... they haven't been updated since the 19<sup>th</sup> September because SE has been on holiday. And I was actually getting messages back saying when is it going to be updated? So people are looking and I think it was a bit of a have because whether they were customers or not but their tone in their emails were actually annoyed that it had been nearly a month since an update. I think but it is a free service, you know, and it is Christmas but they think that has nothing to do with it to be updated". This comment illustrates the view that the customers were being unreasonable to expect daily figures to be updated. At the time of the interview these daily figures had not been updated for over four months.

One quite patronising comment about users of another Bank's Internet banking facilities was "The Internet side, computer nerds, like you know, some people think you know that would be so cool to do my banking on the Net, I can't get anything else right, right I will go to Bank X, I will open an account". There was agreement from another interviewee. "That is right, because some people lean on like a Net or Web to the extent of zealotry aren't they... if you can't do it on the Net it isn't worth doing the thing. You know it is sort of more fun, it makes the mundane thing of what is in my cheque account somehow more cool because, you know, if we could pander to, and make money out of it we should as an organisation".

A comment not based on any customer surveys was "We would suspect a personal customer just wants to see the balance of their cheque account and move a little money

somewhere". One in a similar vein was "I couldn't actually see why suddenly a person would want it. If you were only running a cheque and savings account which is what most people are doing, what would you need online banking for?"

There was awareness of customer interest in the area. "A lot of people want to know when online banking is coming. I had one guy who was quite upset about the fact that (our bank) did not have online banking and he reckons it is the worst Web site he had ever come across".

Another comment indicated those supposedly tasked with the Web site were unsure about the responses in terms of requests and what the hit rates had been for the content. "I don't really know myself (what the response was to the graphs rather than text from economics)".

Some visitors to the site were using it in ways that those who designed it had not originally intended. "People are sending CV's wanting jobs. People like people from overseas, Europe mainly who may be coming here for six months and maybe want to come here for a bit of experience".

### **Looking back**

The third and final cluster of questions in the case study were designed to get participants to evaluate the process of putting their organisation online. Areas explored were aspects they were pleased with and proud of, unhappy and dissatisfied with, their future plans, any remaining issues that required resolving, what they would do differently with the benefit of hindsight and the role of their ISP in the project. The success factors relevant to this phase of an organisation's Internet development are:

#### **Key success factor #9 Updating and refocusing of home page**

"There were about ten to fifteen graphs that were organised later. . .it was information that changes every day so just figuring how to update it with technology being slightly new, it took a little bit of time so the pick up wasn't quite as quick as I would have liked".

Another comment that indicated regular maintenance of the site might not be a high priority was, "It hasn't been updated since the 19th September because SE has been on holiday (interview date was 23rd January). And I was actually getting messages saying, "when is it going to be updated?" So people are looking and I think it was a bit of a have because whether they were customers ... but the tone in their emails was actually annoyed that it had been nearly a month since the last update. I think but it is a free service, you know, and it is Christmas but they think that has nothing to do with it to be updated. Obviously people are reading it but I don't know".

#### **Key success factor #10 Positive relationship with ISP**

Organisation B interviewees were asked about the role that their ISP played. The reply was, "Completely insignificant with respect to our Web, we just used NetLink up at Victoria University to provide a link". The bank has their own server and firewall.

Having little to do with the ISP was not seen as a negative, rather not necessary because of expertise and equipment within the bank. "With the university base, we have always got technical people. A long time ago there we had technical issues when they came down to talk to our guys in a meaningful way. But they don't do anything for us. It could be any ISP as far as we are concerned."

#### **Key success factor #15 Consideration of Web site on business effectiveness**

There appears to be two main themes that appear in this section. One is that the bank is aware there is a cost of developing an online banking facility and are cautious about a possible return. Another theme is that they are unsure what the response to their current site is.

Comments about the costs of a bank's services include "It is about you (the bank) increase your services which will make you a better place to bank. You have to think hard for that retail customer, personal customer, how are you going to save the organisation money because some people are really going to come to the branch less, and if they do, then it is not as easy as it sounds to say "Oh well, who will come to branches, so we can reduce our costs?", so what are we going to do- snap 20% off all our branches and rent it out to Michael Hill Jeweller or something?"

Another related comment from A was "It (Internet banking) is just another channel and the banks -if we don't offer it and we are the last to offer it...there is no, at the moment I would suggest that they will say is there any real evidence to suggest that in a while it will hurt us in terms of customer base and profit?" Also, "You have got to understand the profitability of customers. I mean that is the other thing about Internet is that you have got to figure out how to make money out of it". A further explanation followed. "When M talks about making money out of it he is...that reference is saving money from using that means and attracting more customers".

A view that Internet banking is not a major motivator for this particular bank at the moment was revealed by "I would suggest that the bank's point of view is that Internet is only just another delivery channel and so you could never consider Internet as a major direction of the bank because that would be saying shrubs in the branches are a major direction of the bank. It is not a statement that makes any sense of how we understand banking."

The second theme (failure to monitor responses to current Web site) is illustrated by "It is possible (that we have attracted new customers or clients through the home page), we wouldn't know. We have a few hits on those pages and we get an amount of traffic so it is being read but we can't tell by who".

#### **Key success factor #18 Organisational culture responsive to change**

A comment that gave some insight into the bank culture was, "Internet is very scary for a bank, you know we are owned by an English bank which is very conservative and so it is a long path before we can convince all the powers that be that we won't immediately turn all the staff into paedophiles by connecting to the Internet, or we

won't immediately have hackers come from some strange part of the US...and somehow manifest themselves in our mainframe or issues like that".

### **10.6 Summary**

Organisation B had mixed success with a range of positive and fairly negative comments relating to the success factors. Development appeared rather ad hoc and led by technical staff who were hampered by a conservative culture. Support from top management was missing and contrasted strongly with comments made regarding their relationship with their ISP, perhaps not surprising given their technical background. Updating and refocussing of the home page was not a high priority and little if any consideration had been given to the impact of the web site on the effectiveness of Organisation B.

## **11 Organisation C case study**

### **11.1 Introduction**

This chapter will look at the use of Internet within the government administration and defence sector (M). Organisation C forms the focus of the third case study.

This chapter follows a similar format to the preceding ones. It looks at the background to the Organisation C case study and outlines the method employed for investigating the case. The results and discussion sections are next with the summary drawn from the case concluding the chapter.

### **11.2 Background**

Organisation C is a government organisation serving the New Zealand public from a Wellington location. There is a strong network of local and regional connections that Organisation C serves and advises.

The move online started in 1993 in terms of infrastructure and providing employees with email. Plans for the Web site started at the end of 1995. There has been a high level of awareness by staff in the Web site project and in general attitudes have been positive. The project has been a team effort with consultation within Organisation C but not externally with their clients and the public. There was pressure from the CEO to get a Web site up and show some leadership. The current Web site is seen as providing information and there is no desire to perform financial transactions.

Content development was done predominantly by the organisation with design aspects outsourced. Upkeep and maintenance has been done by internal IT staff. As a knowledge-based organisation of professionals working with information in a range of different formats, the organisation's staff were very interested in the project and how they would use the Web site.

### **11.3 Survey implementation**

The method used has been described in the methodology chapter with the particular approach to Organisation C described here.

Initial attempts to contact Organisation C were made after examining their Web site. Contact was made with GC (General Manager of Management Systems), VC (Webmaster), DA (project advisor) and KC (Communications Manager) and after a series of phone calls, an interview was scheduled for 23 January 1998.

All three interviewees spoke openly in response to questions about Organisation C, Internet information, client and communication issues. Follow-up questions were done by phone and email to those initially interviewed.

## **11.4 Results**

This section will detail the results under three headings that have served as a framework for analysing the previous two cases. There are a number of success factors grouped under each heading: getting online (8); human issues and communication aspects (7); and looking back (4).

## **11.5 Discussion**

This section will analyse interview material from the results section under the success factor headings.

### **Getting online**

The first cluster of questions within the case study examined motivations for getting an Internet presence, planning, designing and launching the site. The success factors relevant to this phase of an organisation's Internet development are:

#### **Key success factor #1 Plan for the organisation's Web site**

Organisation C was asked when they started planning to be online. "I think it started back about 1993, with changing the network infrastructure and that is where it started to lead to TCP/IP, the Internet sort of networks and there was a consultant brought in to go through that process and probably one of the outcomes of that was just getting, as the network was established, getting electronic mail on everyone's desktop after that, sort of Netscape as well". Later on "about the end of 1995, at the time we were working on the J project, one of the things was to start to look at Web developments and getting a basic presence online".

Other interviewees confirmed "the site has been going ... since December 1995 and its primarily a tool for kind of telling people about Organisation C's services and products, access to online systems, that kind of thing".

A team of people were involved in Organisation C's planning. "A lot of the technical infrastructure was probably done in-house with the consultant on the technical network level in terms of developing the Web site, that was input from myself, the marketing manager that was here at the time and the public relations person at the time who is no longer here trying to get a site established with a minimum amount of information about what the organisation did and that was going, that kind of thing".

The development time for such a large organisation's Web presence was comparatively short. "About three to four months (prior to the launch) the planning started. A lot of the kind of gathering information and stuff and structure, how the Web site will sort of look was probably done in-house".

While some employees of Organisation C were consulted, consultation wasn't done with those clients and members of the public that they dealt with. "No (we didn't consult with people outside the organisation about what we thought they would want to see). More anecdotal comments, it was more just actually getting something up

there, the pressure was both from the CEO, I think the CEO had a vision too that he wanted with project J to ... try and push the differences, and the new things that happened ... kind of into the organisation and the organisation starting to think about Internet ... of differences that it could make”.

**Key success factor #2 Development of an integrated Internet package**

The Communications Manager considers “the challenge for us within the next year is to implement the systems and getting information that is often published other places whether that is hard copy or external publications...or what stuff goes on the discussion lists or that type of thing to get it all into the site as well”.

The impression gathered from the four people interviewed was one of “more (content) is better”. There did not seem to be any strong issues of Web site structure or systems that needed considering.

**Key success factor #4 Support from top management**

“At the time, Organisation C was working on the J project and one of the things was to start to look at Web developments and getting a basic presence online. I think more because the Chief Executive wanted it”.

The change of CEO made a great deal of difference to the project’s momentum. “So there was that kind of thinking and it changed from after Peter left and we got the interim Chief Executive DJ who said “I just want it up”. It is a sort of... that kind of decision is made and it went up there”. There was an expectation for Organisation C should show some leadership in getting an online web site developed”.

**Key success factor #12 Secure server**

No particular comments were made about having a secure server as such but a previous comment was that Organisation C was their own ISP.

**Key success factor #13 Importance of a project champion**

The two CEOs of Organisation C have both played important roles in getting the Web site to its present stage. “About the end of 1995, at the time Organisation C was working on the J project, one of the things was to start to look at Web developments and getting a basic presence online. I think more because the Chief Executive wanted it. That was PS, we have got a different Chief Executive now, maybe he wanted it, there was an expectation Organisation C should show some leadership in getting an online Web site developed”.

**Key success factor #14 Being aware of the competition**

Organisation C does not appear to see themselves in competition with other organisations. “I think (what other overseas organisations of our type were doing online) was kind of a strong influence ... the site is more modelled probably on X in Canada.”

**Key success factor #16 Use of outside expertise**

The content and hosting of the Web site has been done in-house. "We went out to Helios to get the graphics done, and just because of the amount of money that we had which wasn't very much".

While a lot of the technical infrastructure was done in-house, "there was a consultant used on the technical network level in terms of developing the Web site, that was input from myself (Web master), the marketing manager that was here at the time and the public relations person at the time who is no longer here trying to get a site established with a minimum amount of information about what the organisation did".

**Key success factor #19 Electronic commerce**

While the primary focus of the Web site is providing information, sales are taken onsite. "They can use that, school can use it in a report or something like a student's assignment but if a publisher wants to use it they will come back to us and order the image online, so there is a shopping basket facility within the site so you can actually seamlessly order that image by credit card or work order".

Further plans include making more of the research reports available online. "One thing that we have been intending to do was, someone with their research reports from the policy and research section... they are tending to want the copy published in full text online because I mean they do all the work and probably create a quite simple format that is published. People want to buy it for quite a minimal charge, but the research manager is very keen to get research staff online so that it is actually there available to people to use, because they do quite a lot of extensive research".

**Human issues and communication aspects**

The second cluster of questions in the case study examined aspects relating to the internal and external communication for the organisation, training, Internet and electronic mail policy and related issues. Aspects of customer reaction and support issues are covered in this section also. The success factors relevant to this phase of an organisation's Internet development are:

**Key success factor #3 Site part of overall communications strategy**

The prime focus of the Web site is one of providing information. "So the site has been going ... since December 1995 and it's primarily a tool for kind of telling people about Organisation C services and products, access to online systems, that kind of thing".

K the communications manager says, "The site is, from my point of view, one of the most important communication tools that we have got, that tends to be the way that I view it".

Evidence of the site being one of the key communication channels for Organisation C is "I guess staff within the organisation or managers in the organisation... just thinking

about what sort of information they might want to put up onto the Web site when they are doing any particular project and thinking about that right from the start”.

An interesting discussion about whether the Web site was perceived as a substitute or supplementary channel arose. “The organisation is thinking right now about its Web policy and there will probably some coverage in there about how it is used as a communication tool but I don’t see it as a replacement, I mean we are still debating this internally if you like. For example, we have an internal staff newsletter which you produce a hard copy every week and it also goes up onto the site, so if you are in the site you can whizz through the contents and just select the thing that you are interested in or whatever, so you can get round it quite quickly”.

Organisation C saw that “the focus is on the electronic delivery, but there is still the option provided for people to access material through hard copy and I think that is true and that is reflected in the management work that is going on in the organisation. In the last little while, the design elements for a lot of our publications have become a lot more simple and a lot more lower key and we are achieving economies I guess in our print production because we are able to put information up electronically as well, but I guess the organisation has got a huge range of target audiences and markets and things”.

The Web site is linked to other Government sites. “We have links to other sites, we have a government online one which we link our press releases to, so if they go up they could have a link there so we are quite... if the information gets out... pretty fast”.

#### **Key success factor #5 Internet training given and updated**

Computer training within the organisation currently appeared to be a bit ad hoc based on comments from the Webmaster. “They sort of tend to hand it (computer training) over to me but I mean generally that is the one area in the organisation ...that not for the want of pushing HR to take some responsibility....because going back to getting email and all that sort of thing it just happened, you had Netscape at your desk and just played with it and you played with email, and were left to it”.

Another comment later in the interview showed training was not a priority in the project. “DC (IS manager at the time) probably wanted to kind of get it pushed into the organisation and getting it actually there because the time you go through consulting everybody and training them it would just take too long”.

#### **Key success factor #6 Plan for dealing with site related communication**

The Webmaster made a couple of comments about the responses received from the Web site. “My feedback is a lot of reference queries now and I refer them onto Q because they are actually not part of what I...but it is good because at least it is an avenue for them to get their query into Organisation C C”.

Another comment was, "The feedback for Time Frames goes directly to Dave and I get the visitors' book in which I get comments and questions as well. There are some fields on the site that have emails to a particular person who looks after that page....but I tend to get a lot of questions about areas like genealogy and reference sort of questions!"

#### **Key success factor #7 Formal Internet policy**

Three different responses were received to the researcher's query about whether Organisation C C has an Internet policy. "The organisation is thinking right now about its Web policy and there will probably some coverage in there about how it is used as a communication tool."

A second response was, "There is an Internet use policy which is available online, that is the only place I have seen it, I haven't seen a paper copy".

The third reply was, "The organisation could do with ...something on email and Internet policy so that people are aware of it, where what they are using fits into the broader electronic scene... more proactive training and development, so they perhaps understand and that would help me with the development of what I am trying to do as well."

From the responses received it appears that there is limited awareness of the organisation's Internet policy and this depends on your role within the organisation.

#### **Key success factor #8 Consideration of site's marketing aspects**

One of the marketing aspects of the Web site is " Obviously the ... added access to Organisation C C's catalogue of what it actually holds in the organisation and that has taken about two years of.... I mean there has been a lot of pressure from outside the organisation to make that catalogue accessible because a lot of other organisations round the world are making their catalogues accessible".

Another drawback that the site will provide in future is "someone with their research reports from the policy and research section... they are tending to want the copy published in full text online because I mean they do all the work and probably create a quite simple format that is published. People want to buy it for quite a minimal charge, but the research manager is very keen to get research stuff online so that it is actually there available to people to use, because they do quite a lot of extensive research".

While the possibilities for placing a huge amount of information online were enticing, one interviewee was cautious. "I guess the organisation has got a huge range of target audiences and markets and things. For example schools and things like that, all those schools are a big client in Time Frames, not all schools are on the Internet, and some of them, say "we will never be able to afford it", there are all those sorts of things the organisation has to solve, and pass those responsibilities to those other groups as well".

### **Key success factor #11 Intranet in place**

The organisation concentrated on getting a Web page online first and are now developing their intranet. "We have an internal staff newsletter which you produce a hard copy every week and it also goes up onto the site, so if you are in the site you can whizz through the contents and just select the thing that you are interested in or whatever, so you can get round it quite quickly. Staff pages, so I suppose it is like the embryo of an intranet if you like. It is an area I guess that we will be building on in the next little while".

A comment about authorship was, "I think ... on the external pages it will have to go through a central point be that V or someone in corporate communication... I suppose there could be arguments that the areas of the intranet... with some guidelines for people to publish some things themselves".

### **Key success factor #17 Meeting customer demand**

Organisation C considers customer demand is met on the Web site by providing the content customers desire. "(Feedback from the site has been) quite positive. We ask people what they would like to see on the site". A related comment was "We are driven by customer orders, so while we are scanning and printing the images for them we are actually adding onto the database at the same time... making a collection available in another medium, available to more people".

Comments include, "Yeah, we have a few specific (comments) but often feedback is just "I'd like to have seen more photographs" or something. The collection is probably 80% photographs anyway". The Web site is a way of showcasing the collection so customers know what is available. "The collection is in the millions so it is basically the tip of the iceberg. It is like a sample of the collection and it is a way of saying this is what we hold and we are showing both nationally and internationally and people are getting to see what is there and actually, in a way it also spins off more business. People who say "I can see this and this, it is here but I want to find out about something else", so it is a start as well".

The Web site contents are a result of customer requests. "We are driven by customer orders, so while we are scanning and printing the images for them we are actually adding onto the database at the same time... making a collection available in another medium, available to more people".

### **Looking back**

The third and final cluster of questions were designed to get participants to evaluate the process of putting their organisation online. Areas explored were aspects they were pleased with and proud of, unhappy and dissatisfied with, their future plans, any remaining issues that required resolving, what they would do differently with the benefit of hindsight and the role of their ISP in the project. The success factors relevant to this phase of an organisation's Internet development are:

**Key success factor #9 Updating and refocusing of home page**

The Webmaster's plans for updating the site were about extending the medium's reach and adding content. "I mean I am just adding more information in different areas of the organisation and trying to work with business units to kind of think about the more interactive uses that could use the Web site. Maybe an online exhibition, or..."

There have been comments about Organisation C C's Web site. "We had one or two people who are feeding back on the structure of the site, the look and how it is delivered to their particular PC and some people are quite fussy something or that "this particular line here was like just below the page and I had to key down to get to it, and why did you put this in here?" Yeah, and you can take note of those comments and think "okay that is fair enough" but often you have got to, like when we delivered the system it was almost not to the lowest common denominator but a certain...most people have only got a certain size monitor, you can't deliver it to the latest monitor, because most people are not using that".

V the Webmaster says she is "just working trying to get more information and more coverage of the organisation's activities and services, that kind of thing...I'm probably now, going back to just evaluate the site, looking at what I can do to refresh it, maybe change it, that kind of thing". The site has different sections for schools, business or for government access. "So just trying to get these working more interactively and probably describing Organisation C's services and products more fully and getting better coverage".

**Key success factor #10 Positive relationship with ISP**

Organisation C are their own Internet Service Provider.

**Key success factor #15 Consideration of Web site on business effectiveness**

G the General Manager of Management Systems saw the big gains from the Web site as far as the organisation was concerned were the internal ones. "Usually that is more the in-house stuff, that's where the big project gains by getting rid of manuals and stuff. The government departments tend to be where they make gains. Intranets or whatever".

V said "I don't have any statistics on the way the Web site is affecting internal or external communications". She did however say that "when the site was first up there we were monitoring the number of hits and we were publishing information as well too".

D said "by putting these sort of services online we have to consider the business, the way you operate your business manually...you can't just replicate your business online that easily sometimes you have to modify the way you do business". He gave some examples of this. "We have found a few things like we had certain forms that had to be signed in person previously, we are still trying to replicate that and it is not easy". Sometimes you have to think well lets look at how we can alter that and what other legal requirements ...is this going to become legally binding?"

**Key success factor #18 Organisational culture responsive to change**

It did not appear from the responses received to the questions asked that any surveys of internal or external customers had been done. Comments relevant to this success factor focussed on the choices to be made between online and offline delivery of information. "The focus is on the electronic delivery, but there is still the option provided for people to access it through hard copy and I think that is true and that is reflected in the management work that is going on in the organisation".

"In the last little while, the design elements for a lot of our publications have become a lot more simple and a lot more lower key and we are achieving economies I guess in our print production because we are able to put information up electronically as well, but I guess the organisation has got a huge range of target audiences and markets and things".

**11.6 Summary**

Organisation C had strong support from upper management, had a positive project champion and successful relationship with their ISP. In contrast, very little attention was given to any Internet training within the organisation which is rather surprising given the systematic nature of the organisation. No comments relating to a secure server, factor twelve, were made although they are their own ISP. While the organisation had a strong team-based development, the process was fairly rapid with little consultation with either internal or external users. Very little in the way of monitoring the usage or success of the Web site had been done, resulting in minimal reflection on the Web site's effectiveness or impact on Organisation C.

## **12 Organisation D case study**

### **12.1 Introduction**

This chapter will look at the use of Internet within the government administration and defence sector (M). Organisation D forms the focus of the fourth case study.

This chapter follows a similar format to the preceding ones. It looks at the background to the Organisation D case study and outlines the method employed for investigating the case. The results and discussion sections are next with the summary drawn from the case concluding the chapter.

### **12.2 Background**

Organisation D is a government agency. It has links to other government agencies and several government departments. The current site is innovative and is primarily an information resource site.

Planning for the Web site started in 1997 and took about 12 months. The Web site is largely the work of the Communications Manager with support from internal staff. One aim of the site was to gain a stronger presence and an international presence. The process involved changing their database and tidying up existing records. The Web site was part of Organisation D's business plan and the project was well resourced.

Content and site structure was carefully planned and largely done in-house. Design was outsourced and several changes have been made to the site since the initial launch. Quite a lot of feedback is sought and greater interactivity has been added to the site. International collaborators are finding the site extremely useful.

### **12.3 Survey implementation**

The method used has been described in the methodology chapter with the particular approach to Organisation D described here.

Organisation D was contacted through personal association. Contact was SJ (Communications Manager) and an interview arranged for 6 March 1998. During the course of the day session the researcher was introduced to key members of the organisation.

All those spoken to responded openly to questions about Organisation D, the Web site, marketing and communication issues. Follow-up questions were done by phone and email to those initially interviewed.

## **12.4 Results**

This section will detail the results under three headings: getting online; human issues and communication aspects; and looking back. As these headings and the success factors grouped within each have been outlined in previous cases, we will proceed to the results.

## **12.5 Discussion**

This section will analyse interview material from the results section under the success factor headings.

### **Getting online**

The first cluster of questions forming the case study examined motivations for getting an Internet presence, planning, designing and launching the site.

#### **Key success factor #1 Plan for the organisation's Web site**

S (Communications manager) has been the main motivator behind the Web site. "I guess I started it, with something like, "We need a stronger presence and an international presence". I mean the way I work, if I am trying to locate information the first thing I do is look through the Web site. We are a one-off organisation in NZ, there is no other body that is like us, so when we talk about collaborative work the logical people to collaborate with are with our international counterparts. Well we can't do that easily unless we have that (Web site)...so, I just sort of badgered everyone really!"

S outlined the process of developing the Web site. "It was a year's hard work, we scrapped the old database, pulled some of the records over, put them into a new database and it was a massive tidy-up job. The first thing we had to do was look at the resources we had and make sure they were hosted on the NZ national network, which they weren't. Like 25% of them, so since all our material and a lot of this material is unique to NZ...it is small but it is heavily focussed in one area, no-one knew we had this stuff, since then of course (that) led to more work because more people were coming to us for information. Once that was done and that really was only completed about six months ago (or before that was done actually) I started saying "We need the Web site for this reason and that reason".

The Web site was included in the business plan. "Probably about a year ago (we started), so the way I did it, or I decided to do it is it needed to go in my business plan and my business plan of course was approved and that just gives you the freedom to go for it. So I wrote it into my business plan for the 1997/1998 year".

The project was well resourced. "My budget went up by \$50,000 anyway (they keep giving me money!), I didn't even have to ask for it. Organisation D is funded by a tax on alcohol and it is a small staff and we have \$6.5m to spend so to a certain extent people tend to manage projects and there is an expectation that those projects will cost

quite a lot. So, as soon as the money was there I started looking, word of mouth for people and checking out the existing work they had done”.

S set up a project team for the Web site. “What I did here (what I thought was really central), was we set up a small group, we have regular monthly meetings called PCG which is Project Coordinating Group or something. We all come together and we have things on the agenda and we discuss things that are issues for any of us. We set up a subgroup in that we have the regional manager here and (someone) from the Maori Unit, both have an interest in technology so that was a nice coverage. I opened it to anyone who was really interested, but I wanted a small group and wanted to control the project. (I am speaking more bluntly here than I would to other staff!).”

Helpful advice was sought from others as well. “I do a lot of networking and informal networking with people which I find works really well, got hold of Shane Middlemass from NZ Government Online and he gave me the spreadsheet model to use which was great. I sort of adapted it for our use and we worked through it (this group of three of us) and put together a project phase one to three project, they agreed on it and I guess I went to it. And after that, their roles changed.”

After the project team was settled in-house, S turned her attention to Web sites. “I talked to people, looked round, looked at sites that I liked and found out who did them, had a browse of what was happening. It seemed to me (at that time in particular or it may still be like this) there is an enormous variation in costs for sites. I mean like you have got Saatchi & Saatchi doing them and you know, charging a couple of hundred thousand or something, we had the content, we had amazing graphics we could use. The stuff was there, I mean there is a few licensing problems, but they were small, so we didn’t need someone to come up with a lot of design stuff for us but we needed to have someone who would understand what we wanted to do.”

Organisation D had a lot of the content and graphics required already. S was keen to have costings done for several phases of the Web site development. “We looked at what we wanted up initially then how we would grow it into the next few phases and this is what I gave the Web designers when they were quoting. Otherwise I mean we have a lot of content which is great, we have really strong content...how could they quote on this amorphous Web site thing? We have to define it, we have to have boundaries and they needed to know what the resources are and I could actually give them quite a lot of the content which they could take away and see”.

Some initial thoughts on the site content were, “We really thought what can we do...youth focus, drinking guidelines... well wouldn't it be cool, we could actually offer online advice...and this is our standard drinks thing and we need to be able to explain what this is, we need to be able to do that, we need to have a message...and then they (Web site designers) build that into something that can take all those components.”

Current thoughts about Web site content are, “We don’t put anything up there that isn’t interactive unless the information is available in just a flat straight format so anyone can look at it. So the drinking guidelines are fun but you need to download Shockwave, I mean you need to have the plug ins for the interactivity, so all the information is available in that section and it is obvious where you can go for it if you are not comfortable with using the Internet. The youth game... we can’t do that but is not a factual thing, it is a consequences thing, it is a game so all the factual information is there for the young people.”

### **Key success factor #2 Development of an integrated Internet package**

A number of comments made in the interviews were about ways existing content could be used on Organisation D’s Web site. “All our clients' reports can be downloaded now, all those sorts of stuff they manage and then we check it on a trial site on their Web site and so we can check it on ours as well before it goes live and it is like, "that is fine put it up"..."

A related comment was about the research and new findings. “One of the things that went up after everything else was a research section...that involved design and designing it, utilising you know the colours and the patterns we'd already set up...and doing various other things, scanning in the stuff down the sides”.

Another example of integration was in terms of marketing the site. “Organisation D is running a big ad campaign now- we can piggyback on that.”

### **Key success factor #4 Support from top management**

S spoke about the council. “Organisation D has a council of five members who oversee, to make decisions um, large amounts of money being spent on that sort of thing, so things go to council, and they had a very hands-off approach to the Web site. They are all technophobes- who know nothing about it- who saw the bottom line figures without appreciating what it was about. Money can be difficult... You know strictly speaking it shouldn’t have even been, council should have been informed and not given any decision making authority over this at all... But once it was mentioned that was not on the agenda by someone, I really don’t know. They said no. Hours and hours of work, hours of work going to the vendors, getting quotes... they hired consultants to evaluate them, they got.... went back to get the proposals all done so it was exactly what we want, ended with something which was what we wanted to go for.”

Another comment revealed that the Web site process was rather different from other matters that Organisation D’s council deal with. “Well it was interesting I think because it was such a new thing no-one really quite conceived we'd need approval because it wasn’t a publication thing so Mike went and just scribbled a note to council. And it went through officially so that it wasn’t so much an attempt to move the approval. But the fact that they were keen, they were keen, by then of course they had realised it was like “well where is ours? Hey who else has got one?” We don’t really

have the typical structure of underpinning the organisation that we require, we have to have it under the guidelines”.

Management support for the Web site “has been good, that and the fact that we can grow it quite quickly given that we have a really small organisation, you know the commitment there, the enthusiasm is there, staff are on board now, the CEO is now really pleased about it.”

Top management (Ministry of Health) were not directly involved with the project and not seen as having a positive influence. “He was having a bit of a thing about it abusing every good thing for a while there, he was an Associate Minister of Health...People were so relieved when he left because he would swear at his staff, anyway... No (so we didn’t have a launch)”.

### **Key success factor #12 Secure server**

The site has not been designed to deal with money and it is most unlikely that it will ever do so. Security of data is the main concern and the comments about site security reflect this. “We are going to get all that data and put it in a new database which will be hosted at Netlink which gives us a measure of security as well, which is quite good, being the Internet Service Providers”.

The treatment directory is an example of part of the site that is not open access to all visitors. “Another thing we might do is put a treatment directory up, we will probably password that because only people, only organisations involved in treatment are going to want to know.”

### **Key success factor #13 Importance of a project champion**

S talked about her role as project champion. “I guess I started it (Web site), with something like, “We need a stronger presence and an international presence”. I mean the way I work, if I am trying to locate information the first thing I do is look through Web sites. We are a one-off organisation in NZ, there is no other body that is like us, so when we talk about collaborative work the logical people to collaborate with are with our international counterparts. Well we can’t do that easily unless we have that (Web site)...so, I just sort of badgered everyone really!”

S has met some opposition along gender lines and explained how she dealt with it. “There is still a few guys that have not been happy in the way of a female in a worldly kind of thing, I don’t mind saying “do you know what this is? Tell me”, I don’t have a problem with that because I don’t. What they don’t realise is that I will also ask someone else. There is ways around it, if you don’t know, you find out. And I just have a few people now that I trust their opinions on. So you can do it, it is not always easy, I feel like I need more technical skills on one level and on another level I feel like I just need to utilise the information skills and communication skills to find out and get a reasonably good overview, sometimes I feel like I am just keeping ahead you know, by the skin of my teeth really. But I figured if I really got to the point where I

knew everything, in five minutes it would be behind anyway. I would never have time to deal with it, because it is not my area, I don't have time to do it."

A further comment illustrated her desire to become more fully involved and the need to step back from that and manage the project. "I like to use things like Front Page where it is pretty. I have done an html course and yet it doesn't look that difficult? But why!, you know I am managing it and I don't want to do it... I want someone else to do it!"

#### **Key success factor #14 Being aware of the competition**

S had been aware of a range of relevant Web sites for some time prior to designing organisation D's one. "A huge variety (of things were put up by other people doing alcohol sites overseas) ...not much of the interactive yet, that will be changing. (Their) front pages were too busy... and there is this thing about using a logo and branding...I mean we don't always use our total logo... but we always use it in some form and in fact every (time) we have a series or something like mini home pages for different things- all of those we have a logo thing".

An important aspect of the Web sites was to consider not only the competition but those Organisation D could collaborate with. "There is an international site that did all that for them, and I thought that would be good and putting in New Zealand's limits as well, but then when I went and checked it out it didn't seem too accurate, so there is not going to be any links through to anything, unless we're certain that the information is really valid."

A New Zealand organisation with some similarities to organisation D has been watched in terms of their Web presence. "There has been talk of organisation M and they are not thinking outside it and are too bound to the rules and regulations still".

#### **Key success factor #16 Use of outside expertise**

S outlined the process of getting a Web site design company. "Selwyn Ferry at SFX Designers was recommended to me by someone who was managing the technology dept at Internal Affairs ... he said Selwyn was really good and I respected his opinion. I was going to ring or get someone to contact me...before I even got round to it, he came up and the thing that I was really impressed about ...he is an architect and he has done a lot of other things as well, when he talked about the Web and the Web site he did not see it as a one dimensional way, he talked about it as like a three dimensional object and he talked about moving through rooms and spaces and I just thought that was brilliant and no-one else had described it in that sense".

"We looked at what we wanted up initially then how we would grow it into the next few phases and this is what I gave the Web designers when they were quoting. Otherwise I mean we have a lot of content which is great, we have really strong content...how could they quote on this amorphous Web site thing? We have to define it, we have to have boundaries and they needed to know what the resources are and I

could actually give them quite a lot of the content which they could take away and see”.

The design and layout of the site is innovative. “He had a really good handle on that navigational thing, how you lead people through. How you take them to where you want them to go and make it like this, how you step up the paths to the connections... and there are some great young designers working for him. They wanted to do an interactive site and were prepared to give us a lot of free time on it. And actually they quoted us for 20 hours thinking it would take about 4 to them, but they ended up spending about 200 hours on it to get it right”.

The site “cost us \$30,000 to get the site up completely but...for the amount of ideas they had with creative input I mean they were paid by the hour not really by the ideas the way you would have had they been an ad agency.”

The Web site process was very much one of collaboration and working together. “We had the good content, we had amazing graphics that we could already use. We do a lot of advertising. The stuff was there... there were a few licensing problems but they were small, so we didn't need someone to come up with a lot of design stuff for us but we needed to have someone who understood what we wanted to do”.

As previously mentioned, S was keen to learn as much as possible about the process. “I haven't sorted out the dynamics of it! I mean it is not that difficult, I just ask, it is okay, I know we have got it set up already but we need to make it and then test it, and test it and test it, make sure it is okay and then I will just say, “okay so how do I manage it from here?” I don't worry about how do I manage it and learning how to do it. I just say, I used the Web designer to get a lot of this sort of stuff and its like I want to do this, want to do this, how easy is that? Can we do it from here? They know our set up”.

The working relationship between the Web site designers and organisation D has been a very positive one. “To be honest I had fairly clear ideas about that (the Web site content) anyway. What I really appreciated about them (apart from that they are just over the road, which is really handy), they do have a really good hands-on approach with us, and so I just wander down and have a look and see how their design ideas are going along, or what is happening. I think we have got a really good rapport now and we are working well, and I met someone the other day and he is like "this spreadsheet was great it made us conceptualise what you were doing" and they are fine about us doing all that, mainly they work for me, and that I think makes it easier.”

Comments about the next phase of the process follow. “I am really pleased with how it has gone, I am pleased that we are entering into a stronger relationship with the designers, that has worked well, but I mean you only see the initial phase, I mean all the database stuff has yet to go up and that is sort of more complex work. We will meet regularly because we actually work really well in the interchange of ideas.”

Other people have provided assistance with the Web site. "I do a lot of networking and informal networking with people which I find works really well, got hold of Shane Middlemass from NZ Government Online and he gave me the spreadsheet model to use which was great. I sort of adapted it for our use".

The accountant has not been so good to work with. "So I rang our accountants rather and ... he hasn't... but it is very interesting he is a bit of a ...yeah we don't get on,"it is not that we don't get on, he is just sort of like, he rings up when he sees me on TV and has a piece of compliment like jabbing you know, it doesn't work with me, it does not work at all, I don't care I just want the answer, so I wasted him totally".

Another comment that illustrates the importance of compatible personalities as well as expertise is, "Some of the vendors I find them a pain in the neck, because some of them I just straight don't like and wouldn't want to work with because of that reason. We didn't need someone to come up with a lot of design stuff for us but we needed to have someone who understood what we wanted to do. I always like to work with people who seek to understand our business otherwise it is very difficult and a lot of people are not good at that. Surprisingly enough, they are good at what they do but (our) small organisation, a small staff, a staff with very strong personalities and styles and talents to be honest...."

S felt that the organisation was not at a disadvantage with outsourcing their Web site. "The benefits of not having IT staff here sometimes... "

### **Key success factor #19 Electronic commerce**

The aim of the Web site has always been to provide information and collaboration opportunities. There is no intention to make sales from the site.

### **Human issues and communication aspects**

The second cluster of questions examined aspects relating to the internal and external communication for the organisation, training, Internet and electronic mail policy and related issues. Aspects of customer reaction and support issues are covered in this section also.

### **Key success factor #3 Site part of overall communications strategy**

The primary focus of the site is to provide information to all interested parties. "We are setting up like an information services focus so that will have our database on it because it is unique and now we have done a real public face which will continue to grow. We want to also have stuff from researchers and policy people and things like that as well. Ministers and so on, that is in a way that is phase two, almost phase three really. As part of that what with the database you have a mailing list because it seems to me that information, the information person's prime thing is delivering information in a timely manner and the best way of doing that is to select information and deliver to the desktop, you won't even need to know that a report has been published today... they can get the summary when they check their email."

Another key aspect is the organisation D "family". "That whole thing is bringing communities together to see what is happening, which to a certain extent Organisation D does anyway, because it has really good links with people but I mean there is no way it starts to keep tabs on what is happening everywhere, it is just not possible, and this (Web site) has a potential to facilitate that kind of communication to know what is going on."

Organisation D already send out a lot of information. They see the Web site as increasing rather than reducing the demand. "In the course of one financial year we sent out close to 126,000 bits of information like posters (and fact packs)...I'd expect for the next two years our workload will almost double. You have got a higher awareness I think partially, but you ...have still got people more comfortable with the printed form. I think where we will win...when schools get connected, there is about 35% of NZ or something I was reading the other day. They are the ones that request one offs of this kind of fact pack information and that is the really time consuming thing".

Work is still continuing on the site in terms of the appropriate image. "That (appropriate words, music, graphics) is really important- it is wrong, it is wrong, it is hideous! Jennifer and I worked together a lot on that. Youth section was her output, um, we um, worked really hard on that and getting things right as close as we could. We have opened for comments from the young people so we can adapt it anytime and that is something we want to do, we want to grow it, we want them to take more ownership of it".

One of the benefits of the site is being able to get material online fast. "You can update the information as it comes in, I mean it is going to be great because for it to trickle in (which is what it does), like the Ministry of Health publish statistics that are two years old, you don't need it really. They (public) write letters, we have forms as well...there are some standard things they ring about."

The database is a key part of the communication function of the Web site. "As part of the database you have a mailing list because it seems to me that the information person's prime thing is delivering information in a timely manner and the best way of doing that is to select information and deliver to the desktop, you won't even need to know that a report has been published today... they can get the summary when they check their email. Well I just have a mailing list and they can subscribe to it, so it is an international focus in getting anyone. I get the Web address scanned into everything now, so that even when we do reprints I make sure it is on there..."

Some comparison was made with other forms of communication. "I mean the cost of this is tiny compared to the cost of the phone calls and things, but the biggest issue with staff is to get them to check their emails regularly and that is partly an issue because we have one PC to check from. So we have set it up and we are getting another two laptops. We had it already go early in the politics, appraisals and all sorts of things".

**Key success factor #5 Internet training given and updated**

The need for training courses for organisation D's staff was seen and acted on. "It was a struggle...getting too far ahead of the field, and as I said they (Organisation D council/management) are not very adept at using this kind of thing, but it is okay we run training courses, we have a few people from different organisations and different regions, they are going back out there..."

Another comment relating to the outsider trainer used by organisation D is, "Luckily I just go and I have got a good trainer and works well that she is happy to do the history and the PowerPoint so I set all that up and she is also a librarian but she is a trainer so she understands a lot of those issues like database and quality of information sometimes a trainer maybe you don't, I don't know it is something that I am very aware of, yes, that sort of thing. We would just hire a room with computers and stuff like that and sort it all out".

In-house training by S was given to staff. "It is nice to have a site up and do all the training there but no, I teach them about search engines and searching, quality issues and that kind of thing. So we tailor make the courses, we have a series of questions, very hands-on, and they have to give back the currency exchanges and find out the temperature in LA today, and then we go over them at the end and people find out they have all got different answers, and say "oh hang on how come you have got that?", and then it is a brilliant way for people to discover credibility of sources, there are many issues about updating the information. So we take them to some enormous sites and get them involved in it, and show them around a search engine called Inference which is a great thing, and useful tool to use... that is the sort of thing that I have been doing with those groups. That seems to be working quite well, and we need a more skilled workforce, a more technologically adept workforce as well."

**Key success factor #6 Plan for dealing with site related communication**

Surprise was expressed about the lack of responses to the Web site. "I thought I would get more (responses to the site)...probably in the last couple of months only about maybe 30?"

S has given thought to who should answer the enquiries from the site. "I don't like the idea of dealing with it (enquiries coming to the site), what I really wanted was for Organisation D to set itself up as a network and for people taking on that responsibility for the individual areas .... There is only one PC that people are able to pick their mail up on...That is another story, which has driven me to despair at times, um so until that time I have set up a central mailbox and everything will come through to me and that way there I can fire it off. Northern and Southern (regions) will also pick up their own mail and they are managing that. They have desktop access to that".

**Key success factor #7 Formal Internet policy**

As noted under success factor #12, information security is very important to Organisation D. "Before the Web site came along we had all the Internet policies and communications stuff about appropriate usage on it"

Currently the organisation has few computers and “at the moment it is not really an issue because there is only one PC here for staff... have terrible access, Auckland and Christchurch have excellent access we have guidelines but again we use some stuff and trust them. I don't think it is an issue um, at all. The cost would be minimal to the organisation, I feel it is a learning experience being able to utilise it”.

A related aspect is Web site authorship. “Everything should, I am trying to set it up, I am writing a document at the moment (just a Web management thing), where content has always got to have gone through the approval process. I haven't put it up for staff yet, I am still working on it”.

### **Key success factor #8 Consideration of site's marketing aspects**

One of the important aspects of the Web site and marketing it has been the use of branding. “The other thing we had was quite strong branding already which is great... we (have) just recently re-designed the research monograph series... so that we would have a series which is the best thing. So that was excellent. Um, and a very strong burgundy and purple and green colour for that, and we have got the green strip which is depending on some of those the Pacific Island reports we strip in the Pacific Island design down the side so it gives us some lee-way to brand sets within that, so we could use that for that section.”

“There is this thing about using a logo and branding... I mean we don't always use our total logo... but we always use it in some form and in fact every (time) we have a series or something like mini home pages for different things- all of those we have a logo thing.”

Launching the Web site has been a major marketing activity for organisation D. “So that (concept) had been the starting point for anything, and then you build the campaign then all the ads and everything were trialled looking at focus groups, da da dah, that was before that went live.”

Press releases were carefully timed and targeted. “We left it for about five weeks before we sent out the second press release, Jennifer got the press releases together and I checked them through, and made the changes and checked with P who is happy to be quoted in our words. And that sort of thing”.

Media coverage was “actually, to be honest (I'm most proud of), I thought we had a good solid site... to have such a response back for it to be so well marketed, through the newspapers, through all sorts of things, I mean that has been brilliant... The Sunday Star Times made a really big feature article”.

“I mean all we did was send out press releases. We just got the timing right with the, well there was several things in our favour, the Christmas thing was always in our favour, and there being so much on abuse drinking and for the youth game, I mean we sent out the press releases and saying that the health curriculum...”

Television coverage of the site reflected well on organisation D. "I can show you some (media coverage), we had both (publishing of feature materials Organisation D provided and interviews), it is quite nice when they pick up on the press releases but um, I mean the day the press release was out TV1 was in here by midday, we had lots of features, Radio NZ had rang up the news so it was on the news throughout the day and then Checkpoint interview at 5.30, and I noticed something happened, and I have kept a record of stuff because I want to use it". It is being used for further publicity overseas. "I hope that if I am going to go to this conference in Wales I would do the interactive thing, so I have got the TV news clips and everything and then this was straight from the news grabbers that goes overseas".

### **Key success factor #11 Intranet in place**

As yet organisation D do not have an intranet.

### **Key success factor #17 Meeting customer demand**

Organisation D have provided material for a range of parties for some time. They are now attempting to assess what impact the Web site will have. "Organisation D is trying to provide all sorts of things for schools...Economics Bursary- they use this all the time...We are now getting people who are studying English who are using alcohol as a topic to generate discussion...there is a new health curriculum coming out. We need to find ways that the medium really works, now one of the ways that the medium works is with this fact pack thing cos it works for us and it works for them, to use the information it works with interactive drug and guidelines".

Using Web site data has enabled them to see when the site has most use. "Most of it is coming from home, that is the thing... given the time things that I am assuming if it is Tuesday night between 7pm and 8pm, most people are home then."

Work is being done on changing the youth section of the site. "That (appropriate words, music, graphics) is really important- it is wrong, it is wrong, it is hideous! Jennifer and I worked together a lot on that. Youth section was her output, um, we um, worked really hard on that and getting things right as close as we could. We have opened for comments from the young people so we can adapt it anytime and that is something we want to do, we want to grow it, we want them to take more ownership of it".

Consideration is being given to what is important and useful to include. "Well, like making sure it is actually sensible stuff and again there is that whole "why do you put it up there?", which is not just if you have done it! It has to be added value, that and at the moment just because it is still a very small site things are kind of grouped under outputs which we have various responsibilities for". "I mean the potential is there but we will grow it, depending on the comments we get back from the people".

### **Looking back**

The third and final cluster of questions were designed to get participants to evaluate the process of putting their organisation online. Areas explored were aspects they

were pleased with and proud of, unhappy and dissatisfied with, their future plans, any remaining issues that required resolving, what they would do differently with the benefit of hindsight and the role of their ISP in the project.

### **Key success factor #9 Updating and refocusing of home page**

One of the main challenges Organisation D had with the Web site at the time interviews were taking place was that of Web authoring. S was trying to write a policy. "Everything should, I am trying to set it up, I am writing a document at the moment (just a Web management thing), where content has always got to have gone through the approval process. But now that they have done that I am a bit worried because I like adding content without going through an approval process! Because I know how fussy I am anyway. It is like, "do you mind if we rewrite a little bit, it gives me some leeway", I haven't put it up for staff yet, I am still working on it".

S says, "I liaise with staff you know we work on the content and sign off together I make sure they sign off and they are happy with their individual areas. You know that is really important, they need to feel a sense of ownership for theirs and also to be aware that they are going to be responsible for content even though I am going to be responsible for managing the Web, and the Web designers and things. Then I was away at Perth at a conference for the Web and um, a few things hadn't been signed off and in the meanwhile so it is quite a tight timeframe when you are working with a group that is running you, know a business like that. I discovered that people were running down and making some changes (without her consent) or they had given them more content but the content wasn't well edited so it is like "there are mistakes in this document!" That is the thing that you just do not want ANY mistakes in ANY of the material that goes up! We then ended up with our designers doing editing work which is not appropriate, it makes us look really shabby too which I don't like".

The site was unlikely ever to be considered finished. "I don't think it (Web site) will ever be done, oh the other thing I am getting a scoping report for is putting a search engine on the site because then it is going to have grown enough that we need one. It sets up Organisation D in very much the leading edge in this area. We have to re-arrange heaps as it (site) has grown. My plans for the next six months are sort of in my head at the moment, but that is all right. Any updating changes, I add more links, I like to keep it updated, we update all the current events things and sometimes I think we should get another link here, I think we should do this and I think we should put an email address here as well. Or any suggestions that come through if we can take them on board, so we have Microsoft's Front Page loaded on there, we had our Web site loaded on there and we make incremental changes frequently".

The site will keep changing. "We are quite happy to change it, I mean it is obviously it has got to keep changing and growing". And "I mean the potential is there but we will grow it, depending on the comments we get back from the people".

Some examples of the way the site will change are, "The "Contact Us", "Say When", newsletter and ... which is interesting so I think I will pull that out of the main page

and pop it in somewhere where it is not so prominent, and perhaps it is still there, we may end up scrapping it, we will see. So that is giving us that kind of indication, yeah it seems to be well used, about 90% of hits come from New Zealand um, a reasonable number from overseas as well”.

Other site developments will be related to the site design and layout. “Well, like making sure it is actually sensible stuff and again there is that whole "why do you put it up there?", which is not just if you have done it! It has to be added value, that and at the moment just because it is still a very small site things are kind of grouped under outputs which we have various responsibilities for. I will probably change that in the arrangement once I get more.... just is the fact that I ultimately don't know how I'll alter things, it should really only have seven things in the home page, we have got about eight now. And I need to fold some areas in together but it is a whole thing, I want to shake it all up and move it around and relook at navigation and re-evaluate it and that will be interesting”.

#### **Key success factor #10 Positive relationship with ISP**

Thought was given to changing organisation D's ISP. “It was okay but having said that um, someone said they were an inordinate amount of time trying to download the site and even on our... we have got one really slow PC and one crappy virtual image, some respects like... said I don't know, means I can always see what the rest of the world scenario is. You know that takes three to four minutes maximum to download and judge things but it is not widely long you know. So I am thinking um can Netlink handle high usage as we are on media coverage so I rang our accountants”.

“We won't have (been able to do that) with the system we have now through Netlink, we were using an IBM initially before we put it up, we didn't want them to host our Web site so we have moved over to a different ISP”.

#### **Key success factor #15 Consideration of Web site on business effectiveness**

Putting the URL on all printed publications is one of the ways people are made aware of the Web site. “I get the Web address scanned into everything now, so that even when we do reprints I make sure it is on there... This one (publication) we are redesigning it is down there but I will blow that up really big”.

Visitors to the Web site have been tracked by access time. “The bulk of our traffic is home users between 7-8pm on a Tuesday night and after that it is a Thursday night between 8-9pm and so it is home users... This is over a couple of months so it is quite a trend, but yeah, it is not work hours and then the third highest category is the times between 4-5pm”.

Organisation D is aware of the parts of the Web site that get most hits. “A lot of people are using the youth section. The youth section, research section and the factual stuff is really well used.”

The number of queries resulting from the Web site has been low. "I think not many people ask for information, I am kind of hoping it is because they are getting it on there (Web site)."

The Web site has proved valuable for collaborating with other related organisations overseas. "We get a lot of people doing different projects but they are not actually that aware of what is going on, and also it is partly that thing you know you compete locally and collaborate internationally. That whole thing is bringing communities together to see what is happening, which to a certain extent Organisation D does anyway, because it has really good links with people but I mean there is no way it starts to keep tabs on what is happening everywhere, it is just not possible, and this (Web site) has a potential to facilitate that kind of communication to know what is going on. And you know, Australia, you know are very close there is no real way there couldn't be more joint research projects. So that is that issue. We will have that with the information services database up, roughly around the same time and the mailing lists. So this is kind of like more of a professional focus now".

The speed of response is important. "I mean that is where the medium works, it's in being able to use it like a organisation database. At the moment it is a real pain because I have to download it onto floppy copy and send to Auckland and Christchurch, (it is kind of too chunky to send it via Internet). I sent some files over the Internet you know they were a little bit corrupted sometimes and all those kind of files. Oh, it is really time consuming, when once it is up that even means our Auckland and Southern office you know they can use it, and can update it straight away, otherwise they have always been two or three weeks behind, (two or three months to be realistic), and then you know they have difficulty sometimes as the regional security manager, one of the regional secretaries is not as adept at zipping and unzipping and uploading files".

S considers that staff need further training. "That seems to be working quite well, and it is we need a more skilled workforce, a more technologically adept workforce as well".

### **Key success factor #18 Organisational culture responsive to change**

The Web site is already changing relations in the organisation. "When I arrived here, it (the job) had been one of the traditional things of 17 years done by a librarian. So initially I guess probably before I even thought about anything (to do with the Web site), I had things at the back of my mind. But it was a year's hard work, we scrapped the old database, pulled some of the records over, put them into a new database and it was a massive tidy-up job. The first thing we had to do was look at the resources we had and make sure they were hosted on the NZ national network, which they weren't. Like 25% of them, so since all our material and a lot of this material is unique to NZ...it is small but it is heavily focussed in one area, no-one knew we had this stuff, since then of course (that) led to more work because more people were coming to us for information. Once that was done and that really was only completed about six

months ago (or before that was done actually) I started saying "We need the Web site for this reason and that reason".

"We are a one-off organisation in NZ, there is no other body that is like us, so when we talk about collaborative work the logical people to collaborate with are with our international counterparts. Well we can't do that easily unless we have that (Web site), there is also the cost of sending material out, I mean you still need to do that but it is going to take over and it is just a waste of time, there is no other way round it".

Other developments will mean more work and greater staff involvement. "Once the research is done it will be easier to see what we need to happen and it (Web site) will become involved in putting research out there and making it available. Possibly developing the guidelines and now I mean you can't make organisations change but when you can act in the role of, giving the information and advice and ... trying to make things happen. I am not too sure what will come out of it at this stage, I know that we will then be looking at putting information, hopefully it will have some guidelines. The other major project that will be going on will be and this is where I am linking other people's projects...."

Other information on site will mean the site will grow and change the nature of communication for organisation D's staff. "(It is an) ideal medium where they can put information in and it can... these forms can try and draw other people to maybe think about things. And then some kind of response back, because you can get a immediate response back you have got the privacy medium, you don't even have to make a change you only have to go and see someone, you can just have a look, so it is an idea, I am hoping we'll have a component in there, it means completely changing the Web site, I mean there is going to be issues cos it will grow and it will grow rapidly and it is growing in different areas".

## **12.6 Summary**

Organisation D had very positive comments related to the various success factors. Care and attention was paid to all parts of the project development including integration with existing parts of the organisation. Mechanisms for measuring the effectiveness of the site were in place with site updating and refocussing having a high priority. While Organisation D's council members could have had a disruptive and restrictive effect on the Web site initiative, the CEO was supportive and there was a very influential project champion. Consideration of the site's marketing aspects and incorporating the Web site into the overall communications strategy were particular strengths of this case study.

## **13 Organisation E case study**

### **13.1 Introduction**

This chapter will look at the use of Internet within the Government Administration and Defence sector (M). Organisation E forms the focus of the fifth case study.

This chapter follows a similar format to the preceding ones. It looks at the background to the Organisation E case study and outlines the method employed for investigating the case. The results and discussion sections are next with the summary drawn from the case concluding the chapter.

### **13.2 Background**

Organisation E has approximately 350 employees and is the Government's lead adviser on economic and financial policy. The organisation's work is aimed at helping governments achieve higher living standards for New Zealanders by managing the public purse and advising on how governments can get the best quality and value out of public spending. The current site is information based.

Design and development was begun in December 1994 with all work in-house. A combination of push and pull factors drove the site with a strong motivating factor being the desire to get particular information out to a wide audience as quickly as possible so it reached them all at the same time. The Web site was implemented in June 1995. As one of the earliest Government related Web sites, they received a lot of attention and were praised for their content driven site. Strong decisions were made about the direction organisation E would not take with their site. This involved moving away from becoming an umbrella site with links to other financial groups and resources.

The organisation does not feel they faced pressure from competitors and saw their role as trying to do their best in terms of relationships with public and clients. They were aware of what other departments were doing and were progressing with an intranet for the organisation.

### **13.3 Survey implementation**

The method used has been described in the methodology chapter with the particular approach to Organisation E described here.

Initial attempts to contact Organisation E were made after examining their Web site. Contact was made with RC and BM and a phone interview was arranged for Monday 26 January 1998.

Both interviewees were reasonably open in response to questions about Organisation E and their Web site. Follow-up questions were done by phone and email to those initially interviewed.

### **13.4 Results**

This section will cluster the results under three headings examining the process of gaining an online presence: getting online; human issues and communication aspects; and looking back. These are grouped under the relevant nineteen success factors.

### **13.5 Discussion**

This section will analyse interview material from the results section under the success factor headings.

#### **Getting online**

The first cluster of questions examines motivations for getting an Internet presence, planning, designing and launching the site.

#### **Key success factor #1 Plan for the organisation's Web site**

The initial motivation for Organisation E getting an online presence was “a Web page of our own”. This was expanded on with “a combination of both (push and pull factors) drove it (Web site). A document at a particular point in time to as wide an audience as possible...not sort of dumping out zillions of paper copies of information at the same time...All of them need to get the same document at exactly the same time, it was an absolute equity thing”.

The model for the Web site was “DIY” and this has been very successful for Organisation E. “It is an evolving thing, it has been added to a lot... but the structure hasn't changed significantly, although there has been a couple of new versions of the structure. I guess we are at the point now where we are revisiting that in a major way... We had an incredibly basic early structure and that got us a lot of kudos because apparently we were one of the sites that actually rejected images and frames and all that fancy stuff and went straight for the content. We actually got reasonably good appreciation for the fact that we were so content driven”.

The planning is ongoing with the current plan being outlined. “What we have been doing is getting ready to write a paper to promote a wider roll-out of the Internet within Organisation E, so we have been doing a fact finding mission on the people that have been using it for six months and after a series of questions about their use and then looking at what they have said and then how we should possibly roll out or even if we should... but it is a business case from now, we have got some empirical data”.

Future planning for the site has included making a decision about what direction the site is not going in. “That is a situation where we would become an umbrella site for a certain subject, we have thought about that but we have decided that other people are doing that better. You don't really want to get into being a proper umbrella site unless

you are prepared to put the time into it and you have got something special to offer and we don't really think we have got anything really different to offer in that regard. There is already a much better list of economics resources than we could ever create. So the links that are up there are really for our people who are going out to the Internet rather than for visitors to the site".

**Key success factor #2 Development of an integrated Internet package**

Members of Organisation E "see that it (Web site) is an ongoing part of our operations, pretty central to our marketing strategy I guess, so it is a kind of resource that we need to have".

**Key success factor #4 Support from top management**

When asked about the planning and management behind the organisation's Web site, the response was, "We now have a different management structure working with the Internet. We used to just have one person and the Desktop Publishing Unit in together working on it and we now have what we call an Internet Steering Committee which has representatives on it from Information Management, Systems Support and the Communications section (that is our PR people), so that Steering Committee now works with the Desktop Publishing Unit and the Webmaster is within the Desktop Publishing Unit. The major thing that has actually happened in terms of the Web site in the last four years, is that we actually have a new structure owning it". The change of composition has meant that Organisation E has better representation on the Internet Steering Committee.

**Key success factor #12 Secure server**

B and R were asked whether Organisation E's Web site was hosted on a secure server. "The Web site is outside our firewall and it is not protected as part of the firewall. It is a separate network entirely from the main Organisation E network. Because it is not connected to the Organisation E network, the same standards of security have not been applied. But there are only eight machines on that network, so there is no Organisation E information on them whatsoever, just enough to run browsers and whatever. Because it has that kind of physical firewall, we haven't been too concerned with security on the Web site as such".

"However, the proper firewall that is on the Organisation E network has a very high standard of security on it and has a fairly minimal number of applications or functions enabled on it to make it as secure as we can. For example, we haven't enabled it to connect to Telnet so people from the desktop can't get Telnet because that is not a function we have enabled from the firewall... Whereas they can go to the Internet PC LAN and they can get to Telnet from there with no problem at all".

**Key success factor #13 Importance of a project champion**

No comments were made that revealed Organisation E's champion for the Web site.

#### **Key success factor #14 Being aware of the competition**

The following responses are to do with competitors of Organisation E. “No (there aren’t others who are competitors online) ...we are trying to do the best we can in terms of relationships with the public and our clients, so it is putting a good face on government”.

They did look at what other government departments were doing. “Yes definitely. We all... as a department started doing publications on the Web. It was really overseas and basically US because I don’t think even the UK (equivalent of Organisation E) was doing it at that time. The United States and Australia had started to release their budgets from the Web, so that was a bit of a push”.

“No (we are not really in competition with other Organisation E’s). They are another source of information out there. We have seconded someone from here to the UK so there are analysts having links with the other organisations. Some of us from the Public Services have a link with the Australian Organisation E as well and that was really interesting”.

A source of pride was, “We were the first (Government) department to start publishing in PDF and we actually stuck with it even when...people would say, oh, maybe html is a better way to go, but we actually stuck with PDF and I think we have been proven correct that it is the better way to go”.

Another triumph was, “On the plus side on that feedback, there was a review done about 12 months ago on financial government Web pages around the globe and we stacked up reasonably well on that, but that was more on the content of the pages though”.

#### **Key success factor #16 Use of outside expertise**

A discussion about using in-house expertise versus outside help with R and B led to the following comment. “Despite all the pressures from outside (to redo the site), yes we are doing it in-house...it is a combination of having the expertise and also we want to develop the expertise. We see that it is an ongoing operation, pretty central to our marketing strategy I guess, so it is a kind of resource that we need to have. The ability to be fast-forwarded with”.

A comment that R made and amused both her and B was, “We get a lot of email from Web designers saying “are you looking for someone to do your site up?” There is a regular column by JC of Computerworld. He mentioned us a couple of times in that kind of sense”.

Organisation E also received help from a group they had joined. “We also belong to a group called Government Web Developers. It is a Wellington based support group for people who are working in Government and work on Web sites.”

### **Key success factor #19 Electronic commerce**

No comments were made about electronic commerce as such as the Web site is not designed for sales. It does give information about financial performance and economic indicators but is not a site that takes financial transactions.

### **Human issues and communication aspects**

The second cluster of questions examined aspects relating to the internal and external communication for the organisation, training, Internet and electronic mail policy and related issues. Aspects of customer reaction and support issues are covered in this section also.

### **Key success factor #3 Site part of overall communications strategy**

The Web site has been saving the organisation time and money. "It has been saving people when they phone departments, people you know bureaucrats from other governments want to come and visit. They often just get given the Web site and suggest that they have a look at various ...rather than us actually post out a whole lot of documents before they come to visit". Another example was, "We used to have a system when on the day that the six monthly financial report came out...things like that ...we used to get a whole lot of journalists with cell phones sitting in our organisation waiting for those documents to actually physically appear. We don't have that happen anymore. That hasn't happened for about 14 months, so the journalist community is obviously getting better service by the Web site".

Publishing Organisation E's material on the Web site "is a slow change that, I think what is happening now is when people are developing information in whatever form, they are at least conscious of the potential for it to be published on the Web".

Two comments related to the publishing of material on the Web site are, "Increasingly URLs on business cards...in our recruitment publications (to promote the site)" and "I think they put it (URL) on the insides of the budget page of the most recent one. So it is starting to click in".

Providing another channel for public to access the material was seen as a public duty. "It is just trying to keep... I think it is more in the public spiritedness nature of it, really, we are trying to do the best we can in terms of relationships with the public and with our clients, so it is putting a good face on government".

Although the Web site is being treated as a different channel, attention is being paid to issues of timeliness. "So that is another thing that has been built into the process now for publication is that can it be ready on the Web at the same time as we release it to the journalists and put it out in the book shop? So that is a kind of a tradition that Organisation E has, that I don't think any other department has really adopted apart from Stats and Reserve Bank".

In terms of a consistent message across various communication channels, "I don't think so (important that it has the look and feel of our other communication materials),

it is a different medium, to for example our Organisation E reports and the like but they have I guess a kind of a style that is very endemic to them, but it certainly has to be representative of our organisation, we don't want it to be a flippant looking page. It has to be formal and bureaucratic but at the same time it doesn't have to be as...boring!"

Integrity of information is also seen as key. "There is an expectation now that all information on our systems is official information or can be classed as official information. There is a responsibility for each user to ensure that what they have on the system and the way they are using the system represents Organisation E in a good way. There is a certain amount of education going on there, we are changing, we are in the process of developing more explicit guidelines on usage. R has done a lot of work with our pilot group on the Internet side, and we see that all rolling into a sort of general systems usage agreement which will include email, Internet usage, responsibility for security, all sorts of things like that".

#### **Key success factor #5 Internet training given and updated**

Training was provided to employees. "We call it (Internet training) Web basic, and they all felt that was good and it was just enough and it wasn't too much...It was kind of like you know, you go and buy a car and you get shown where the user manual is and things like that, it was just enough to get them on there".

More details about the training followed. "We would get about 3-4 of them come down at a time and give them this course. So that is all the exposure that some of them had had in terms of training, now we asked them in terms if we were to give this to other people, did they need more training? They said well basically what they found was that they would learn how to use it, they would start doing some stuff and once they had a bit more confidence about moving around and using the browsers and setting up favourites, once they had that level of confidence, they actually did want more training in terms of the particular things that (each individual is different) they wanted to know, but they always wanted to know something. Some people wanted to know more about searching, some people wanted to know about registering on sites for free stuff, someone wanted to know about shopping, things of that nature, so there was always some little thing that they did want to know more about. So we think there is a need to actually get people back when they are ready and just check through a few concerns. Or things that have come up that they want to get some advice about".

Some thought has been given to the need for further training. "They haven't really come back and asked for (further help to do other things). These things are coming out as a result of these interviews so that is why we think we actually need to do some follow up stuff with them at a course or on a one-to-one level. They are all saying they wanted different things, it seems to vary depending on the individual and their confidence level and the things that they were trying to achieve".

Training on the intranet has been as needed on an informal basis. “We never really trained on intranet, we just demonstrated it and then just went round and made sure people could actually install it and open it so because the browser itself is so basic”.

**Key success factor #6 Plan for dealing with site related communication**

While quite a few comments were made in response to success factor #3 (Web site part of overall communications strategy), few comments were made about the way queries or email were dealt with. “We do get information requests from people doing PhDs and theses and also school students. So I guess what they are wanting there is that the PhD and theses people are wanting to get into particular topics that we don’t publish. So they are needing quite specific information about a particular reform or element of the reform, so they aren’t actually in published form. So we need to give them a contact...the school people...sometimes they need some help finding the best pieces on our site that would be good for them and we give them some help and there is a particular document we pull out- something called the economic and financial overview...What we tend to do for schools is just print out the appropriate parts of that and send that to them or point them to it”.

**Key success factor #7 Formal Internet policy**

Questions were asked about Organisation E’s use of the Internet. “What we have done because there is a huge amount of concern about that issue, what we have decided to do is write a thing called an Acceptable Internet Use Agreement and on that agreement it actually expressly tells them what was forbidden and it also said what was preferred. It said this is the reason that you have been given this resource because it is for work related research, okay and we expect you to use it for that purpose. We also said you will not change your browsers and you will not download software unless it is a legitimate copy, about nine points of that nature. Everybody on the pilot signed that agreement. At the same time they signed the agreement they also knew what we were monitoring and what we could see of their activity”.

The organisation’s Internet use policy is part of what will be a wider agreement on information use. “There is an expectation now that all information on our systems is official information or can be classed as official information. There is a responsibility for each user to ensure that what they have on the system and the way they are using the system represents Organisation E in a good way. There is a certain amount of education going on there, we are changing, we are in the process of developing more explicit guidelines on usage. R has done a lot of work with our pilot group on the Internet side, and we see that all rolling into a sort of general systems usage agreement which will include email, Internet usage, responsibility for security, all sorts of things like that”.

**Key success factor #8 Consideration of site's marketing aspects**

The Web site is seen as a key part of Organisation E’s marketing strategy. “Despite all the pressures from outside (to redo the site), yes we are doing it in-house...it is a combination of having the expertise and also we want to develop the expertise. We see

that it is an ongoing operation, pretty central to our marketing strategy I guess, so it is a kind of resource that we need to have”.

Various positive and negative comments have been received about the Web site. “Some comments (have meant we have decided to do something about the dated look). At the same time that we get those good kudos about content, we get the poor kudos about looking so old fashioned”.

### **Key success factor #11 Intranet in place**

At the moment a pilot is underway with the organisation’s intranet. “We have got ...about 40 people using Internet on the desktop so they use the page on our intranet to get out to the Internet in terms of search engines”.

B made some interesting comments about the way the intranet and Internet Web site are being used by Organisation E. “Well you asked about the kind of developments both Internet and intranet, the intranet is pretty interesting in that we have developed a few applications on there for the more dynamic use of the system, and I see that as being a vehicle for delivering a lot of internal systems... We have got a lot of our internal policy documents. It is relevantly static in terms of the content, it is a resource that you can go and access but there is some of our processes that are likely to be reasonably well suited to using the intranet, the simple sort of ones like requisitions and materials and things like that...”

R commented on the way the intranet may be used in future. “It is a possibility, we are certainly looking at things like management information systems and EIS systems and (HR policies) are being looked at independently, they may or may not end up on our intranet, depending on what is the best way to deliver those. So it is certainly looking at the intranet as a means of delivering things, because it is we feel it is becoming... to the way people work in the place”.

### **Key success factor #17 Meeting customer demand**

Some comments relevant under this success factor have also been made under success factors #3 and #8. These concerned providing material on the Web site at the same time as it was to be made available in paper form. “The other thing that we are quite proud of is that we release documents -the embargo time is the same on the Web as in published form”.

They were unsure about site traffic and use of various pages when questioned. “I don’t know what we are getting in the way of revisits”. There were plans to better meet customer demand. “What we have been doing is getting ready to write a paper to promote a wider roll-out of the Internet within Organisation E, so we have been doing a fact finding mission on the people that have been using it for six months and after a series of questions about their use and looking at what they have said and then how we should possibly roll out or even if we should, but it is a business case from now we have got some empirical data”.

Some requests for specific information were mentioned. "We do get information requests from people doing PhDs and theses and also school students... people are wanting to get into particular topics that we don't publish about at all. They are needing quite specific information about a particular reform or element of the reform, so they aren't actually in published form. So we need to give them and we give them some help".

### **Looking back**

The third and final cluster of questions were designed to get participants to evaluate the process of putting their organisation online. Areas explored were aspects they were pleased with and proud of, unhappy and dissatisfied with, their future plans, any remaining issues that required resolving, what they would do differently with the benefit of hindsight and the role of their ISP in the project.

### **Key success factor #9 Updating and refocusing of home page**

Previous comments had been made about the Web site looking dated. "But now it ...looks like something out of the 60's and it needs to have that 90's look and feel about it and we are about to relaunch the whole look of the Web site. We haven't changed any of the content, we are just going for a more 90's look". When asked for further details, "The look will be really colourful. It will have a Pacific...we are trying to introduce some artistry really. We are not going to use tables so much and using things that look like buttons that are clear on every page as a navigation tool. We are going to try a number of levels as well. It is mainly only affecting the top two levels. The underneath documents aren't changing at all".

The new look site is aimed at predicting likely queries. "B is actually more efficient than I am. He wants to be able to help people, we want to try and anticipate some of the public's questions about issues before they start writing letters to us. So it was actually writing and publishing stuff on the Web site that could actually explain certain issues of the day to people".

Some of the queries that are coming through now might be a good starting point. "Well even the kind of thing we are getting now through ministerial enquiries, it would be issue based but it would be preparing a likely Q&A scenario for an issue...I guess it is just being a bit forward footed there, we were hopefully handling the individual enquiries as well as providing a resource there for example journalists putting together an article on Australian economy or something like that. Yeah, packaging material that we have in-house, suitable for consumption". Also, "For example, when is the best time for the tax cuts or something like that. Why did the deficit flow out, or why is the surplus doing so well or why aren't we paying off debt or...those kinds of scenarios".

The pilot currently underway is anticipated to be useful for future plans. "It is fairly hopeful that the results of the pilot will show that there is benefit enough to go ahead with an Internet roll out. It is fairly hopeful based on what the users have been telling us so far. I think there is other issues to do with exactly how much benefit that we

might get asked about and I think that will be the only cloud on the horizon, I think that is the main thing that we have to address in the write up of the pilot”.

**Key success factor #10 Positive relationship with ISP**

No comments were made relating to this success factor.

**Key success factor #15 Consideration of Web site on business effectiveness**

The Web site has met the initial objective. “(The initial motivation for Organisation E getting an online presence) was...an issue of disseminating a document in a particular point in time to as wide an audience as possible, in other words not generating a million copies of paper information. If you all needed to have the same document at exactly the same time”.

The process has been gradual. “It is a slow change that, I think what is happening now is when people are developing information in whatever form, they are at least conscious of the potential for it to be published on the Web”. Further opportunities were seen for providing a greater variety of information to more people over time.

**Key success factor #18 Organisational culture responsive to change**

The first comment under this success factor relates to the pilot. “We have... since December 1994, so those machines, there are eight in the building, they have been there for a long time. We saw the people we chose for the pilot hadn’t even used the Internet even though there was a machine available on their floor or in the branch. It seems to be to do with various perceptions about, it would look like I am not working, they don’t like sharing the machine with other people, they think the machine is too slow, just a bunch of perceptions about it really. They are, they are very slow machines and some of it, a lot of it seems to do with confidence, they didn’t like learning in a public setting because the machines are out in full view of everybody, there were those that would get on the machine and people would come along and they would have to get off, it was basically to do with the privacy of learning type of thing”.

The pilot has had quite a marked effect on those employees involved. “So that probably took a section that did work together and put them all on, because we thought it would be interesting to see if they actually lifted their policy game as a result of having the Internet and it is the next area that we have got the most interesting results about really. That group got a hell of a lot out of being on the Internet and it seems to have a lot to do with they had a manager that was actually very pro Internet and was using a lot of electronic resources for research. And they were running a kind of research culture and so therefore the Web was a tool that was of enormous interest and turned out to have a lot of benefit”.

## **13.6 Summary**

Organisation E had many positive comments about the experience of developing their Web site. They had very good support from top management and their DIY Web site

model has worked very successfully. A notable feature of conversations with Organisation E's employees was the direction in which the site was not going to proceed. The clarity of key staff in regard to this aspect helped stem development away from their core business focus. Comments relating to success factor five, Internet training given and updated, show careful consideration of user and business needs both current and future.

## **14 Organisation F case study**

### **14.1 Introduction**

This chapter will look at the use of Internet within the transport and storage sector (I). Organisation F forms the focus of the sixth case study.

This chapter follows a similar format to the preceding ones. It looks at the background to the Organisation F case study and outlines the method employed for investigating the case. The results and discussion sections are next with the summary drawn from the case concluding the chapter.

### **14.2 Background**

Organisation F is based in Auckland and has links to branches in other countries. The aim of the current Web site is to enable customers to look online and find information on the containers and ships relevant to them so they can locate this without needing Organisation F staff. Another aim is to enable documentation to do with shipping of goods to be prepared ahead of time and at a reduced cost.

Design and development was done rather quickly with all work in-house after a lot of input from a wide range of people. Planning for the Web site started about eighteen months previously when Organisation F began thinking about moving their network to a platform similar to the Internet. The site is primarily driven by a range of user needs and contains shipping movements, schedules, templates and various types of documentation. Upkeep and maintenance is ongoing and there has been tacit support from management for this.

### **14.3 Survey implementation**

The method used has been described in the methodology chapter with the particular approach to Organisation F described here.

Initial contact with Organisation F was made after meeting their Webmaster. An interview was held with SC on Wednesday 21 January 1998. During this session the researcher was introduced to and interviewed other key staff.

Interviewees spoke openly in response to questions about transportation, Internet and their Web site. Follow-up questions were done by phone and email to those initially interviewed.

### **14.4 Results**

This section will detail the results under three headings: getting online; human issues and communication aspects; and looking back. As these have been outlined in

previous cases A to E, we will move to presenting and discussing the results in the following section.

## **14.5 Discussion**

This section will analyse interview material from the results section under the success factor headings.

### **Getting online**

The first cluster of questions forming the case study examined motivations for getting an Internet presence, planning, designing and launching the site.

#### **Key success factor #1 Plan for the organisation's Web site**

The Web site came from plans about eighteen months previously when the organisation were starting to look at moving their network to a platform which is very similar to the Internet. This made it much easier for them to get on the Internet. "We had a few of our bigger customers starting to ask questions, whether we were up there, whether they would be able to do this, that or the other, and at that stage we figured we would just get a presence up there, just to say well look we are up, there is not a lot going on but ..."

Planning was largely done on the go with decisions being made as the situation evolved. "(Planning) was done very ad hoc, I mean, I think I created the Web page, not knowing anything about it, and rolled it out onto an ISP site, they are hosting a site for us. And like I say it is very much just a text based information page basically".

The main motivation was to establish an online presence. "Totally just to get the presence up there (was the main idea behind the Web site)". Being the first in the industry online was also a powerful motivator. "No one else was (getting online) and even now it is still very limited within the transport industry, you know a few of them have started to get it together. We are actually planning and rolling a lot more stuff onto it in the next couple of months to keep that edge. It is an edge thing for us, you know if we can do something better and first, we will do it and that is all it is".

#### **Key success factor #2 Development of an integrated Internet package**

At the time of the interviews, the Web site was very much a "stand alone" part of the business.

#### **Key success factor #4 Support from top management**

A number of people were involved in the initial content on the Web site. "Our General Manager, the Sales Manager, and the Development Manager were sort of involved in the original content that went up there. ... We had a lot of input from all sorts of people. We weeded it out and put the best stuff in. It was open to discussion within the company".

**Key success factor #12 Secure server**

No comments about a secure server or security issues were made during the interviews. This may be due to the current nature of the site and the lack of need for any such measures.

**Key success factor #13 Importance of a project champion**

The current site is largely the work of one enthusiast who has worked away on his own. Tacit support has been given by management and suggestions given by them when asked for. Information needed for the site has been provided when requested by appropriate members of the organisation.

**Key success factor #14 Being aware of the competition**

The following comment reveals the desire for a first mover advantage via the Web site. "No one else was (getting online) and even now it is still very limited within the transport industry, you know a few of them have started to get it together. We are actually planning and rolling a lot more stuff onto it in the next couple of months to keep that edge. It is an edge thing for us, you know if we can do something better and first, we will do it and that is all it is".

The following comment refers to two competitors and the material provided on their Web sites. "At the time (we went online) there was only one other shipping company up online, I just trying to remember who it was, but in the interim we have seen Tasman Asia have come in with an information driven one too and it is not even that really, it is just a few pages. Last time I looked at it, it wasn't very, I think it had company information and it wasn't anything that customers could use, so I don't know why they bothered. Tasman Express have got a nice working model at the moment. I don't think they have actually got it up on the Net but they are not far away. So you know, all of them are looking at it".

Assessment of features that would make the site competitive led to the following comment. "I mean the only thing that we are really lacking is that container tracking and having said there is still the New Zealand company unless they have got, I mean we can do it via our Chinese site. Our Head Office has got all this functionality on their site- like FedEx have got".

FedEx was mentioned again later in the first interview regarding their ability to track and trace items being moved. The comment was made in response to this business and their transportation system. "(FedEx have something similar to that, you can actually track as it travels your package or whatever). They have a worldwide system. I don't think it is in New Zealand... And I know it costs an arm and a leg, sort of, a little bit bigger budget than I have... Well we all have something very similar to that, I mean within the transport industry we are all going to have very similar pages, there is only so much functionality that the customers want, and it is all the same. Obviously it is container tracking, vessel schedules, booking information, charges".

### **Key success factor #16 Use of outside expertise**

As indicated under success factor #1 (Plan for the organisation's Web site), the current Web site is largely the work of one person with a few suggestions about content from management. "(So you have designed it all yourself, initially?) Correct. Um, very little (planning). I am artistically useless, so it was very much get it up there rather than worry about what it looked like. I mean it looks fairly tidy, I mean it's not..."

Further developments were seen as unlikely to involve outside expertise. "Just myself (will be working on the changes)". When asked whether he thought he would ever ask for any help from outside the response was "Never...It is just the way I work. It is just...I have just found that by bringing outside help in is expensive, a waste of time, um, it is only something I can pick a book up and read and learn and do myself, no to be quite honest".

### **Key success factor #19 Electronic commerce**

While the current Web site has the ability to save both the customers and the business money, there is not yet the ability to do financial transactions online.

### **Human issues and communication aspects**

The second cluster of questions forming the case study examined aspects relating to the internal and external communication for the organisation, training, Internet and electronic mail policy issues and related issues. Aspects of customer reaction and support issues are covered in this section also.

### **Key success factor #3 Site part of overall communications strategy**

While the current Web site has some interactivity, it is predominantly information based and designed to be faster and more convenient than previous methods. "All we have (is a template), and it is a text label saying vessel that you want, name that you want to show, voyage, cargo description, all that stuff that pertains to the legal document.... Normally (prior to the Web site) it would be faxed or a courier would drop off a typed one on our letterheads".

A further development added extra functionality to the site. "Since then we have put online bookings, so people can go into the Internet, fill out a form and it is just emailing back to us to our bookings personnel, and we have legal documents for every shipment and the set that goes out has to match, we do a set of them and the customer dictates how that will look. Where they want it, it is very legal, if there is a comma in the wrong place everything falls over, so they will actually, so they can actually fill out online how they want this document to be and before it was a fax system, you get faxes, they are very hard to read, and you miss a comma or a dash somewhere, you know even if something wasn't in caps lock or lowercase".

Information such as sailing schedules and port charges have been included on the Web site as a service to customers and a way of reducing staff time. "We have a lot of charges that aren't in our control, port costs, and there are all different in different ports around the world, and so what we did was publish that sort of information up

there. We put up our sailing schedule so customers were able to tell rather than ringing up and wasting some staff time. They could just look onto the Net and download schedules of when all these vessels are calling into ports, which is very important to them. They need to know when their cargo is in so they could go straight up onto the Net and figure exactly when their vessel is getting in and get all their documentation ready to pick their containers up”.

Despite the advantages provided by including the material mentioned on the Web site, S sees some limitations. “At the moment ... that is not open to you (information on other businesses with goods sharing the vessel). What they get is... they get general vessel, they will know which vessel voyage their cargo is running or they will go in and they can find out when that vessel voyage is calling, when their cargo is going to be discharged basically and in which ports. There is no... They can't even tell if that container number is even on that ship. Because quite often we will have a short shipment. That is something we are rolling at the moment, there is a lot of database work that is involved there so it is a little bit more tricky”.

The site provides a channel to contact others. “You can email about nine different people depending on what you are looking for. You can email many of the branch managers, our bookings personnel Auckland, our docks personnel Auckland, our sales manager Auckland and our customer services manager in the south. In addition to email contact, the Web site provides links. “We have links to all the port pages that are available at the moment, we have links to other Organisation F branches, I think there is about seven Organisation F sites around the world now, and that would be about it”.

Providing customers with the ability to email key people through the Web site was seen by the business as a significant advantage. Some of the companies they have been dealing with do not provide the means for such easy customer contact. “That means that they can communicate with us, via our Web site. I mean the biggest thing at the moment, is that you have got, you know half these companies haven't even got Internet email which is, to us is okay we have had it for 3 years now, across the company. And everyone else, I mean, a lot of companies still have one Internet email account. So you know it really is an uphill battle, I know a lot of the corporate companies we are dealing with are getting there, and some of them are there already obviously. I think it is just a little bit too early, I think that we know, I mean it hasn't hurt us, one stretch of the imagination but even so it was a resource that we could have held off on using”.

Future developments of the site include opening up certain areas of the database to customers who have a password so they can find out if their details are correct within the database and whether their rates are correct. “It is still very much at the business stage, I am looking extremely hard at the moment in getting our next cut rolled out which we have already done the planning for of what we are going to put into it. You know the functionality etc, so as I said earlier too, that shipping is there is only so much information that you can dish out and we have pretty much covered most of that”.

The future of the organisation was likely to be influenced by the Web site. "Theoretically, if we can get it all in a perfect world, you know these people are going to stop ringing up our staff on the floor here, we want to downsize the staff obviously. So what we are hoping to do is just streamline our whole operation. From getting rid of the faxes and the phone calls... and at the end of the day we have got one flat fee that we pay for the site, which is very minimal, and we are hoping to strip out all this extra curricula activity that is going on with staff... Electronic is the way the world is going unfortunately".

#### **Key success factor #5 Internet training given and updated**

Training within the organisation is perceived as being costly and fast outdated. Some efficiencies have been observed with cross platform applications. "Very slack (training within the organisation). It is a computer problem, you roll a bit of software out, you spend \$15,000 training your staff how to use it and six months later it is out of date. And we have found that, we have been pouring so much money into the training budget that really is obsolete, within six months to a year it is a waste of money. We found that we train people on the core stuff. We have our own central database to run the customs software luckily so it doesn't change very often. People who have had that core training have found that most applications are becoming cross platform. It doesn't matter which one you run, you read a help file, they are all very similar so we have sort of stepped back from the training side of it".

#### **Key success factor #6 Plan for dealing with site related communication**

The Web site is considered to be operating in a satisfactory manner as a communications device. "We put a hit counter on about three months ago and we have had about 1,100 hits since. It is not many but we are small, well we are not small but we are New Zealand, and you know we have only probably got a hundred customers that would be using it. And of those...It is a fairly good indication of the use it is getting for what we are and the way we are using it, it is a good count". In terms of usage, there are "probably 10 to 20 (email messages or enquiries or email forms per week)".

Future plans are to streamline the system and enable customers to find more of the information that they want themselves. "What we are hoping to do is to educate people to use the Web site properly, like the bookings page to be able to enter all the information so we don't have to have these (bookings) come back. We are still streamlining information and what we want to do is ... have these forms updated into a database straight away. So rather than a person sitting there punching the booking or being on the phone for ten minutes, they'll fill out the form, it'll come into our database and then we will have someone to go through and check the booking".

#### **Key success factor #7 Formal Internet policy**

No policy on Internet use currently exists in the organisation.

**Key success factor #8 Consideration of site's marketing aspects**

The Web site booking form function is seen as a service to existing customers rather than necessarily a means of attracting new ones. "I mean surely it is there, people come across it, they have found us if they are looking for shipping great, but really it is a service, it is about a service after market. It is something we are giving to our customers. The stuff we have got online will probably confuse most people, they go in and look and they wouldn't know what a booking was or a documentation etc. It is something we are marketing to our existing customers, it is not a sales product".

The site is considered important in terms of branding and identity. The extra features and functionality provided by the new site are seen as important marketing tools. "It is very important (things like logos or slogans, the branding or the corporate look to the page). I have learnt a lot (since the initial site went live). I have been able to compress things and make sure they work better on the Internet, it has been a learning curve. The next cut we are doing has little database connectors, flashing graphics, we will make it quicker to load, etc, etc. And we will be making it look good. What we have got now is the skeleton, we have got the functionality, we know what extra functionality we are going to add in, we just want to flash it and make it quicker to load".

**Key success factor #11 Intranet in place**

S has been responsible for the Intranet design and development with some of the material on there also being useful for the Internet site. "Yeah, I did that (the Intranet) myself. It has got a lot of relevant information for customers that we didn't think about while we were rolling the Intranet out, we were looking for functionality in the workplace. A lot of the stuff that has resulted is going to be exported out to the Internet".

The next comment relates to the amount of acceptance that the intranet has achieved from staff. "Good, there has been no resistance at all. I mean most of them, the ones that have gone online, it is streamlining their working and making it easier for them so they are more than happy about it. That is the other thing, with the Intranet, going in, people are seeing what I can do basically in-house, and I have made their life more easier so you know it really has been good with it in-house, there has been no resistance to change at all".

**Key success factor #17 Meeting customer demand**

The site was created in response to demand from customers. "We had a few of our bigger customers starting to ask questions, whether we were up there, whether they would be able to do this, that or the other, and at that stage we figured we would just get a presence up there, just to say well look we are up."

Providing a number of features including booking forms has enabled customer demand to be met. "We have found that it has been good, all those overseas customers, a lot of them are in Japan where the technology is a little bit more in place... and being

geographically removed, it is great how they can go and get their schedule without making a toll call”.

Many of the features previously available on the intranet were rolled out on the Internet site. These features have made life easier for both staff and customers.

The initial page was very static and it suited the purpose at that time. Site revisions have considered customer feedback and features that will make the site more useful to them. “Now we are looking at it again and saying "well look this doesn't work, let's do something different here". We are doing a lot of in-house programming, like the schedules page, it brings up a big map of the world, you click where you want to go and it will show you the schedule for that part of the world. We are putting in a database connector and we are saying so that customer can go in and say "I want to go to the USA, I am coming from Auckland, when is the next vessel voyage, or if I leave at this date what is the vessel voyage going to be?" So it is little toys like that. You know that is customer driven again- very much so”.

A very proactive customer-focussed strategy was outlined. “What we have done is a survey of our top 100 customers and I will be going on site with a sales rep to find out where they are at, if we can help them get online. We are very good on IT and it is something we are doing well at and we want to make sure the customers benefit from what we have done too. Like I said earlier too is that people just don't understand how easy it is now”.

The form of assistance to be provided is very practical and as follows. “Really we are going to analyse where they are at, if they know what they are doing, (obviously not in such blunt terms), and find out if we can be of assistance in setting them up to be able to utilise our service. This may be I go down there, I say, you have got to buy this, this, this, it is going to cost you \$2,000, and then get the phone number for somebody who can install for them, or whatever”.

### **Looking back**

The third and final cluster of questions in the case study were designed to get participants to evaluate the process of putting their organisation online. Areas explored were aspects they were pleased with and proud of, unhappy and dissatisfied with, their future plans, any remaining issues that required resolving, what they would do differently with the benefit of hindsight and the role of their ISP in the project.

### **Key success factor #9 Updating and refocusing of home page**

Some comments on the updating and adding of new features have previously been made under success factors #1 (Plans for the organisation's Web site) and #17 (Meeting customer demand). Additional comments follow.

Comparisons were made between the current and future versions of the Web site. “It's functional, and that is all I have to say. I was very pleased with it when I first rolled it out. I was quite happy, it wasn't totally ugly to the eye, it was there, it was done, but

having trained myself on a lot of other aspects on Web design, I'm looking back now and thinking it is quite ugly, well in my eyes I think it is ugly. But like I said before I had a purpose to get the thing up there, it was completed, the purpose was fulfilled and now we go back again and we just go over the whole thing”.

In contrast (and having reviewed the initial site with the benefit of hindsight), “The next one coming up will be a lot more graphical, I mean I am very much of the view that graphics, aren't what the World Wide Web is about. I mean it is nice to go onto a page and see lovely graphics and everything but it is also frustrating sitting waiting for the ten minutes to download off the Internet. You know I am information driven, which probably doesn't help the look of our Web site”.

The Web site is becoming an increasingly valuable tool for the business as the Internet gathers momentum and greater acceptance by consumers. “I think the Internet is on a verge at the moment of just about being there, and we are hoping we can be in a position where we can utilise when it all comes online and everything is going. We do a lot of trading at the moment, data traffic over private networks, GUIs, and you know we are looking at utilising it for those purposes, our suppliers, our priority Web site, just to cut costs”.

Some ideas on future developments emerged from the interviews. “There is about three of us that are thinking, you know, what can we do?... We are going to have container tracking, we are doing a schedule thing at the moment which is being unrolled. There is not really (anything) functional-wise, I mean we are really going back and tidying up at the moment. I can't think of anything off the top of my head to tell you the truth”.

#### **Key success factor #10 Positive relationship with ISP**

The Internet Service Provider used was not helpful in enabling the business to get online. “The Internet Service Providers really need a kick up the bum. They don't make easy for people, a lot of this is confusing, like TCP-IP, we had all this thrown at us and I knew nothing about it. They sent me a form saying you have to do this, this, this and this specially to reach the Web, a static IP address and our own domain name. It is not off another server and that was the real run around”.

Another comment with similar sentiments from S is “I seriously believe that the Internet Service Providers need to clean up their act. They need to make it simpler for people”. He made some suggestions. “It is their industry and I haven't got the time to think about that (how to improve their service) but I am setting up our Web server which is basically what they have got running there. You log onto their server and you browse, people log onto our server and browse the sites that are on our server. And you know, it really is easy, especially in software development there is about four buttons to install the software and it is all auto-loading and everything”.

A later comment indicated the level of frustration with the ISP and the desire for the business to host their own site. Some explanation of why they wanted greater control

follows. "It is coming to a rapid end (relationship with ISP). We have been putting a pipeline, a pipe off the Net into the office and putting it on a Web server and we have come up with the functionality of trying to add into it and it needs to be in house, so we are going to lay at least one line off one of the Internet providers and pipe it straight into here. So that we have got full-time access and it is our own connection. We have just had a lot of problems with X, you know there is only so much you can do when someone else is housing you on their Web site because you can't have any database kind of activity so you can't use any of your datastore. I meant that is the whole point to get the information out there and probably 90% of the information you've got is on the databases. I mean you can have static publishing to your database to the Internet but we want to have online, we want to be able to have people come in and say they have got a container number and they want to be able to punch that container number in and find exactly where that container is, whether it is being loaded in Japan or on the way out to New Zealand or whatever, or fallen over the side of the ship somewhere, who knows".

Skills related to hosting the site were developed in-house once they found out what was required. "The time involved wasn't really an issue. Once we figured out exactly what all the ISPs were speling on about, we figured out what we had to do, registering our name with the domain names. I think from the time we decided to do it, to the time we had it published was about three weeks, you know that was designing the Web, bringing all the structure and funds, etc, etc. It wasn't an issue at all".

**Key success factor #15 Consideration of Web site on business effectiveness**

Current use of the Web site by existing customers is fairly limited. "I would say less than 5% (of our customers would be online who would be filling out forms this way)... (We have) 5000 customers maybe. We have a lot of core customers who ship with us, they ring, like The Warehouse, bringing down so many containers, and a lot of one-off customers".

One reason why use is not higher is lack of readiness. "The inherent problem with the Internet is there are still a lot of companies especially the small or medium sized ones which don't have the capabilities, I mean a lot of them don't even have an Internet email system which I am finding a bit depressing really. You are doing all the stuff, you are doing it online and ready to go and there are not a lot of people who can utilise it".

As outlined earlier, the business has targeted their best customers and are helping them do business online. "We have just gone for our top 100 customers and there are some big customers there. There is The Warehouse who are just starting to get into it, they are bringing up their own Intranet, so you know, they are all big companies and even those ones, it is funny we have had a lot of saying "come back to us in three or four weeks and we should be ready to go". It seems to be accelerating as we talk. People are starting to come online or thinking about going online and planning it at the moment".

Downsizing staff is seen as a future benefit as customers use the Web site rather than phoning. "What we are hoping to do is just streamline our whole operation... from getting rid of the faxes and the phone calls and ... we are hoping to strip out all this extra curricula activity that is going on with staff... Electronic is the way the world is going unfortunately".

A future customer target was given. "I would like to hit it up (get customers online) to at least 25 to 50% (within six months). I am really only worried about our top 20 customers, that do 90% of our business".

#### **Key success factor #18 Organisational culture responsive to change**

The main finding in this area is that there have been positive responses from their own employees. "Good, there has been no resistance at all. The ones that have gone online, it is streamlining their working and making it easier for them so they are more than happy about it. That is the other thing, with the Intranet, going in, which is sort of the in-house site, people are seeing how, and I have made their life easier so you know it really has been good with the in-house, there has been no resistance to change at all".

As has been previously noted, resistance or lack of readiness to change offered via the Web site possibilities has come from some of their customers.

### **14.6 Summary**

Organisation F's Web site was very much an isolated entity in terms of the business. There was evidence of customer research and responsiveness to meeting customer demand. While current use of the Web site by existing customers is low, contacting their top 100 customers and working with them to use the Web site shows a good understanding of the potential impact of the Web site on Organisation F's business effectiveness. Unlike a number of other case studies, the organisation did have an intranet with some of the same content as on the Web site. One reason for this was to make information previously available only to employees also accessible to customers.

## **15 Organisation G case study**

### **15.1 Introduction**

This chapter will look at the use of Internet within the property and business services sector (L). Organisation G forms the focus of the seventh case study.

This chapter follows a similar format to the preceding ones. It looks at the background to the Organisation G case study and outlines the method employed for investigating the case. The results and discussion sections are next with the summary drawn from the case concluding the chapter.

### **15.2 Background**

Organisation G is a firm of barristers and solicitors in Palmerston North. They have a physical presence in the central city and offer a range of legal services. The Web site is a recent initiative primarily driven by one of the partners. The current site is seen as a communications tool as well as a site attracting legal business through email.

The Web site's design operation and maintenance is low cost. The idea is to eventually offer a full range of legal services through the Web site and take payment for these via credit card. Legal staff would be able to telework or work remotely and use the email facility to receive work from clients.

Design and development has been contracted out with legal staff being involved as their areas of speciality are required. An informal contract for site upkeep and maintenance is currently in place.

### **15.3 Survey implementation**

The method used has been described in the methodology chapter with the particular approach to Organisation G described here.

Initial attempts to contact the law firm were made after hearing about their Web site through their Web site designer. Contact was made with PM (Web site designer) and an interview conducted on 4 May 1998. A subsequent interview with MS (partner) was held on 9 May 1998. Follow-up questions were conducted by phone and email.

Both interviewees spoke openly in response to questions about this particular business, various legal issues, marketing, technical and communication issues.

### **15.4 Results**

This section will detail the results under three headings: getting online; human issues and communication aspects; and looking back. As these have been outlined in previous cases, we will proceed to the discussion.

## **15.5 Discussion**

This section will analyse interview material from the results section under the success factor headings.

### **Getting online**

The first cluster of questions forming the case study examined motivations for getting an Internet presence, planning, designing and launching the site.

#### **Key success factor #1 Plan for the organisation's Web site**

The idea of providing legal services online and the method of payment was something M had been considering "for a long time". "I arrived at that idea when I was looking at a mail order type situation. That idea appealed to me- what I thought we could do is sell legal services by mail order and get paid by credit card".

M moved in his thinking from traditional mail order to what the Internet could provide. "I saw that combination (mail order, credit control and the use of computers and the Internet and IT). What we tried to do was develop a Web site that is what we call interactive so that it isn't just an advertisement, it is there and tells people what we do. Basically (it is) a Web site that tries to invite people to come to us if they have a query or problem so that we can reply to them and if there is something that we can do then provide our services to them".

M had some ideas about the content he wanted to see on the site. "There were certain things that we wanted- the credit card facility, we wanted a description of what the firm did, who the people were in the firm and we are still working on that so there'll be more detail in future about the fee authors and a bit about the history of the firm".

M doesn't have any particular Internet expertise but "We have one particular staff solicitor who is very computer literate who had a lot of ideas on how to develop the site and liaised with P (Web site designer)".

In terms of staff involvement, there was little consultation. "The Web site wasn't something discussed as a firm to start with, we basically went away with the idea and just went and did it". Legal staff weren't involved in the planning process but as the area they were working in became the next area to go online they were needed. "It is just a matter of each individual staff member becoming involved as their field or fee author they work with becomes involved in it".

While the site was designed for selling legal services, "it was more the idea behind (the site) that we were thinking of but we did want to promote the firm in terms of the logo and everything else as well because it was basically strengthening the firm's profile as well".

Another reason for the Web site was to allow the possibility of teleworking (an employee working at a distance from his or her usual place of work with the aid of technology). "Yes, that's (teleworking) the long-term goal as well. I know that is

happening overseas already-telecommuting- rather than travelling into work and being able to work from home. That's something we are working towards and I see it happening in the near future and we can all be operating from home or in different sites so that (the Web site) is the first step towards that as well, so it is a combination of all those factors that sort of made me decide this is what we should be working towards”.

#### **Key success factor #2 Development of an integrated Internet package**

M's concept of delivering legal services with payment via credit card was the original motivation for the Web site. “That (delivering legal services via the Internet) was where I started from and the whole concept arose from. It blended in with our credit control as well”.

The staff and various sections of the business have not been involved in the development of the Web site from the start. The idea is to include various people as their area becomes the next addition to the site. No evidence of overall planning and integration of the Web site with different business functions seems to have taken place. “No (the Web site wasn't something discussed as a firm to start with), we basically went away with the idea and just went and did it. But we did then brief the firm- all the staff were there and we actually had P to do a sort of an in-house seminar and explained to all the staff how the Web site worked, so everyone is aware of what we have there and how it works. It is just a matter of each individual staff member becoming involved as their field or fee author they work with becomes involved in it”.

A comment that showed lack of system integration was one about the two systems currently in use within the business. “At the moment we have two separate systems. We have an IBM system where we can get on the Internet and everything else but our other computer system is still a different system for our word processing and everything else so at the moment we have two separate systems! And also we are not at the stage where we have each fee author with a computer of their own”.

#### **Key success factor #4 Support from top management**

The Web site idea originated with M who is a partner in the law firm. The following comments show his vision for the Web site. The first refers to the size of the potential market and the possibilities for growing the business. “We see that (customers outside PN and outside NZ) as an expanding market. I saw the growth of the Internet and the use of computers and that was another growing area of the market cos I believe in the very near future that personal computers are going to be in every home like a TV, video, fridge...”

Another comment refers to possible changes in the way the work is done in the firm. “Yes, that's (telecommuting) the long-term goal as well. That's something we are working towards and I can see it happening in the near future....so that (Web site) is the first step towards that as well, so it is a combination of all those factors that sort of made me decide this is what we should be working towards”.

**Key success factor #12 Secure server**

No mention was made of the need for a secure server for the Web site.

**Key success factor #13 Importance of a project champion**

One of the law firm's partners served as the project champion. He was responsible for driving the project and was the liaison between the Web designer and staff at the firm. One of his contributions to the project has been his strong motivation to grow the market and his vision of what possibilities the Internet will allow in future. "I saw the growth of the Internet and the use of computers and that was another growing area of the market".

The project has also been driven by M's view that dealing face to face is not the only way law firms need to conduct business. "I know that is happening overseas already- telecommuting- rather than travelling into work and being able to work from home. That's something we are working towards and I see it happening in the near future and we can all be operating from home or in different sites so that (the Web site) is the first step towards that as well, so it is a combination of all those factors that sort of made me decide this is what we should be working towards..."

**Key success factor #14 Being aware of the competition**

Several interview comments were made along the lines of "We believe it is the first time that a Web site (ours) has been developed to that extent. We have seen a lot of Web sites and we know a lot of other law firms have Web sites but they are more static". Various New Zealand and overseas Web sites were being monitored and the firm had not seen any that were delivering the services they wished to offer.

Gaining the first mover advantage in the area was seen as a powerful incentive. "It's just a matter of taking the first step and I'm sure that others will be doing the same thing and following in our footsteps. We thought if we are to do it then we should do it sooner rather than later and allow it to evolve and as the technology evolves as well we'll be able to move with the technology".

**Key success factor #16 Use of outside expertise**

Outside assistance was provided by a Web site designer. He worked closely with one of the partners who served as the liaison with the law firm's staff. As previously mentioned, the Web site goal was two-fold: to increase the client market and to offer the staff opportunities to perform telework.

A comment that outlines the overall task is "Our brief to P was we wanted a Web site that would hook the potential client in and we draw them in so they can see what they can do- there's a means of them communicating with us". A more specific comment relates to marketing that M directed P to organise. "I wanted to bring in the word lawyers so people would pick it up when they are searching and what P (Web site designer) did was that he actually added the word lawyers underneath and enhanced our logo by making a blue band down the bottom and the word lawyers in white".

While the bulk of the task was dealt with via outside expertise from P, “We have one particular staff solicitor who was a strong motivator from the outset. R who is very computer literate had a lot of ideas on how to develop the site and liaised with P. Another staff solicitor who is also more computer literate than I - he is responsible for monitoring it. Both these people are recent graduates and have used computers in their studies”.

The firm was briefed by P and he gave an in-house seminar and explained to all the staff how the Web site worked, so everyone was aware of what the site consisted of and how it functioned.

### **Key success factor #19 Electronic commerce**

The desire to make money by doing business through the site (rather than just advertising) was a strong motivator from the outset. “The method of payment is something I had been considering for a long time”.

One of the important aspects about taking money through the Web site was to ensure that legal work done was paid for. “If we are going to provide a client with advice, then we want to know that we are going to get paid- so it's a method of prepayment- and the way we are trying to work it is that we'd field an initial enquiry and tell them whether they're wasting their time or our time or if there is something we can do for them. If it turns out that there is something we can do for them...then we'd go back to them and say “for us to provide this opinion or to take this certain action it would cost X no. of dollars. If you want to proceed, then fill out these details and provide us with this payment””.

The online process “blended in with our credit control as well- what we are trying to do is ensure (particularly work where there is no money passing through us- like conveyancing or a commercial transaction for instance) to ensure we get paid for what we do. Basically the money would be paid up front but it would still be held to the client's credit- we don't just take the money straight away and say that's it. Basically it would go into a client's trust account like we do normally. The money is paid there so we know the money is there to pay for the work when it is done”.

There is still work to be done to ensure transactions can be taken via the Web site. “There were certain things that we wanted- the credit card facility.... And we are still working on that”.

### **Human issues and communication aspects**

The second cluster of questions examined aspects relating to the internal and external communication for the organisation, training, Internet and electronic mail policy and related issues. Aspects of customer reaction and support issues are covered in this section also.

### **Key success factor #3 Site part of overall communications strategy**

The Web designer was given some specific instructions by the legal firm. "We wanted to put in some information about articles from our previous newsletters, NZ Law newsletters, and we asked P (Web site designer) to provide a Web site that would draw the potential client in- to convey to them that here were legal services at their fingertips so that they could actually communicate with us, not just an advertisement saying "we're here, this is what we can do for you" and leave it at that. Our brief to P was we wanted a Web site that would hook the potential client in and we draw them in so they can see what they can do- there's a means of them communicating with us. The Web site is set up in such a way that they can go further in and fill out the boxes and then communicate with us".

In addition to using the site to communicate content, the Web site is seen as another means for the public to reach the law firm. "We have tried to structure the Web site so if they have a query and they want to communicate with us, they can do it through email. That is perhaps another aspect of it that we were developing- we see the email function of Internet as being something that is to the client's advantage and our advantage as well so that the client doesn't actually need to come into the office".

Email was seen as a viable alternative communication channel. "How it works is that a potential client with a query, they can communicate with us via email as an alternative means rather than faxing us, phoning us or coming into see us". When asked whether the channel was indeed a viable one, "There could be (some issues when the client is best seen face-to-face) but it is probably just as effectively communicated by email and in fact the response that we have received so far a lot of enquiries seem to deal with family type matters".

One advantage from the point of view of both the legal staff and clients was the convenience of time offered by email. "They can do it outside office hours- they can do it in the evening when they have time- that comes through to us and it isn't taking up their time trying to get hold of us by phone or having to make an appointment to come in, so it is more flexible for them. And it's more convenient for us as well- when clients try to contact us we might be tied up on the phone or tied up with other clients so it means we can communicate with each other in our own time and still make the best use of each other's time".

One of the advantages about communicating via email is "I don't know if it is just coincidence or whether it is a trend but one thought was that it could be because it is a very personal thing and that people felt more comfortable communicating through email rather than face to face because they found that less threatening and perhaps from their own point of view more comfortable perhaps because it would depersonalise it rather than making it more personal".

In addition to the medium being less threatening for dealing with emotional issues, "they could take their time and say it the way they want to and think about it and in fact I think it is an advantage in that respect. They can sit down, look at what they've

put down and perhaps even rethink and rework. And that gives them time to really think the whole thing through". Another advantage of the medium allowing clients to take more time to say what they wish is that they are not being charged for the time taken to express their views.

The comfort factor is seen as being important. "So far I think that the response has been good in that we have had the enquiries from out of town which was what we were wanting- I don't know where some of them have come from but some have come from Wellington which is quite promising and the other positive aspect is that we have had existing clients ring us up and say "we didn't realise you were on email, can we communicate with you on email?" When they realise that they can, they have basically expressed to us that they want to communicate with us via email and we have had clients starting to communicate with us via email". Allowing new and potential clients to communicate via email enables the firm to extend their client base.

#### **Key success factor #5 Internet training given and updated**

While training in using the Internet as such has not been given by the law firm, staff have been shown the Web site. "We did then brief the firm- all the staff were there and we actually had P to do a sort of an in-house seminar and explained to all the staff how the Web site worked, so everyone is aware of what we have there and how it works".

#### **Key success factor #6 Plan for dealing with site related communication**

The email comes to one main computer and the solicitor responsible for monitoring that decides who it goes to depending on whichever solicitor specialises in the area. When asked about the email received from the Web site, "one of the other solicitors (is) monitoring it but I think we have probably had something like 10-12 enquiries that we have actually responded to by email. And probably we get an average of probably...maybe 1 or 2 a week".

Thought has been given to the speed. "We try to make it a 24-hour turnover and it depends on how involved the query is. If it is any more than 24 hours what we try to do is get back to the enquirer and say "look it is going to take a bit longer to do the research and all the rest and we will get back to you as soon as we can but we have received your query which we are dealing with now".

While the volume of enquiries is as low as the present total, email being accessible from only one computer in the firm is probably not a concern. The process used does however sound rather cumbersome. "What happens is that all the typists and secretaries have word processors and they are the ones that (at the moment) still do all the typing. Probably eventually when we reach the stage of having voice activated computers and word processors that are of good enough quality for us to dictate instructions and letters then each fee author will probably have a computer on their desk, which will then probably be connected to the Internet and everything else as well. But at this stage because it is still being typed, the email gets printed out on hard

copy that goes to the solicitor concerned, the solicitor drafts a reply to the query, and the typist then types it back onto email and a reply goes back to the enquirer”.

**Key success factor #7 Formal Internet policy**

There is no formal policy in place for Internet use in the firm. This is at present not a concern as only one solicitor has access to the email facility and P (an outside consultant) is responsible for the site’s content.

**Key success factor #8 Consideration of site's marketing aspects**

The brief to the Web site designer was to hook the potential client in so they could see what the law firm could do. “It was more the idea behind (the site) that we were thinking of initially but we did want to promote the firm in terms of the logo and everything else as well because it was basically strengthening the firm's profile as well”.

The business is aiming high in terms of clients. “Looking beyond the local market- you could look at national and international markets- that would increase our market share”. Another comment was also along global lines. “Basically your Web site is your advertisement -your circulation is basically worldwide”.

M saw that there was a new market online “in terms of people who either can't come into the office- disabled or housebound- for example parents who have children at home that find it difficult getting out to the office or getting away and finding babysitters, or elderly or through medical reasons isn't able to get away from the home, or just people that are so busy that they can't get away from their office or place of work”. The Web site was designed to cater to this segment of the market as well as extending the firm’s geographical reach.

One of the key things to ensure new markets are realised is to promote an organisation’s Web site to increase visibility. “It will depend on how far we go in terms of promotion and so far we basically just had the interviews and the reports in the newspapers. We've advertised locally in the newspaper but at some stage we are going to have to advertise it nationally whether we do it through magazines or whatever- we need to promote it nationally so we get national coverage and hopefully that will bring a wider range of response”.

A step towards meeting the online market has been taken but there is still key work to be done. “We have taken the first step to get all set up and we are basically relying on people when they are searching for "lawyer" or whatever coming across us but we'll need to place the Web site on search engines and business cards and on our letterhead and everything else. That's what we are heading towards (putting it in search engines)- we still need to work out what we need to do- whether we need to put ourselves in there or they pick us up. That's something we need to do”.

**Key success factor #11 Intranet in place**

There is no intranet planned for the law firm. As mentioned in one of the interviews, there is currently only one computer capable of receiving email and there would be no point in establishing an intranet for the firm. No mention has been made about further investment in technology and while an intranet would provide benefits to teleworkers, no real planning has begun in that area either.

**Key success factor #17 Meeting customer demand**

A number of comments were made about why the Web site had been designed and developed and the advantages it would offer to customers. It was quite noticeable that no survey of clients had been performed prior to the site launch or any survey done since. The quotes that follow are from the law firm's assessment of benefits.

"How it works is that a potential client with a query, they can communicate with us via email as an alternative means rather than faxing us, phoning us or coming in to see us". While email does seem to offer a plausible alternative, no mention was made about whether clients did in fact prefer to deal with the firm face to face. No figures were provided to show the popularity of fax and phone and whether existing clients were happy with these means of contact or would, in fact, prefer to use email.

A perceived customer benefit was that email would allow communication outside office hours. Once again, no survey had been conducted to ascertain the popularity of this. "They can communicate with us via email- they can do it outside office hours- they can do it in the evening when they have time- that comes through to us and it isn't taking up their time trying to get hold of us by phone or having to make an appointment to come in, so it is more flexible for them. And it's more convenient for us as well- when clients try to contact us we might be tied up on the phone or tied up with other clients so it means we can communicate with each other in our own time and still make the best use of each other's time".

M mentioned that they could do any type of legal work through the Web site. "There are certain areas that we would like to develop but I think that just about any area of law can be done on email and via Internet through the firm. We basically have a fairly broad area of services and I guess there are certain areas that we have more of than others but there is no particular area that we wouldn't deal with or be able to deal with". Once again, no assessment of customer demand had been done.

Actual customer demand so far had been low although this may be due to lack of visibility and placement with search engines. "I've actually got one of the other solicitors monitoring it but I think we have probably had something like 10-12 enquiries that we have actually responded to. By email. And probably we get an average of probably...maybe 1 or 2 a week".

**Looking back**

The third and final cluster of questions were designed to get participants to evaluate the process of putting their organisation online. Areas explored were aspects they

were pleased with and proud of, unhappy and dissatisfied with, their future plans, any remaining issues that required resolving, what they would do differently with the benefit of hindsight and the role of their ISP in the project.

**Key success factor #9 Updating and refocusing of home page**

“There are certain areas that we would like to develop but I think that just about any area of law can be done on email and via Internet through the firm. We basically have a fairly broad area of services and I guess there are certain areas that we have more of than others but there is no particular area that we wouldn't deal with or be able to deal with (via the Web site).”

A comment made by M about further developments indicated that submitting the Web site to search engines had not been done. His remarks indicated that this wasn't completed as part of the planning process. “That's what we are heading towards (putting it in search engines)-we still need to work out what we need to do- whether we need to put ourselves in there or they pick us up. That's something we need to do”.

There was no mention of future plans to ask users about their views of the Web site. The initiative appeared to be driven by one partner in particular with no prior or future client research.

**Key success factor #10 Positive relationship with ISP**

No comments were made about the Internet Service Provider.

**Key success factor #15 Consideration of Web site on business effectiveness**

A business case had not been made for the Web site. Few of the interview comments related directly to this particular success factor partly because the response was so small that the enquiries had had minimal impact.

“I think we have probably had something like 10-12 enquiries that we have actually responded to by email. And probably we get an average of probably...maybe 1 or 2 a week. So the enquiries themselves aren't as many as what we'd expected them to be and we had a fairly large influx in the beginning and that dropped off partly because of the promotion that we had and it may be that we need more promotion and advertising to bring those other enquiries”.

In terms of the impact of the business effectiveness, “At this stage there hasn't been anything that has translated into actual work. We've had quite a few enquiries and going by the statistics there has been quite a lot of hits there so quite a lot have gone onto the Web site and had a look... So at this stage it is still not producing the work that we'd like but that was something we expected anyway because it is probably going to take a while before people feel comfortable using it... I can see that it might take a year, two years or more before people become comfortable using it before it actually becomes commonly used but it is just like everything else. I think the time will come when it becomes very commonly used”.

A comment that is more to do with customer benefits than business effectiveness is, "It probably will (be cheaper than coming in and having 20 minutes) because they can get all their thoughts on email which will probably take less time than coming in for an interview- it will save them in terms of not only our time but their time taking time off work, getting a car park and getting to and from our office so it probably will save them. That was another point we considered- to make our services more cost effective". Another cost related comment followed. "It will be (cheaper for clients) because at the moment we get charged, even local calls get charged on Telecom- especially if you are using a mobile phone it will be cheaper on email".

The Palmerston North based firm may be able to offer more cost effective services than firms in larger centres. "For example a situation that arose in Auckland and Wellington where they have transport problems- travelling the distance, the time taken to do so and if they are going to communicate with their lawyer in Auckland by email anyway, there's no difference in communicating with an Auckland lawyer or one in Palmerston North. In Palmerston North there may be a saving for them in that an Auckland lawyer may charge more in overheads than us so there may be cost savings in dealing with us and our charge out rate".

A possible future benefit for the firm is teleworking. "Teleworking is the long-term goal as well. I know that is happening overseas already-telecommuting- rather than travelling into work and being able to work from home. That's something we are working towards".

#### **Key success factor #18 Organisational culture responsive to change**

As shown in the responses to the previous success factor, very little work has resulted from the Web site so far. "Well some typists and other staff have been involved in that fee authors would give them a reply or dictate a reply and they would then go and type it up and send an email so those support staff have been involved with using the system. Not all staff have been involved because the field they work in hasn't been involved".

It is possible that a move to all legal staff getting a computer on each desk would reduce the amount of retyping needed in future. "What happens is that all the typists and secretaries have word processors and they are the ones that (at the moment) still do all the typing. Probably eventually when we reach the stage of having voice activated computers and word processors that are of good enough quality for us to dictate instructions and letters then each fee author will probably have a computer on their desk which will then probably be connected to the Internet and everything else as well. But at this stage because it is still being typed, the email gets printed out on hard copy that goes to the solicitor concerned, the solicitor drafts a reply to the query, and the typist then types it back onto email and a reply goes back to the enquirer".

## **15.6 Summary**

Organisation G was very aware of the online competition and was monitoring both national and international Web sites related to their industry. They saw that gaining the first mover advantage would be of major benefit to them and using outside expertise to develop their Web presence was a step in that direction. Organisation G had a very strong advocate in their project champion and unlike some of the other case studies, was thinking about using their site for electronic commerce. Interview comments and observations revealed that while there were positive intentions for the Web site and the perceived value it would bring to the organisation, the logistics in terms of staff email access, staff consultation and buy-in, client readiness and willingness to use the Web site were largely missing.

## **16 Organisation H case study**

### **16.1 Introduction**

This chapter will look at the use of Internet within the retail trade sector (G). Organisation H forms the focus of the eighth case study.

This chapter follows a similar format to the preceding ones. It looks at the background to the Organisation H case study and outlines the method employed for investigating the case. The results and discussion sections are next with the summary drawn from the case concluding the chapter.

### **16.2 Background**

Organisation H is based in Palmerston North and operates as a retail and mail order business supplying embroidery and patchwork products. They call themselves “the largest specialist stitching supplies retailer in New Zealand”.

The aim of the Web site is to provide information about current stock, especially in a pictorial form and serves as an electronic catalogue to display patchwork fabric and embroidery supplies. They have three channels: the shop, the mail-order business and the Web site. There have been a number of sales from the Web site and this aspect is growing in popularity. The site is updated weekly and all samples are in colour. While some customers do not wish to order online, they use the virtual catalogue on the Web site to select their purchases.

Design and development has been done in-house and management is very supportive. A number of changes have been made since the initial version of the Web site. The Managing Director says the Internet has opened the world for their business, both in terms of providing additional customers and sourcing new and interesting products. The Web site has benefited the business by reducing overseas travel costs as designers now see the site and approach the business to carry their products.

### **16.3 Survey implementation**

The method used has been described in the methodology chapter with the particular approach to the Organisation H described here.

Initial attempts to contact VP (owner) were made after visiting their Web site. After an initial discussion by phone, a face to face interview was arranged for Thursday 23 April with VP followed a day later with KB (employee) and DD (Web designer).

All three interviewees spoke openly in response to questions about Organisation H, retail and Internet sales, staff and communication issues. Follow-up questions were asked by phone and email to those initially interviewed.

## **16.4 Results**

This section will detail the results under three headings: getting online; human issues and communication aspects; and looking back. As the format of the results has been outlined in previous cases, we will proceed to the results.

## **16.5 Discussion**

This section will analyse interview material from the results section under the success factor headings.

### **Getting online**

The first cluster of questions in the case study examined motivations for getting an Internet presence, planning, designing and launching the site.

#### **Key success factor #1 Plan for the organisation's Web site**

The idea for Organisation H's Web site was raised when one of the shop's customers noticed her favourite needlework shop had a job advertised. "I developed a CV and they wanted people who had a variety of needlework skills and I didn't have lots of those, so I directed my CV to say I use the Internet and look you can find out about needlecraft things and designers have Web sites and so on, and put in my CV thinking "well, we will see what happens". V read it and thought that does sound interesting and I could do the other things they wanted as well, so I got the job".

While there was no thought of using the Internet within the business prior to K's appointment, V the owner had attended a Telecom seminar. "As I say, I had never seen a Web page, apart from...I was invited along to a seminar, two years ago I think it was with Telecom, and they wanted to show us what Web sites are all about, and I looked at that and I was quite impressed with what I saw".

K proved the catalyst for the business to use the Internet and helped V see ways Organisation H could benefit for this business tool. "I mean upto then I had only ever thought of a Web site as being a place where people play after hours at night looking for things. I had never thought of it in the terms of how I could use it as a company marketing my product. Upto then I had sort of thought about that, I thought "well it wouldn't affect us, I mean how could you possibly do it?", and then K joined us."

Although those involved have found the process enjoyable, the learning curve has been fairly steep. "We didn't have a modem at all or anything (in the business) before the Web site (in 1996)". K explained to V what email was and what the price was of sending an email relative to a fax. "I was sold instantly when I heard that, I thought really you know, it is 3c a page or something to send an email to the States compared to a \$1.50 if you send it through a fax, and I go "mm I can see some benefits..." Yeah it has got to be good. Got to be a catch but there wasn't one that I could see! So we said, "alright okay well then maybe we better do that"".

"We got the emails put on in January 1997. The domain name was registered, and we went to that breakfast meeting. It was Manawatu Commerce Centre and they were doing one on the Internet. We went along and there was an Internet consultant there and he was telling all the various businesses about it, and I think that was the final push that V said "look let's go, let's get on this, let's get on the net"".

After K accepted the job they started talking about the Internet and what could be done with it. Initial thoughts were something that really was just a brochure that was fairly static, which was what K was capable of doing at that point. D (K's boyfriend) then came along, got involved in the project and it became more interactive and more involved. At that point V said "look I think it is time you put this on a commercial basis, now that I have seen that you have done it, we need to pay you something anyway, for what you have done so we are both comfortable with that and then on top of that I feel that there is on-going work to be done, I think, now that I am satisfied, that you know what you are doing we should get it on a commercial basis".

No budget had been set aside for the costs of developing and maintaining the Web site. "We didn't haggle as much but we talked about how much I could afford to pay, and that was the other problem was because we have gone through a pretty tough period this company and we were very, very heavily in debt a few months ago and we pulled through. We weren't in serious trouble, but we just didn't, couldn't afford to go spending any more money put it that way. Certainly not on things that didn't bring the money in straight away".

Another comment made by V related to the costs of the site is "There is no way we would have been on the Web if we had gone through the commercial way of doing it like that- gone to a company and said "build us a Web site". We wouldn't have even considered it- I don't think it would have been economic at all. Yes, (that's why it was done in-house, there was someone with the skills and was keen to do it), K came up with the idea of doing it and I said "How?" and she said, "D and I can do it, we think". So I said "well as long as it doesn't cost me anything for you to practice on my machines and our time, go for it".

The planning process considered the needs and behaviours of existing customers, especially those who do business via mail order. "There are people who will probably never ever get onto the Internet. They will die before they get round to it... so therefore you can't stop sending that (Needlecraft News- tabloid newspaper style publication) out as a result of that, that is still a major marketing tool. Um, but at the same time we want to have a foot in both camps because there is a lot of people who are more into the Internet than they are into that (NN). And wouldn't even bother reading that probably".

K and D were unimpressed with the design elements of the other sites they looked at. A comment they made revealed the "do it yourself" attitude they adopted. "Amazon.com was probably the main one (site with ideas) we liked...the standard (of

other sites) wasn't that great, so we ignored that and just started making up our own really".

K said "I think that may be a factor too, in that I don't know what we are supposed to be able to do or not do and I say, "can I see this result?" and I mean he has a go at it".

D's attitude towards Web site design was, "If you sit down and think about it, you can figure out a way to do pretty much anything with the Internet, and the problem is so many people are reliant on packages... where Word does what they think you need to do. If you are doing everything from scratch you are doing it how you want it, if you make mistakes fine but you will fix them and you will find out why such and such didn't work."

### **Key success factor #2 Development of an integrated Internet package**

Opportunities exist to integrate the Web site with the other business systems at Organisation H. When discussing a further plan for the site the following comment was made. "It will be good to do (have the cumulative totals of purchases so VIP customers can see how far they are off the next voucher) but you see it is not linked to the same database, it is on the Web site, it is not linked to our accounting package." Achieving this would provide more useful information, both to the business and the customers.

A comment about the Web site made by D showed that it was still largely regarded as a "stand-alone" part of Organisation H's business or another channel rather than integral to the enterprise's functioning. "That side of it (sales and orders), everything except for the Web site you would have to speak with V, he'd keep track of that".

A related remark reinforces that the Web site is not perceived as central to Organisation H's business. "I don't think they (other staff)... don't really have a clue (about the Web site)...they know that we have it, and they know we get orders and K and D deal with it." K described the picking and packing process as "Whoever checks the email gets the orders, says "right this is the order" and it goes in the box, goes to the shop, the shop picks it, it comes back to the office to invoice and be packed and sent, so it becomes part of the standard mail order procedure". While the orders received via the Internet become part of the standard mail order procedure, the Web site does not interface with existing business systems.

As yet, little has been done to capitalise on the advantages offered by the Internet to Organisation H's business. An example of this is the newsletter (Needlecraft News) as revealed by comments from a discussion on the topic. "I am not sure if, well I suppose we could if, people said "well look from now on I am on the Internet I don't need your newsletter so don't send them anymore", you will have to have a flag on that person's account which says don't send it out and that would be more difficult than sending it out. I mean as it is now we just print off 4000-3500 labels and out they go. So it would be more difficult to be selective about someone who doesn't want to receive

one, you know they pay their \$12 so therefore they get it. Everyone who pays \$12 has a flag on their account which says send newsletter, you know”.

Another illustration of the way that integration of the Web site with the business operations has yet to be realised is shown in the following comment. "Well that will be good to do (suggestion regarding ordering) but you see it is not linked to the same database, it is on the Web site and is not linked to our accounting package...What happens is the emails are printed out and then we have to go and physically invoice them out on our accounting package. And it is the invoicing that generates the points and that is not linked in any way to the Web site".

#### **Key success factor #4 Support from top management**

The following comments from V indicate his level of Internet competence. He acknowledges that he does not have the skills required and he supports and encourages others who do to help his business. "I am not a Net person, I have never played with the Net, I don't even have a computer that links to the Net, one day I will. K has done it all but one of these days I would like to, I can never get to a computer this is the thing, because we don't have enough spares, but one of these days I want to be able to get down there and sit beside her and search for some of these things and get some ideas, from other people's Web sites".

D acknowledges V does not always have a strong understanding of the processes involved but "V the boss, he is very enthusiastic".

#### **Key success factor #12 Secure server**

The business has had a secure server since their decision to get a Web site. "We contacted Kiwi Webweavers to do some of the original graphics and they recommended Clear Light Communications in the US and they said "go with them, they are better than the NZ Internet company because they offer a really good service...and we went with the secure service straight away at the same time and the shopping cart source code was written to incorporate that at the same time. So the secure server has been there since the start".

The secure server enables the site to take online sales. "It is not a problem (giving credit card details online) and people may ask their credit card information in a letter. What is a difference? People can open that letter up and write all the details down, if they wanted to".

A comment about the security of information on the site was "Our accounting package, it is not even online in any way at all, so there is no way they can get into that, it is on a different computer and everything. I think it is the same with this business of not putting your credit card on Internet. I think a lot of it is up here it is all... people are scared of it because they have heard all these stories, but what is the difference with you pick up the phone, you see the television at night..."

"We are selling so many different things...the cost and the weight don't necessarily relate. Some other places have said shipping is 25% of the cost of the order and that didn't work so we didn't know what to do. In the end what we did was put in an option of "email me with the cost of shipping", which has been a lot of work for us, but it has meant we have found out what is involved, so what we have done, is included a place in the catalogue file and we have a weight for everything, in some cases it is an average, new stock we now weigh it and ...we put it in the catalogue".

### **Key success factor #13 Importance of a project champion**

The project champion is D who has pushed the Web site project and developed the initial concept. "...that is when D got involved and said "well why don't we got a whole lot further than that and actually build a proper site with interactive ordering facilities and so on?" So it sort of went from them (K and D)". He is not an employee and is paid on an hourly rate for the work done. "No, he (D) still isn't (employed by Organisation H)...they call him the gullible boyfriend cos he does whatever he is told".

The combination of D pushing the project assisted by one of the employees is working well for all concerned. V acknowledges this by saying, "I have said to her "don't you ever do anything to upset him because ... we don't want a break up, it wouldn't be in our interests! And he (D) has been very, very pleased with what he's done and its one of these things that I am very, very grateful about that they have done because there's no way that I could afford to pay them whatever it is, I mean John Barlow saw what they had done and reckoned it was worth \$20,000+ ...if it was to be done commercially".

### **Key success factor #14 Being aware of the competition**

V made the comment that "the Web page wasn't prompted by competitors or colleagues or anyone and sort of keeping up with anything". After the launch of their own site however he became much more aware of what others were doing online and often visits competitors' and suppliers' sites to check what they are doing. K describes the motivation as ""No, we didn't actually think that (good opportunity, lack of competition) no, we just kept on going really (when we were developing the Web site)".

Initially they searched online for others in related businesses. "Well, when we got the email installed, we also installed Netscape, the browser and we started looking on the Internet for needlecraft sites, and there aren't very many". K commented "The standard (of other sites) wasn't that great, so we ignored that and just started making up our own really".

Amazon.com's site was used as an initial model. While this site was not a direct competitor in terms of quilting, patchwork and needlecraft materials, Amazon.com does stock a range of related books. "We sort of sat down and went through it (Amazon's site) and looked at what they did and then did it ourselves but with that as a guideline. And we also like the way they had their pages set out at the time. They

have since changed it but they had it with a side bar down the side and things like that and we found that was quite a good way to do it". K agreed with this "Amazon.com was probably the main one (site that had ideas) we liked".

K's assessment of sites they currently look at is "We look sporadically and I haven't hit a site that is a patch on ours to be honest." As the majority of their competitors are in America, D has been monitoring these. "In America a lot of the shops ...are still mainly brochure sites, they just show items and say contact us to buy this or contact us for more information". A similar comment from V was "We have looked at the Web sites overseas that have fabric on it, but there is really no ordering facilities there at all, it has just simply a catalogue and if you want to order it you order by email...in fact all the models that we have looked at in our industry have been just that, they are simply a catalogue page with several pictures on it, and if you want to order you go down to the bottom of the page and there is a form which you print out on your printer and...handwrite what you want and fax it through. Some of them don't even have email facilities. So yeah that has been the sort of interesting situation, because there are some great Web sites out there but not in our industry and so we have sort of tried to adapt it."

A comment by V reflected some benchmarking. "There was one particular company that we deal with in the States who have the hit rate at the bottom of the page...and we looked at it about November or December and they said "you're the 4500th customer or hit since January, since the beginning of the year, and we achieved 5000 in four or five months... We feel that is pretty good!"

#### **Key success factor #16 Use of outside expertise**

Although K and D did the vast majority of the site work themselves, they did use an outside consultant when they were stuck at one stage. They tried to work out a method of selling small portions of material (parts of a metre) but the big problem is that the only sort of models they could use were people like Amazon books for instance who have got a great system but they never sell point something of a book, it is always a whole one.

"With the commercial shopping carts that John (consultant) recommended to us we were saying "yeah okay fine, its is \$US450 for this and then you will pay \$4-500 to get it customised for your site"... "So that was just red rag to a bull to D, he said, "well I will show you I can do it". He wrote the script that night and it worked fine. According to V, "Yes it was basically, he came the next day and said "you know that thing you said I couldn't do, there it is". John never looked at it. Tell a Kiwi you can't do something!"

They started to do all the programming in July 1997, getting John (outside consultant) and then getting rid of John because "in our mind he was slowing us down". He charged Organisation H \$800 for what seemed to them a "pathetic amount of time" and the advice he gave them was that what they were trying to achieve was not possible.

The reasons for this were "what he (outside consultant) was thinking and what we were thinking didn't match and I was finding that he wasn't listening to me, and I would tell him what I wanted and he would go away and the proposal would come back exactly like it had been before". K and D didn't necessarily see the failure of John to listen as bad for the project, rather it appears to have made them more determined to do it on their own. They were proud of what had been achieved and the way their skills had developed as a result.

While the owner acknowledges his lack of expertise in Internet matters, using outside expertise was never really a solution because of the costs that would have been incurred. "There is no way we would have been on the Web if we had gone through the commercial way of doing it like that- gone to a company and said "build us a Web site". We wouldn't have even considered it- I don't think it would have been economic at all. Yes, (that's why it was done in house there was someone with the skills and was keen to do it), K came up with the idea of doing it and I said "How?" and she said, "D and I can do it, we think". So I said "well as long as it doesn't cost me anything for you to practice on my machines and our time, go for it".

Some reference material was used for ideas. "Basically we got two books from the O'Reilly range, the HTML one and the C-Java programming one and we just used them as reference for building the site. Other than that we have gone from what we have seen".

Another source of outside expertise for the business but someone who has not been directly related to work on the Web site was mentioned by V in one of the interviews. "She is our business advisor at Ernst & Young and we were just chatting the other day about ideas. I find she is (good), ... for business information I guess she is a gatherer of information like most people are. And I get the result of that. But we were talking about ways and means that we can target our 20% (of customers), how can you look after the top ones?"

#### **Key success factor #19 Electronic commerce**

A comment illustrating that orders from the Web site are not given preferential treatment or are processed separately is, "What happens at the moment when something comes through on the site we keep a record of it on the site as well but it is then treated as if it was an email or handwritten letter...they are not kept separate, they are not flagged- is this the Web site or a phone order etc?" This indicates that Organisation H see their Web site as just another channel rather than a vehicle for electronic commerce as such.

"The biggest one we have had was \$700 and that is on the Web site itself...in fact she ordered a quilting stand and she didn't order the hoop for it, so we rang her up and said "do you want the hoop?", she took it so it actually wound up to just over \$1,000 for the order and that's the biggest order we have had off the site. But it is anything from \$1.10 for a skein of embroidery cotton up".

"All mail order, all orders that went outside of this building in other words. \$40-50,000 a month is what we are doing in mail order, and we have done about say \$10,000 off the Web site in that...\$1,000 a month I suppose you could say. But it is exponential, it is going like that, it started off with nothing and has just gone like that".

### **Human issues and communication aspects**

The second cluster of questions examined aspects relating to the internal and external communication for the organisation, training, Internet and electronic mail policy and related issues. Aspects of customer reaction and support issues are covered in this section also.

### **Key success factor #3 Site part of overall communications strategy**

One of the early and continuing motivations has been to use the site as an interactive medium to provide added value through strong content and providing a forum for customer discussion. V acknowledged that the business did not have a clear communications strategy but he clearly saw that the Internet had a number of advantages as far as communication was concerned. "Like most small businesses, I am working on it! (communications plan). But yeah, I think so, now that we are in there I can see it as being a much better system in all ways for communication".

Consideration has been given to the impact of the Web site on existing communication channels in the business. "What we want to do here is make Needlecraft News (a mail order tabloid newspaper sized publication) into more of a magazine style thing, if we can. Put more newsy talk in it, information about ...like there is a page in there about clubs around New Zealand, to advertise what they are doing, people can write in if they want to and we can put articles about people (which we wouldn't have on our Web site)".

Customers are referred to the Web site via email messages. "When we do an update, I send out a letter to all the people whose email addresses we have...we have just done an update and it has all the URLs so they can click straight in it".

The Web site serves as an information source (in addition to the tabloid publication) that provides answers to a number of likely queries. Some customers are using the site as a first point of call and then seeking interaction. "We are getting quite a few people who are looking at the site and then phoning up with their order, because they want to speak to someone, because they might have a question about something else".

One of the advantages that V saw of getting email access was faster, cheaper and easier communication with his suppliers. "So this is the other interesting thing that happened when I first looked at going onto email, way back before we went the whole hog, I very proudly sent a fax off to everyone in the States with a note saying "look we are now on email, you know we will be able to communicate much cheaper in the future so please give us your email address so we can start talking to each other". I was shattered that almost nobody in the States that I deal with is on Internet or on email...Now, okay that was two years ago. And since then there have been a number

that have come back and said "okay we are now on email". But I couldn't believe it. Major companies!"

There were two views evident through the interviews. One was that the Web site was a supplementary channel with additional information being provided and the other view was that it was a parallel channel. V has the first view. "Oh nobody is saying "don't bother", oh...one person has said to me "oh this will be good, you won't have to bother sending me the newsletter anymore". Yeah that is what she said, and I thought well no because it isn't all on there, there is a lot of the blurb and you know the articles and so on that isn't on there at all".

K regards the Web site as a parallel channel. "At this point (we are replicating) material in the newsletter and onsite. Everything in the newsletter has a little blurb so we are using the same blurb on the Web site...mostly it is just to save time. Because it says the same sorts of things, (and I think that is a big difference between our site and many others), but we actually have a description of all the books and things because the description is required here where it is in black and white or if it is a book about quilting what is in the book, so there is a place in the catalogue to put the description so you get all the descriptions for the patterns which most other sites don't seem to do".

Since new items appear first on the Web site, Internet customers have an advantage over those waiting for the next copy of Needlecraft News to appear. "What happens now is that every time...a shipment, or a new product arrives in the store, it is immediately scanned and then it is put into the Internet within a week and it goes into the next issue of that Needlecraft News whenever it may be".

#### **Key success factor #5 Internet training given and updated**

Very little in the way of training has been given to Organisation H staff with almost all the work being done by K and D. A comment indicated that the situation would change with another person being employed in response to the queries received through the Web site. "J my sub-editor...helps me with the email, the idea is that eventually J will be able to do my job when I am not around, but there is not a lot of point in teaching her how to do the Web site at the moment except for receiving the orders because we are planning to change it". Some training would be required for J but no training had been given to any other staff.

#### **Key success factor #6 Plan for dealing with site related communication**

The Web site has created a huge amount of extra enquiries and further resources in addition to the design skills of D and the input by K. She comments, "I have just recently got an assistant...it is wonderful for me because the job, we have created a monster, we actually didn't think we would get as much response at once as we have, and it is coming from all over the world. I mean we are sending things back to America, to Columbia and Philippines and all sorts of places that are finding us on the Internet".

One particular feature of the Web site's ordering system has led to increased communication with customers. "We are also getting questions put on the order system, there is a space where people can make comments and ask whether we have anything, we are getting quite a lot of people using that as well".

Several comments from those interviewed indicated that increased communication was not always such a good thing. "We are actually getting treated as some of the companies that we sell products from... Alpha doesn't have a Web site but we have a page where we sell it. So they hit us and they think this is Alpha and we get this letter and we are having to say "look it is nothing to do with us".

Another comment in a similar vein from V was that it was "very time consuming (dealing with email messages that are from people with nothing better to do with their time)...and "we wouldn't get those sort of queries normally". He said "there is an awful lot of people out there who have nothing better to do with their time, and they see us come up and they will be in Waikiamukau or the middle of darkest Africa or the middle of New York and they will just see this, "oh Organisation H, gosh I have been asking, I will ask him the same question I asked 10 other people already and they have all given me the same answer that you can't get it anymore, I want to finish off my granny's quilt that she started 50 years ago and I want a piece of fabric that has got this on it, I wonder if they have got any in stock". And we are getting email messages for things that are just...(very time consuming)".

Having made these comments V did acknowledge that "a lot of those sort of questions (asked via email) a lot of damn fool questions, you know...it is all to do with our products, yeah potential sale, potential products" so they did have some relevance. The impression he gave was that dealing with the range and volume of queries was time consuming.

Two different comments were made about the speed of response to the Web site. K said "We try to have a 24 hour turn around (on Web site orders) but when a newsletter has just gone out we get really busy and or if there is a really big magazine shipment, that seems to slow us down a bit". This contrasted with D's comment indicating that any communications received via the site didn't receive particularly preferential or prompt treatment. "What happens at the moment when something comes through on the site is we keep a record of it on the site as well but it is then treated as if it was an email or handwritten letter...they are not kept separate, they are not flagged".

#### **Key success factor #7 Formal Internet policy**

No policy is in place for Internet use within the business. This could be because only one employee and one contracted worker are involved with the Web site at present. No mention was made of a policy being required when J (K's sub-editor assistant) begins assisting with Web site enquiries in future.

### **Key success factor #8 Consideration of site's marketing aspects**

While it appears not much effort has gone into considering the needs and preferences of customers, the Web site team are aware "there are people who will probably never ever get onto the Internet. They will die before they get round to it... so therefore you can't stop sending that (Needlecraft News) out as a result of that, that is still a major marketing tool. Um, but at the same time we want to be have a foot in both camps because there is a lot of people who have been more into the Internet than they are into that (NN). And wouldn't even bother reading that probably".

One of the marketing ideas to develop in the future is to offer extra features to VIP club members. "That is our next thing, we were thinking of a special VIP page, "if you are a VIP club member click here and put your password in and you can see all this extra stuff that others can't see"".

The following comment about advertising shows that not all materials sent are electronic. "Most of the advertising is through Needlecraft News and using the Web site. We have a number of programmes that go out automatically every month with a magazine subscription. Also we have fabric clubs where people get sent samples of the latest fabric...and if we have something new in we will send a flyer out with those".

While the following comment from V illustrates that he is not exactly sure how many of his customers have Internet and can access the Web site, it does give an indication of why Internet is not used as the sole or main marketing channel by the business. "I think our database (1000 customers) has still less than 300 um of our 3500 (receive Needlecraft News) or whatever, I think there are still less than 300 that are actually on the Internet...so it is only about 10%".

K predicts that Web sites will become increasingly important in future. "There will always be a market for both channels (paper and electronic). That is a wait and see game at the moment...In the long term, I certainly think that the Web sites in general are the future of mail order."

It appears that further work could be done in terms of sites linking to the business. "I am not sure how many others link to us, as a likely outlet. I don't think many because that is the problem is that an awful lot of the people we buy from are just not that sophisticated themselves". Initiatives have been taken to lodge the site with search engines though." He (D) has loaded us on quite a number of search engines around where we feel people are going to be looking for us and there are one or two places that are...like chat groups and things like that which are relevant to us, to stitching, and so they are quite happy to put us, put our name in there as just being one of the places round the world that you can find yourself these sorts of products".

**Key success factor #11 Intranet in place**

The business has no intranet and no mention has been made about one. It is unlikely because of the size of the organisation, that they would need one unless they were expanding dramatically.

**Key success factor #17 Meeting customer demand**

As the Web site has developed decisions have needed to be made about what content and features are maintained and changed. "We had to make a decision, there is no way we could put everything on. So what we have done is...put the major stuff on at the beginning and then everything new that has come in has gone on, and if there is something people ask about then we will put it on". Thought has also been given to the type of experience provided. "We made the site available complete (so customers didn't have to fax, phone or write a letter to order)".

Some of the customer requests have been relatively minor. "Some of the wording (was changed)...it was a little bit more explanation of something for the fabric, they just wanted a couple more points put in there, just a description of how wide the fabric is, something like that..." As the Web site has been live longer, "It is more being progressive as people have a problem...mentioned something, made a suggestion... changes have gone on then, so it is not exactly the same as it was when we started, because rather than these changes happening at the beginning it has sort of being more progressive."

K has given some thought to the types of customers the business has. "They (Organisation H customers) go into one category or the other, they jumped on this bandwagon and they think it is absolutely wonderful or I don't know about this! And then you have got the people... the Internet is sort of, more part of what they do". Thought has also been given to the browsers customers are likely to be using. "The site will run on the oldest version on Netscape and Internet Explorer" as well as "people's screens are different...what we have tried to do is to get as accurate match as we can on our screen (to the fabric) and we have worked how to scan it so that if you are running 800x600 screen it is about 100%...you don't know what hardware people are using at the other end".

The Web site has been meeting the needs of overseas customers. "That we found was very, very interesting was that we are getting a significant of orders from all around the world including quite a few from the States ... initially we were getting more from overseas than locally because these were the net savvy people who were out there and seeing what they could find. And it is a good Web site and obviously they are finding things they like. And V and the other staff are saying "why are these people wanting stuff from America when we are getting it from America in the first place?" We have also had some second and third orders now, from the States".

**Looking back**

The third and final cluster of questions were designed to get participants to evaluate the process of putting their organisation online. Areas explored were aspects they

were pleased with and proud of, unhappy and dissatisfied with, their future plans, any remaining issues that required resolving, what they would do differently with the benefit of hindsight and the role of their ISP in the project.

**Key success factor #9 Updating and refocusing of home page**

Once V had seen what was possible with the Web site he saw the need to keep it updated and maintained. He discussed this with D and K. "I said to them "look I think it is time you put this on a commercial basis, now that I have seen that you have done it, we need to pay you something for what you have done so we are both comfortable with that and then on top of that I feel that there is on-going work to be done. I think, now that I am satisfied, that you know what you are doing we should get it on a commercial basis".

There was some fairly open discussion about costs. "We didn't haggle as much but we talked about how much I could afford to pay, and that was the other problem was because we have gone through a pretty tough period this company and we were very, very heavily in debt a few months ago and we pulled through. We weren't in serious trouble, but we just didn't, couldn't afford to go spending any more money put it that way. Certainly not on things that didn't bring the money in straight away". The question was put to D, "Okay for you to do on-going maintenance, how much? How can we do it?" We came up with three or four different scenarios of how it could be done on an hourly rate, or on a contract price per month, regardless of the work, or various, we ended up coming up with \$25 an hour to maintain the site. And that is what he is doing now".

In talking about the work D has been doing on the Web site, V says "That is maintenance, but then on top of that he also says, he comes to me and says "look I think we need to completely re-modify this", or whatever, and he is also talking now about almost re-writing the script".

A comment from D the Web designer indicated ideas the business had for changes to the site. "In the new version of the site... we're hoping that we will be able to offer VIP club customers special items, or they will get the update message a week before other people (about 4000 of the 9000 members are VIP club members),...there is no need to be a VIP club member to be able to order things of course, but we want to be able to give the VIP club members something extra. So the plan is that the site will actually know who is a VIP club member and who isn't".

K had given some thought to the resourcing issues involved with maintaining and updating the Web site. "J my sub-editor helps me with the email. The idea is that eventually J will be able to do my job when I am not around, but there is not a lot of point in teaching her how to do the Web site at the moment except for receiving the orders because we are planning to change it".

Changes to the site were described as "It is more being progressive as people have a problem...mentioned something, made a suggestion... changes have gone on then, so

it is not exactly the same as it was when we started, because rather than these changes happening at the beginning it has sort of been more progressive".

Updating material rather than redesigning the site is fairly straightforward. "The site is, I mean it is broken up into sections, fabric ranges, designers, and they are in pages and stuff. They just have to be pulled out of there and everything shuffles up or shuffles down when new stuff is added."

**Key success factor #10 Positive relationship with ISP**

Two comments were made about the ISP used. "Basically we very rarely use them (X), and we just use them for dial up and that is it. We have got the email boxes...we don't use them for the Web". The other was "We have had no problems with them (X), with the exception that whenever their systems go down...". The comments show that there are no problems with the ISP used with minimal contact required.

**Key success factor #15 Consideration of Web site on business effectiveness**

K commented, "To be honest I am not convinced the people we work with fully realise what it is we built them because they aren't Internet users, they haven't been and seen what is out there". Not only does this comment indicate that there is room for improvement in terms of leverage from the benefits of using the Internet for the rest of Organisation H's business but there is a need for greater communication and training of Organisation H staff.

A similar comment was made about their customers in terms of lack of Internet use. "It wouldn't be a very large proportion (of sales via the Web site) at this point... This is a sweeping generalisation that could be taken wrong, but a lot of people who do patchwork and things are people that could be classed as...older that are less likely to use the computers".

Very little thought or any analysis has been given to the impact of the Web site on Organisation H's business effectiveness. One comment that illustrates this is "No, we have never done that exercise (looked at how many orders are coming via phone or fax or email through the site, or people in the shop)... because all the emails and all the orders go on one box for someone to go and do something with". Another comment that showed they were uncertain about the value of orders from the site is "Rather than ordering directly so we can't quantify those but we have never kept a list of them but as far as the people who are actually physically used the Web and gone right to the bottom and clicked on "send the order in", there was over \$8,000 at one stage, probably getting up to \$9-10,000 now". This needs to be seen alongside what is happening with mail order sales to make a useful comparison. "\$40-50,000 a month is what we are doing in mail order, and we have done about say \$10,000 off the Web site...\$1,000 a month I suppose you could say. But it is exponential, it is going like that, it started off with nothing and has just gone like that".

V was asked about customer numbers. "Well, our database (not connected to Web site) has got 10,000 customers on it, not all in NZ, about 3,500 are what we call our VIP

members, ones who have paid their subscription and are getting (Needlecraft News) on a regular basis". "I think ...there are still less than 300 that are actually on the Internet...so it is only about 10%".

The customer numbers and value of sales illustrate that the business is not taking the majority of orders via the Internet. As seen in interview comments under success factor #2 (Development of an integrated Internet presence), the business has yet to gain some leverage by linking their Web site to other business systems such as their customer database software and accounting system.

The volume of enquiries on the Web site has led to another person being employed by the business. "I have just recently got an assistant...it is wonderful for me because the job, we have created a monster, we actually didn't think we would get as much response at once as we have, and it is coming from all over the world. I mean we are sending things back to America, to Columbia and Philippines and all sorts of places that are finding us on the Internet".

One way that the Web site has saved the business money is by reducing the amount of travel necessary to find new stock. "Twice a year in America...they have a great...quilt market...and all the people from around the States and around the world go ... then in the meantime more things come out, so ... we sat down at the computer and we called up as many ranges that we have been told "you can order these they are coming", that we find so we said "we like" and "we like" and "we like that piece and that piece but we don't want that one", and we sent off our order, so that is certainly good for us, being on the other side of the world from our suppliers".

#### **Key success factor #18 Organisational culture responsive to change**

A couple of comments made show the Internet has had a minimal impact on the organisation's culture. "No (there haven't been other people who have worked with us a lot), we have asked for ideas and things like that, K just did it recently, with fabric ordering, um, they all gathered around the computer and just went bouncing round the sites looking at different types of fabric and said "that's nice"". The second comment was "I don't think they (other staff) don't really have a clue (about the Web site)...they know that we have it, and they know we get orders and K and D deal with it."

### **16.6 Summary**

The particular strengths of Organisation H in terms of success factors were their relationship with their ISP, having a secure server and using electronic commerce. They had neither an Internet policy nor an intranet. The Web site was seen as an additional channel rather than being an integrated part of the business and comments revealed manual order and processing systems running alongside online processes. As a result the organisational culture was slow to change although it wasn't negative towards the site. This aspect is also reflected in comments and observations related to success factor two, development of an integrated Internet presence.

## **17 Organisation I case study**

### **17.1 Introduction**

This chapter will look at the use of Internet within the retail trade sector (G). Organisation I forms the focus of the ninth case study.

This chapter follows a similar format to the preceding ones. It looks at the background to the Organisation I case study and outlines the method employed for investigating the case. The results and discussion sections are next with the summary drawn from the case concluding the chapter.

### **17.2 Background**

Organisation I has three staff and exports to 55 countries. The organisation uses 14 agents to sell protective hockey gear to goalies. They are based in Palmerston North and are already a market leader, with annual sales totalling nearly \$3 million. The current site's main role is to provide information and reduce risk. Sales are taken via the Web site except in 15 countries where the company uses agents to sell their products. One third of their market is in Europe, where they have 60 per cent market share in some countries. Organisation I went into manufacturing in 1992 and eight years later the gold, silver and bronze medal teams at the Sydney Olympics were wearing their gear.

The Web site was implemented in 1997 and the design, operation and maintenance is very low cost. The content and maintenance is currently contracted out with a student earning 25 per cent commission on sales from the site. Their Web presence allows the company to reach a much wider audience than that previously served by agents. Their products are niche items but the 100,000 goalies in 120 countries around the world can be reached by the company directly through their Web site.

### **17.3 Survey implementation**

The method used has been described in the methodology chapter with the particular approach to Organisation B described here.

Organisation I was contacted through local publicity and contacts. The first interview was conducted on 21 September 1998 with SB (owner) and one with SL (Webmaster) was arranged for 11 December 1998. Further contact was by phone and email with SL and a couple more face to face interviews with SB.

Both spoke fairly openly in response to questions about Organisation I, Internet sales, marketing and hockey issues.

## **17.4 Results**

This section will detail the results under three headings: getting online; human issues and communication aspects; and looking back. The format is as outlined in the preceding eight cases.

## **17.5 Discussion**

This section will analyse interview material from the results section under the success factor headings.

### **Getting online**

The first cluster of questions examined motivations for getting an Internet presence, planning, designing and launching the site.

#### **Key success factor #1 Plan for the organisation's Web site**

SB made an interesting comment about the Web site. "In hindsight, if you believe that we are superior in product development...the answer should be that no, we shouldn't lead the industry in the advertising or the selling medium, which is what it is, then that probably shouldn't have been the rational response (going ahead with the Web site), We should have spent the money in product development, however I was assured that it wasn't a big effort which was wrong- it has been an enormous effort- it has changed the company to a degree in some ways positively and in some ways negatively. Perhaps we shouldn't have done that but we did."

"... (Having said we are strong on product), a Consumer Tech student (SL) volunteered to set up a Web site and it seemed fashionable and he said, "this won't cost anything". He wrote a proposal. Largely he was right but anything takes lots of effort".

SL commented on the need to plan some of the site's design features. "A front page that downloads rapidly is a must, and although presentation is important, visitors are more likely to be impressed by the information on the site rather than any particular design features".

One of the design themes was that "The aim is for the youthfulness of the brand and the excitement of the image to be portrayed through the lively action-oriented site, the way the information is presented and the vibrant colour used on the protective hockey goalie gear".

The planning for the site appears to have been left largely to SL although SB had some strong ideas on marketing the site (see success factor #8).

#### **Key success factor #2 Development of an integrated Internet package**

The Web site has been kept separate from other parts of the business. "This (orders via the Web site) is separate from handling orders that come primarily through the agents

or in ways other than through the Web site. Someone else handles these so the channels are kept separate."

One of the reasons why the site is treated differently from the rest of the business was described by SB. "One of the problems is that if we go hard after the markets where the big numbers exist-Holland, England, Australia- then we are in direct conflict with our distribution channel. Gaining and maintaining the confidence of distribution channels is probably the key thing in international business".

SL thought, "Email databases appear to be one of the best features of an integrated Internet presence. With an email database, customers can be contacted relatively regularly, at a very low cost. Email databases also allow customers to be "tagged" with their movement round a Web site to be closely monitored."

SL commented that he thought Web site was not organisation I's favoured term. "We don't really like the term "Web site". The Web site is a vehicle for the "Internet presence"- a total approach to selling through the Net, where email is probably more important than the Web site, and the total package relies on a large number of components, not just the Web site".

#### **Key success factor #4 Support from top management**

SB said "The Web site is quite a small part of Organisation I and I could do without it quite happily and we wouldn't lose much and sometimes I think we would gain quite a lot because it is quite diverting". The amount of sales from the site is quite respectable but SB sees the amount made as a very small component of the total sales of organisation I.

#### **Key success factor #12 Secure server**

SL said, "there is a secure payment system in place" when asked about security for the Web site. No further details were forthcoming.

#### **Key success factor #13 Importance of a project champion**

SL is the project champion and has driven the entire project with assistance given by SB on request. "A Consumer Tech student (SL) volunteered to set up a Web site and it seemed fashionable and he said, "this won't cost anything". He wrote a proposal. Largely he was right but anything takes lots of effort".

#### **Key success factor #14 Being aware of the competition**

Owner SB said, "I don't have a lot of spare time and that (keeping an eye on competitors' sites) is quite unimportant in a way. I keep saying that and I don't mean to be flippant but the focus of the company is on making better products and this for me (Web site) is quite unimportant and I don't really care what goes on here very much".

SL has kept more of a watching brief on the competition. "Initially when we came online we were the first ones doing hockey and we captured the market. Now the

people who are adding to the Net, not many are goalkeepers. Now more people are coming onstream there isn't the big backlog".

**Key success factor #16 Use of outside expertise**

SB described the way the Web site uses outside expertise. "The Web site is run on the basis of the percentage of sales that the person running the Web site achieves. That is subcontracted as well- he runs the Web site, services the orders, we do the packing and the money side and the collection of the money but the chappie does all the getting of the orders and the processing of them. The person running the Web site is a capable person and knows a lot about the business".

Later this changed and "There has been a change in Webmaster with M (who works in the factory) now responsible for the task. He has a much better overview of the business as he is on the spot (rather than living in Hawkes Bay)."

Financial assistance has been provided for the business. "Organisation I has received financial assistance from the BDB (Business Development Board) to help it develop products and its markets".

One extremely popular aspect of the site is the access to top players. "Visitors to the Web site are able to email leading goalies and ask advice on both the game and the gear. There are 30 sponsored players who are provided with Organisation I gear in exchange for being available to both potential and existing Organisation I customers through email. This means that customers can ask top players about Organisation I's products and how well they perform in both the top international competitions as well as for club games".

The Web site uses hockey experts. "We email out to about 900-1000 people bi-weekly, who have the ability to ask an expert about the game and the equipment, join a database, link to other hockey sites and seek readers' opinions."

Organisation I benefits from customers' comments and their expertise. "One option available on site is to join a customer database ensuring regular updates and developments via email. Organisation I uses 20 chosen participants to form focus groups to comment on various product related topics that are then used for product direction and development".

**Key success factor #19 Electronic commerce**

Some of the figures relating to the Web site are, "The average sale via the Web site is \$685" and "We've sold around \$70,000 a year off it (Web site)."

The average sale from the Web site is \$1000. "The repeat purchases we get off the Web aren't that great either. But that might be that our gear lasts well so I haven't really tracked down why we aren't getting a lot of repeat purchases off the Web".

Careful thought has been given to serving a range of markets via the Web site. "For minor markets eg China, Hong Kong, Iceland, parts of US, Singapore, Netherlands, Trinidad and Tobago- there's about 120 countries play hockey in the world and we only sell via an agent in 15 and another 11 (are) handled out of Europe so there's a lot of other opportunities where hockey is a very small part and its not worth going in there (with an agent). The problem with India and Pakistan is that there are very high tariffs and import barriers so we can't actually make a sale very easily even via the Internet as they can catch you on the way in and \$500US for duty and it gets pretty dear".

One of the early issues the organisation needed to resolve was the channel conflict of the Web site with the organisation's agents. "A major problem is that the distributor in Australia and England doesn't like the Web site and the retailer saw it as a very threatening thing- they saw it as we were all out to grab their sales. Prices are more expensive off the site than through the agents though so prices are kept high not to jeopardise the retail sale. So they (agents and retailers) didn't see they were getting all this extra support so people could shop around and get all the information they need on the Web before going and making the sale at the retailer- they didn't seem to be able to make that connection. And I think that is very real- that's the way the purchase process goes. They get a lot of information awareness, confidence about the product and the brand and then they go in for the concrete confirmation of that when they physically hold the product at their local retailer. So there's a real conflict there-if we go hard after the markets where the big numbers exist-Holland, England, Australia- then we are in direct conflict with our distribution channel and gaining and maintaining the confidence of distribution channels is probably the key thing in international business. It takes a long time to get to that point and when you have done, then you've got something really valuable but you can dissipate that quite quickly as well if you start gnawing away at their activities and providing cheaper product for instance then you are in trouble- they will say they would rather sell the opposition."

Risk reduction for sales is a key part of the business. "Care has been taken to reduce the risk of purchasing products from Organisation I's Web site for new and existing customers by ensuring secure payment systems, a money back guarantee, full contact details, the provision of an information-rich site and online discussion of Organisation I's products".

Electronic commerce is not seen as the sole benefit of the site. "The sales through the Web site account for about 6-7 percent of turnover, which is a small amount relative to the amount of energy that goes into it. There are other benefits that we gain from it."

"Theoretically it (sales off the Web site) will get to the 20% of business that gives 80% of the results but I have my doubts. The Internet is good for getting information and some people seem really happy to buy off it but I think there is terrible inertia both within people and within the distribution channel... There is a shop down the road that you know about, that speaks your language, who you trust because they have the same

accent as you even if you have to drive for two hours to get there. You can look at the thing, you can check it...there's a high risk here- these (Organisation I gear) are not Levi jeans that you know you can walk into a shop and just grab a pair and if you do it 1000 times, chances are 999 times you are going to get exactly the same product and if you have them on your hips, you can order them through the Web site. Same with a book or CD- no problem. But I think this is a different type of product- if you try it on you might see that you like orange more because it matches your hair colour than you like the black but you don't have that ability through the Web and you never will do. "Prices are more expensive off the site than through the agents though so prices are kept high not to jeopardise the retail sale".

SB says, "We are not really in the business of simply providing brand support, but direct sales...A good number of agents are now online so they handle purchases via email also and I attribute the success of the presence to the direct sales focus...The direct sales focus lead to some design changes and additions to the Web site, as well as Internet promotion that we probably would not have done otherwise".

### **Human issues and communication aspects**

The second cluster of questions in the case study examined aspects relating to the internal and external communication for the organisation, training, Internet and electronic mail policy and related issues. Aspects of customer reaction and support issues are covered in this section also.

### **Key success factor #3 Site part of overall communications strategy**

As previously noted under success factor #8, visitors to the Web site are able to email leading goalies and ask advice on both the game and the gear. "There are 30 sponsored players who are provided with Organisation I gear in exchange for being available to both potential and existing Organisation I customers through email. This means that customers can ask top players about Organisation I's products and how well they perform in both the top international competitions as well as for club games".

The site is primarily information based rather than sales based (even though \$60,000 has been made in sales from Organisation I's Web site in less than 12 months).

"The Web site provides a wealth of information to potential buyers in addition to serving a sponsorship and research function".

Comments from customers are an extremely valuable part about of the organisation's strategy. "We use the Web site as a tool for research and development quite successfully through focus groups...the focus group were reasonably carefully selected off the database, given the brief and asked to respond...we have done this several times now and circulated the responses by email. This meant they could modify their opinions on the second round, we'd draw their conclusions together, publicise them by email to the group and ask for final comments on the final summary. After this we wrote the product brief for the show. This cost us almost nothing to do and isolates the problems and opportunities quite nicely."

Consideration has been given to the information available on the Web site and in paper form. "The paper brochure doesn't give as much information as the Web site as it is intended to show people there is quite a good range under the Organisation I banner".

"A goalkeeper... fully equipped in Organisation I can spend about \$2000 so it is a very risky product category- it is risky in terms of price, you put yourself on the line so it is risky if it is bad gear, risky in terms of image- if people perceive that you are playing in something that is not good, then there is a social risk involved. Information reduces risk and to reduce risk there is a lot of information on the Web site... we give information all the time. The brochure... doesn't give much information- this is largely a range coverage medium so people can see there is quite a good range under the Organisation I banner."

The content of the Web site includes "listings of families of products, new products, comments from players. (It is a) very information and communication oriented site- we want your opinion about things...so seeking information, not just presenting it".

Although the Web site seems to offer rather a lot of communication benefits, SB is more pessimistic. "I think we'd have enough mechanisms in place through the retailers and through our sponsored goal keepers to provide us with this information (feedback from use of the equipment if Organisation I didn't have a Web site). With the Web we have three or four times the number of sponsored goalkeepers. Now that has been quite a use of resources and it counters the use of resources in product development".

**Key success factor #5 Internet training given and updated**

No Internet training has been given to the three members of organisation I. "Because the Web site is so small a part of Organisation I, one person basically handles it".

**Key success factor #6 Plan for dealing with site related communication**

A contingency plan is in place for despatching orders. "Organisation I pays all freight costs on orders and delivery is by courier. There are no extra charges for this and it ensures players get their new gear promptly and in top condition. Orders not dispatched within five days get a free Organisation I tee shirt as a sign of the company's prompt service commitment".

SL considers "supporting the Web site includes all promotional and nurturing endeavours, regularly upgrading it, measuring visitor volume and analysing visitor behaviour".

**Key success factor #7 Formal Internet policy**

Organisation I has one person who deals with the Web site and "We have no need for one (Internet policy) with the nature of the Web site".

**Key success factor #8 Consideration of site's marketing aspects**

SL marketed the organisation's Web site in several ways. "We (Organisation I) paid for a banner ad on three hockey link sites. Information about Organisation I's Web site was placed with several search engines".

The Web site provides greater coverage than previously possible. "The Web site allows Organisation I to service a much wider market than could be achieved just by agents. The Internet presence has allowed for the opening up of new markets, which has increased sales without them coming directly. We have set up several agents through the Net".

In addition to reaching a wider market, "Organisation I decided to use the Internet as a new marketing and selling platform. This is a continuation of the company's desire for continuous improvement and embracing positive change. The Web site is part of the promotion plan and the branding is consistent across print and electronic media. We have a direct sales focus. The Web site is not entertainment or information based- we made a philosophical decision to make direct sales as that would force us to meet the demands of consumers, rather than just providing information for the agents. This focus has caused us to be very proactive and much more proactive (than) if we had been interested only in information".

"The Net has also been very useful for attacking the UK market, identifying goalies to sponsor and getting gear to them before we attacked the market, as well as providing good email support, building up good momentum before the season started. This has given the UK market a huge boost".

Several marketing techniques have been used with the Web site. "The Internet, especially newsgroups, email lists and email databases offer the opportunity to actively promote a Web site. Each of these activities requires slightly different techniques, but allow for the active and ongoing promotions of the site. We publicise it through some links pages but we also publicise it in the brochures and when products go out the door, they go out with one or two of these stickers".

**Key success factor #11 Intranet in place**

There is no need for Organisation I to have an intranet with only three employees.

**Key success factor #17 Meeting customer demand**

The Web site has been designed to meet customer demand. "We have a direct sales focus. The Web site is not entertainment or information based- we made a philosophical decision to make direct sales as that would force us to meet the demands of consumers, rather than just providing information for the agents. This focus has caused us to be very proactive and much more proactive (than) if we had been interested only in information".

Initially the Web site threatened agents. "They (agents and retailers) didn't see they were getting all this extra support so people could shop around and get all the

information they need on the Web before going and making the sale at the retailer- they didn't seem to be able to make that connection. And I think that is very real- that's the way the purchase process goes. They get a lot of information awareness, confidence about the product and the brand and then they go in for the concrete confirmation of that when they physically hold the product at their local retailer. The Web site has added to the agent/retail distribution channel to reach markets not currently served by Organisation I's existing agent network".

Access to top players has meant interest in the site by less experienced players. "Visitors to the Web site are able to email leading goalies and ask advice on both the game and the gear. There are 30 sponsored players who are provided with Organisation I gear in exchange for being available to both potential and existing Organisation I customers through email. This means that customers can ask top players about Organisation I's products and how well they perform in both the top international competitions as well as for club games".

### **Looking back**

The third and final cluster of questions were designed to get participants to evaluate the process of putting their organisation online. Areas explored were aspects they were pleased with and proud of, unhappy and dissatisfied with, their future plans, any remaining issues that required resolving, what they would do differently with the benefit of hindsight and the role of their ISP in the project.

### **Key success factor #9 Updating and refocusing of home page**

SL talked about ways visitors to the site can be analysed in terms of the time they spend on site. "Tracking visitors' movement through a site using a statistical package like 'Getstats' or 'Statsbot' allows a site maintainer to understand how they (visitors) behave within a Web site. Understanding visitors' behaviour enables the site to be adjusted to the organisation's best advantage- manipulating visitor traffic to high profit areas and maintaining an item's page position to ensure that high profit items receive the maximum amount of visitor traffic possible. Over time, careful analysis of statistics give a site maintainer an insight into the way visitors behave, and by altering the design of the page, their movement can be manipulated round the site".

The Web site offers extra information in terms of product design. "One thing we have on the site is (a rotating gif of a hockey boot showing 3D shaping) something you can't tell from a brochure. As long as it proves something in terms of product then that's OK- if you take the philosophy of being strong in terms of product onto the Web site- this Web site is a working Web site loaded with product information. What we don't want is a flashy Web site in terms of music..."

### **Key success factor #10 Positive relationship with ISP**

SB was not aware of any issues with organisation I's ISP. "SL deals with that (the ISP)- I don't think there have been any problems".

### **Key success factor #15 Consideration of Web site on business effectiveness**

SB's comment about the Web site reflects his preference to focus on other aspects of the business. "I think we are kind of stuffed now (with the Web site)- we can't withdraw from it. We haven't got much choice- if we withdrew from the Web now, I say that we would give up quite a bit of image cos there is a benefit in image that we have, people would lose faith, people would say, "What are Organisation I doing? They have lost their cutting edge, they have lost their innovation, they are withdrawing from the Web as everyone else is climbing on". I think it would reflect quite badly on the brand as a whole though I think for the company it would be quite a gain as...it would target energy back on other things and the form of the business might change. The Web site has been an enormous effort".

Another comments from SB was, "The focus of the company is on making better products and this for me (Web site) is quite unimportant and I don't really care what goes on here very much. The person who runs it is a capable person and understands a lot about the business so its fine, I don't really worry about what he puts here because it is unimportant. And you might say that's a poor attitude of business- that everything matters, well that's not the way I view things because I don't think everything does matter to the same degree. The 80/20 rule tells us that 80% of your responses come from 20% of your inputs. So what I try to concentrate on as a person or as a company is really making the most of the 20% that really matters and this (Web site) is not part of the 20% that matters so I don't bother much".

Some figures were available from examining the site statistics. "The average sale via the Web site is \$685, there have been 11,000 unique host visits, people are looking at about seven pages per visit and there were 380 visits in a recent week. We have had about 90,000 visitors to the site in the last 16-17 months so for a specialised company selling only field hockey goal keeping gear that's a reasonable amount".

When considering the effectiveness of the Web site, thought was given to the effect on the organisation's agents. "One of the problems is that if we go hard after the markets where the big numbers exist-Holland, England, Australia- then we are in direct conflict with our distribution channel. Gaining and maintaining the confidence of distribution channels is probably the key thing in international business. The way Organisation I works is dealing with agents in each country. We have agents in NZ because I don't want customers in this country bothering me while I'm designing products or day to day activities that are important. The trade-off in diversion is too great. We have agents in...NZ, Australia, Malaysia, Singapore, Japan, Argentina, Chile, Unites States, Canada, England, Ireland, Scotland, South Africa, Holland (Europe). It (the Web site) is growing more slowly than our distributors are growing. It doesn't seem to be growing that fast partly because we got rid of some of the markets back to the agents because they have got quite cross about us making sales".

Comments were made about ways the Web site had helped with marketing. "The Net has also been very useful for attacking the UK market, identifying goalies to sponsor and getting gear to them before we attacked the market, as well as providing good

email support, building up good momentum before the season started. This has given the UK market a huge boost. The Internet presence has allowed for the opening up of new markets, which has increased sales without them coming directly. We have set up several agents through the Net”.

The Web site has had a dramatic effect on the customer base. “We have essentially 15 customers in the world (agents who sell our products in various countries) and now with the Web site we have another 100,000 or something. You can imagine the company that is set up to deal with 15 customers is quite different to the one that sells to 100,000 people.”

“Initially when we came online we were the first ones doing hockey and we captured the market. Now the people who are adding to the Net, not many are goalkeepers. Now more people are coming on-stream there isn’t the big backlog”.

#### **Key success factor #18 Organisational culture responsive to change**

The Web site is one example of the organisation’s innovation. “Organisation I decided to use the Internet as a new marketing and selling platform. This is a continuation of the company’s desire for continuous improvement and embracing positive change”. They received a Manawatu Business Award in 1993 for Innovative Business of the Year.

The organisation has needed to make changes on the basis of the customers growing exponentially. “We have essentially 15 customers in the world (agents who sell our products in various countries) and now with the Web site we have another 100,000 or something. You can imagine the company that is set up to deal with 15 customers is quite different to the one that sells to 100,000 people.”

The organisation’s form and structure have also been altered as a result of the Web site. “There are other benefits that we gain from it (other than sales from the Web site). It has changed the company’s form and structure quite a lot, which indicates that it might not be such a good idea”.

### **17.6 Summary**

Organisation I had many successful initiatives and there was strong evidence of good business strategy underlying many of their business decisions. While the Web site was operating successfully in terms of visitors, orders and sales generated, Organisation I’s owner thought the energy involved with the site had detracted from the rest of the business. In addition to performing well on the electronic commerce success factor, their positive relationship with the ISP and a strong project champion were evident.

## **18 Results and Analysis of Case Studies**

### **18.1 Introduction**

This chapter follows the previous material on the nine organisations that formed the case studies. On the basis of the findings of these individual cases, an analysis and discussion of the success factor results follows. The use of principal component analysis is explained, spider (or radial) plots are produced, the results discussed and a dendrogram shown.

### **18.2 Methodology**

Nine organisations were selected for study in greater depth by examining the process they went through when getting an Internet presence. They were chosen for several reasons. One was that the paper and email questionnaires completed earlier in the research had shown some interesting responses. Another reason was that they had indicated interest in the research and were willing to provide the level of involvement the case study research required.

Various forms of contact were made with the case study organisations. Visits were made to physical premises, phone calls were made, Web sites were visited on a number of occasions, observations were made, emails were sent to key people involved with various parts of the operation and email lists were joined where appropriate.

A list of questions was compiled to ask case study participants. The majority of these questions were to explore in greater depth issues that were asked in the questionnaires sent by paper and email. The case studies were to enable issues to be clarified and the interviewer's assumptions to be either confirmed or denied. Once selected, the questions were grouped into themes and then a logical order of themes devised.

What actually happened was that one question asked would often be answered encompassing a variety of themes. Follow-up questions were then asked which often meant the question order changed from what was originally planned. This order made more sense to the respondents however, rather than the one to be artificially imposed by the interviewer.

Interviews were conducted with management, marketing, IT, human resource and communication staff and other members of the Web site design team as appropriate. A list of success factors was developed and transcribed interview comments made by members of each organisation were coded on a five point Likert scale (1= very good to 5= very poor) for each success factor. The demarcations for each factor were refined during the process and are based on both the practical observations and comments from the interview transcripts. All organisations were reassessed for their score on each success factor prior to statistical analysis and interpretation. Some factors did not apply to all organisations (such as #11 Intranet in place).

### **18.3 Ratings for success factors**

The following criteria were used to establish the ratings for the success factors.

#### **1 Plan for the organisation's Web site**

- 1 Key players/positions in organisation on web development team, very clear strategic goals for site, extensive planning and consultation with those inside and outside the organisation, resources allocated for site development, ability to reflect on process
- 2 One/ some of key players on team, clear goals for site, some planning and consultation, some resources available
- 3 Some aims for site, rough plan, minimal resources
- 4 Ad-hoc development by IT/marketing people only, no idea what reaction expected, no consultation with others in organisation, no resources
- 5 No plan at all, ad-hoc development, no consultation, no resources, "quick and dirty" job done

#### **2 Development of an integrated Internet presence**

- 1 Internet linked to databases, ordering systems, email, customer service, marketing functions etc of business
- 2 Some links from Internet to databases and email
- 3 Few/occasional links from Internet to other functions
- 4 Very few connections between Internet and other functions in the organisation
- 5 Internet entirely standalone from other functions in the organisation

#### **3 Web site part of overall communications strategy**

- 1 Web site written into organisation's communication plan, extensive use of Web site for communication with identified target groups, decision made on duplication/substitution/reduction of existing communication material in organisation on Web site
- 2 Good efforts to use Web site to communicate with new and existing customers, some evidence of thought behind actions
- 3 Some efforts to use Web site to communicate with new and existing customers
- 4 Adhoc links between organisational communication and the Web site
- 5 No connection between Web site and existing communication within the organisation

#### **4 Support from top management**

- 1 Top management gives tangible resources (time and money) and involved in some planning, endorses project verbally when talking to others
- 2 Verbal support from top management to project team, resources given when asked and reasonable request
- 3 Verbal support but less financial support/resourcing
- 4 Lip service from top management with no/little understanding of content, use or benefit
- 5 Management against Web site, Web site exists despite top management

## **5 Internet training given and updated**

- 1 All employees aware of organisation's Web site and current contents, employees trained on how to search the Internet.
- 2 Most employees aware of organisation's Web site and some training on how to search the Internet.
- 3 Staff know they have a Web site and general idea of contents, some ad hoc training on Internet searching.
- 4 Most staff haven't looked at Web site, lack of training on Internet searching.
- 5 Employees unaware of Web site and even less so of contents, no training on Internet searching, negative consequences evident.

## **6 Plan for dealing with site related communication**

- 1 Innovative system to deal with Web site communication, may include personalised responses driven by database, prompt responses from designated staff
- 2 System for dealing with email from site working well with prompt and helpful responses
- 3 Some systems and designated people in place to deal with Web site communication, works to a satisfactorily standard, no follow up system
- 4 Limited success in dealing with Web site communication, ad-hoc approach, customer dissatisfaction
- 5 Haphazard approach to dealing with email from Web site, tardy approach, strong **customer (potential, actual or ex) dissatisfaction**

## **7 Formal Internet policy**

- 1 Organisation has a written policy on Internet and email use, all employees aware of where it is and what the contents are
- 2 Written policy on email and Internet use though not widespread awareness of contents.
- 3 Verbal policy or understanding on email and Internet use with staff uncertain about contents.
- 4 No email and Internet policies in organisation.
- 5 No email and Internet policies in organisation, negative consequences have resulted

## **8 Consideration of site's marketing aspects**

- 1 Clear thought given to role of Web site in organisation's marketing plan, site proactively used, organisation knows whether target demographics online
- 2 Some awareness of online audience and a marketing plan
- 3 Thinking about how to use the Web site for marketing, some initial efforts
- 4 Marketing opportunities missed, unsure about target audience
- 5 Site not used for marketing, works against marketing program

## **9 Updating and refocusing of home page**

- 1 Content and layout altered as a result of customer research and feedback. Updates made or to be made as focus of site changes from providing information to e-commerce etc. Evidence of purpose behind changes.
- 2 Some changes made to site on regular basis.

- 3 Cosmetic changes, revision of Web site purpose not undertaken
- 4 Irregular updates, minor changes (inappropriate)
- 5 Material outdated and incorrect

#### **10 Positive relationship with ISP**

- 1 No problems with ISP- either very helpful and prompt and cost-efficient and providing services required, or minimal contact required.
- 2 Good service provided
- 3 Satisfactory
- 4 Dissatisfaction of some kind
- 5 Many problems- cost, time delays, services unavailable or inappropriate for the organisation's needs

#### **11 Intranet in place**

- 1 Intranet well planned and in place with lots of features, used throughout organisation
- 2 Intranet in place with several features and used by some of the organisation
- 3 Some basic Intranet features used by a few people
- 4 Problems with Intranet
- 5 Intranet working poorly or incompletely or no Intranet or no plan for one

#### **12 Secure server**

- 1 Action taken on site security, evidence of research and planning
- 2 Site security in place after limited research and planning
- 3 Thought given to Web site security but no action taken
- 4 Minimal thought and action given to Web site security
- 5 No attention to Web site security, may include negative consequences

#### **13 Importance of a project champion**

- 1 Project champion very supportive and encouraging
- 2 Project champion supportive and encouraging
- 3 No project champion but neutral effect
- 4 No project champion and one would be useful
- 5 No project champion, may have a detractor to contend with

#### **14 Being aware of the online competition**

- 1 Regularly monitoring the competition, may have done some benchmarking, may include first mover advantage
- 2 Have monitored one or two key competitors' Web sites on an occasional basis
- 3 Has heard about competitors' online efforts, may or may not have visited the sites
- 4 Unaware of the competition
- 5 Disinterested in the competition and dismissive of others' efforts when told about them

#### **15 Consideration of Web site on business effectiveness**

- 1 Can track effect that Web site is having on the business by monitoring trends and assessing effectiveness against other forms of advertising or marketing or selling or

communication within the business

2 Simple system to measure Web site effectiveness in one or more areas of the business

3 Some idea of effect of Web site on the business

4 Guessing what effect Web site is having on the business

5 No idea whether the Web site is having an impact on the business

#### **16 Use of outside expertise**

1 Excellent, just what was required, extremely useful

2 Very helpful

3 Gave some ideas, helpful in parts

4 Negative experience

5 Very negative experience, of no help whatsoever, an expense and a distraction

#### **17 Meeting customer demand**

1 Very responsive to customer demand, proactive in seeking customers' needs

2 Responsive to demand

3 Respond to customer demands when told of them if demands are easy to implement in terms of time and expense

4 Token acceptance of customer demands, unsure of customer demands

5 Complete lack of interest in customers, let alone any needs or wants they have

#### **18 Organisational culture responsive to change**

1 Fast changing culture in response to outside events

2 Some shifts in thinking and attitudes evident

3 A change in culture

4 No change

5 Resistance to change, no change for a significant time, culture inherited or

**inappropriate**

#### **19 Electronic commerce**

1 Plan for electronic commerce, making money from Web site

2 Taking transactions through Web site, yet to make a profit from Web site

3 Considered site for electronic commerce and decided inappropriate either now or in future or currently working on it

4 Haven't considered use of site for electronic commerce

5 Rejection of site for electronic commerce without research

### ***18.4 Analysis of success factors methodology***

The objective of the analysis was to determine which of the nineteen factors had the strongest determinant of success for organisations using the Internet. Another objective was to determine whether two or more success factors were related.

Extracts from the case study conversations were entered into a comment table from each case and rated from one (excellent) to five (poor) according to predetermined

criteria. The "Ratings for success factors" states these. High scores (ie 4 and 5) represent poor performance on that particular variable with low scores (ie 1 and 2) representing superior performance on the variable. Individual comment scores were copied with the relevant success factors from the comment table to an Excel spreadsheet. A pivot table was constructed to summarise the responses. The average and count for each variable was obtained.

Next, principal component analysis was used on the means because it summarises multi-dimensional data. The averaged scores on each of the nineteen success factors for the nine case studies were entered into Minitab. The first principal component accounts for 44% of the variation, the second principal component accounts for 22% of the variation and the third principal component, 14% of the variation. The nine organisations fall into four clusters as follows:

1. Organisation A, Organisation D, Organisation I
2. Organisation F, Organisation E, Organisation C, Organisation H
3. Organisation G
4. Organisation B

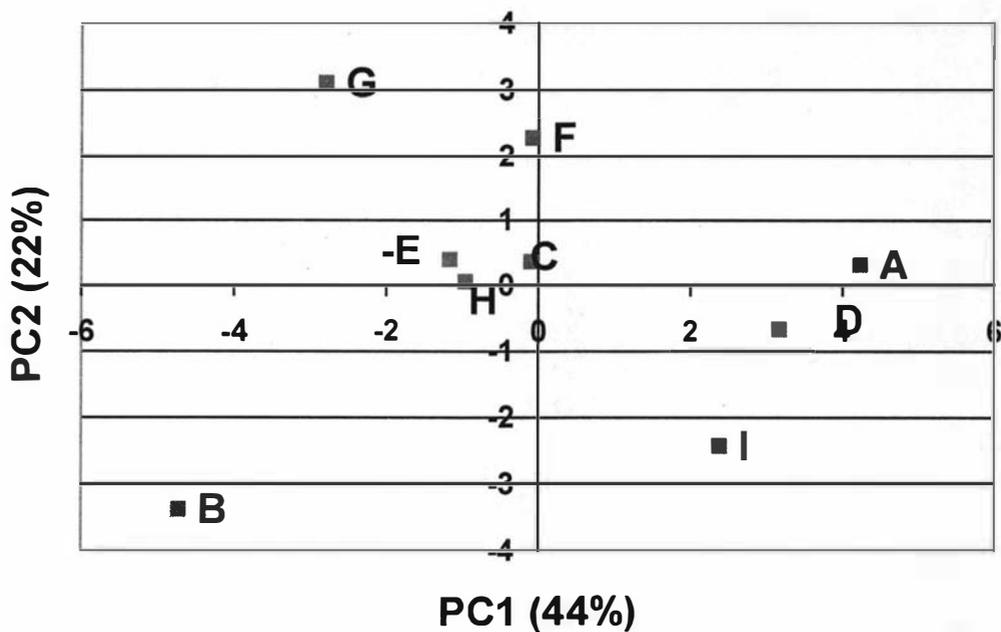
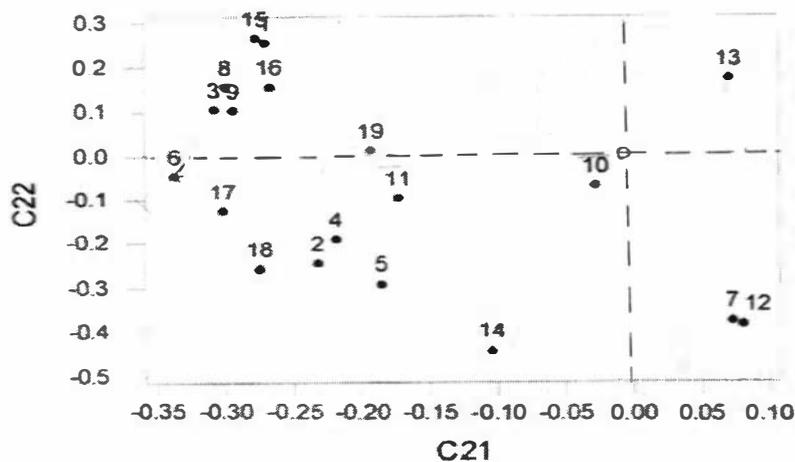


Figure 18.4.1 Principal Component Map

## 18.5 Results

The scoring scheme used gave high numeric scores to organisations that performed poorly. Cluster one had a tendency to score poorly on variables 13 (Importance of a project champion), 7 (Formal Internet policy) and 12 (Secure server). Cluster two were moderately weak on all variables, cluster three were moderately weak on variables 15 (Consideration of Web site on business effectiveness), 1 (Plan for the organisation's Web site), 16 (Use of outside expertise), 8 (Consideration of site's marketing aspects), 3 (Web site of overall communication strategy) and 9 (Updating and refocusing of home page). Cluster four was poor mainly in 2 (Development of an integrated Internet presence), 18 (Organisational culture responsive to change), 4 (Support for top management) and 5 (Internet training given and updated).

An examination of the vectors in principal component one revealed the strongest variables (ie those that were the longest lines) in descending order of importance were:  
#6 Plan for dealing with site related communication  
#17 Meeting customer demand  
#3 Web site part of overall communications strategy  
#8 Consideration of site's marketing aspects  
#9 Updating and refocusing of home page



**Figure 18.5 Principal Components Diagram**

It is interesting to observe that this cluster of related variables are not only the human factors rather than the technical aspects, but are more specifically, to do with communication and customer service.

The weakest variables were 10 (Positive relationship with ISP), 7 (Formal Internet policy), 12 (Secure server) and 13 (Importance of a project champion). This indicates

that whether the organisation has a positive, negative or neutral experience with their ISP, it has no discernable effect on their overall success on the Internet. The presence or lack of an organisational Internet policy and a secure server likewise seems to have little bearing on their online success.

### 18.5.1 Spider or radar plots

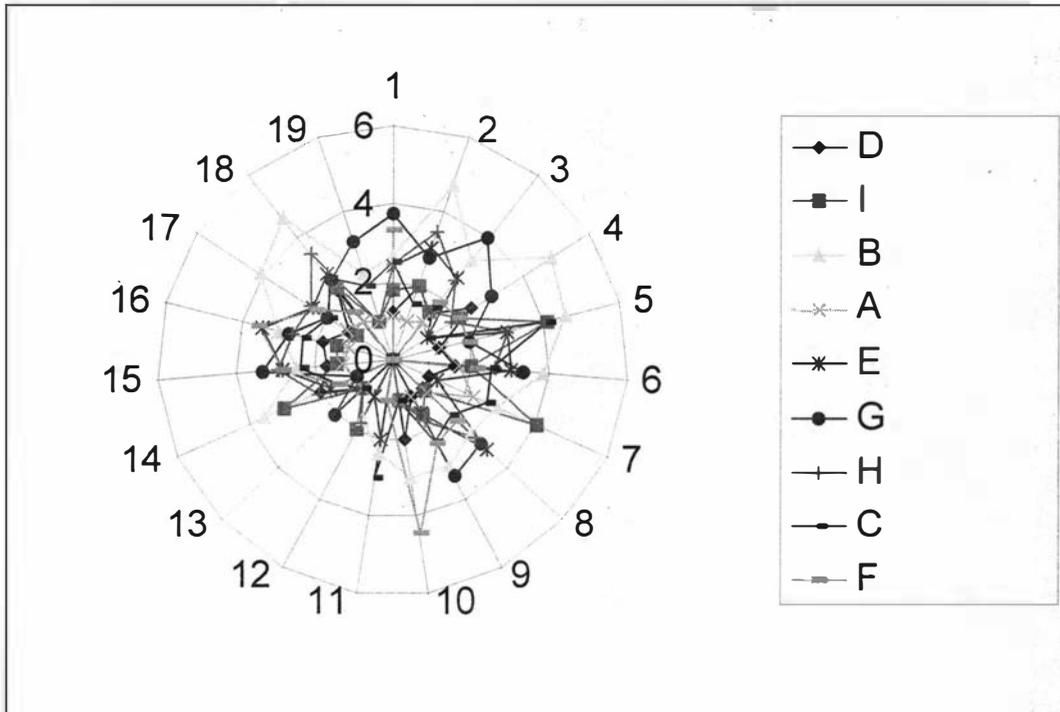
A spider plot was used to plot the averages for each of the nineteen success factors for each organisation. Nine different ones were constructed, ie one for each case study. If there were no comments within the transcript relating to a particular success factor, then no average was available. There is a possibility of bias because the researcher has scored all nineteen dimensions for each of the nine organisations according to a particular point of view, which is from a sociological rather than a technical perspective. This may have impacted on the scores.

The pivot table is:

	Orgn A	Orgn B	Orgn C	Orgn D	Orgn E	Orgn F	Orgn G	Orgn H	Orgn I
Factor 1	1.12	2.63	2.5	1.24	2.37	3.33	3.69	2.42	1.77
Factor 2	1	4.66	1.5	2	3	0	2.75	3.45	2
Factor 3	1.2	3.18	1.68	1.47	2.64	1.9	3.9	2.57	1.5
Factor 4	1	4.8	1	2.37	1	2	3	1.8	2
Factor 5	1.25	4.5	4	1.2	3	2	2	3	4
Factor 6	1.66	3.83	2.5	1.6	3	2.16	3.28	2.6	2
Factor 7	2.25	2.88	2.6	1	1.2	0	0	0	4
Factor 8	1.16	2.72	2	1.05	3.25	2.25	3.07	2.86	1.11
Factor 9	1	3	2.3	1	1.5	2.37	3.33	1.75	1.6
Factor 10	1	3	1	2	0	4.42	0	1	1
Factor 11	0	2.37	3	0	2	1	0	0	0
Factor 12	1	1.66	0	2	1	0	0	1.8	2
Factor 13	1	0	1	1	0	0	2	1	1
Factor 14	1.07	3.57	1.5	2	1.75	1.5	1	2.08	3
Factor 15	1.25	2.44	2.36	1.7	2.8	2.81	3.33	2.88	1.44
Factor 16	1.18	3	2.33	1.82	3.4	3.5	2.75	2.63	1.45
Factor 17	1.37	4.04	1.95	1.33	2.42	2.3	2	2.47	1.12
Factor 18	1.2	4.6	2.62	2.27	2.75	1.6	2.6	3.4	2.33
Factor 19	1	2.33	2	0	0	0	3.14	1	1

**Table 18.5.1 Pivot table**

The combined spider follows:



**Figure 18.5.1 Combined spider**

This shows that Organisation B is almost always the poorest performing organisation with the highest scores on most factors (see yellow line) and Organisation A has the lowest scores (ie 1's and 2's) showing it is the highest performing organisation surveyed.

There is least variation between the nine organisations on factors 12 (Intranet in place) and 13 (Importance of a project champion) where the averages ranged from 1-2 (excellent to very good) on both. It is worth noting however, that both these factors had three (or one third of the organisations) zero averages, meaning there were no comments from the case study transcripts to be assigned ratings on these factors.

The largest variation between the case study organisations were on factors 2 (Development of an integrated Internet presence), 4 (Support from top management), 5 (Internet training given and updated), 10 (Positive relationship with ISP) and 18 (Organisational culture responsive to change). Each of these five factors had a variation of over three points between the lowest and highest average score of the nine organisations.

As previously mentioned, almost all organisations did well on factors 12 (Secure server) and 13 (Importance of a project champion) where the scores ranged between 1 and 2. Other high scoring factors were 15 (Consideration of Web site on business effectiveness) with scores between 1.25 and 3.33, 19 (Electronic commerce) with scores between 1 and 3.14 and 11 (Intranet in place) with scores between 1 and 3.

### 18.5.2 Organisation A

The scores for Organisation A range between 1-2.25 with a difference of 1.25 between the highest and lowest average score for the nineteen factors. As can be seen from the spider plot below, this means the scores create a very tight web. The average score across the nineteen factors is 1.1; the highest of the nine organisations surveyed. Seven of the nineteen success factors scored the highest possible ranking (ie 1) for each factor. These were: 2 (Development of an integrated Internet presence), 4 (Support from top management), 9 (Updating and refocusing of home page), 10 (Positive relationship with ISP), 12 (Secure server), 13 (Importance of a project champion) and 19 (Electronic commerce). All the factors had fairly high similar ratings with the lowest 7 (Formal Internet policy) being a mere 2.25.

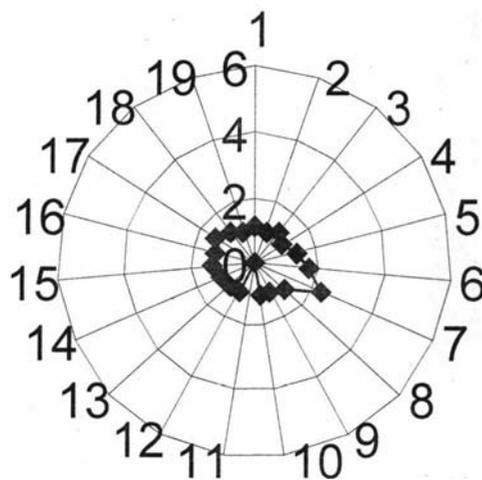


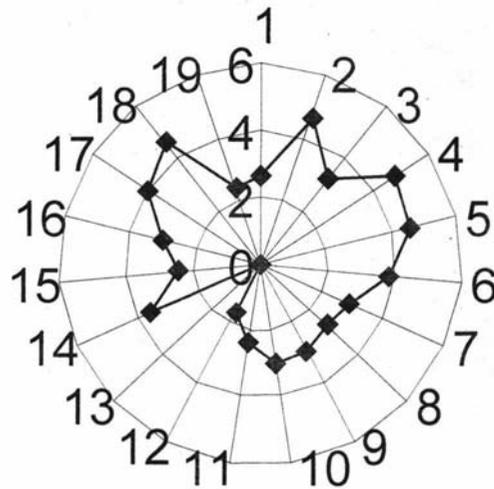
Figure 18.5.2 Organisation A Radar Chart

Factor 11 (Intranet in place) was the only factor from this organisation that did not receive a rating.

### 18.5.3 Organisation B

Organisation B's scores range between 1.66-4.8 with a difference of 3.14 between the highest and lowest average score for the nineteen factors. The average score across the nineteen factors is 3.1. The area indicating best performance is factor 12 (Secure server), perhaps hardly surprising for a banking institution. Factor 4 (support from top

management) is the lowest score.



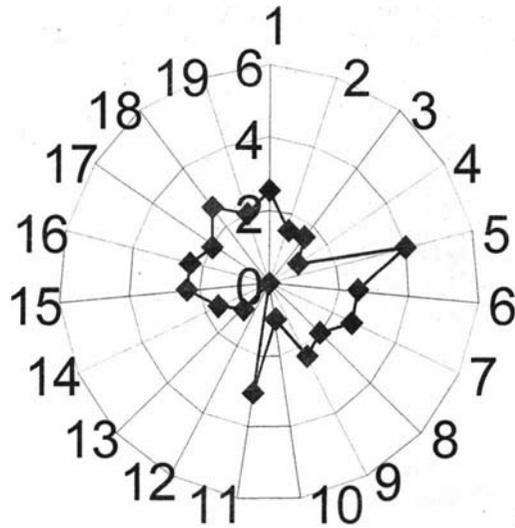
**Figure 18.5.3 Organisation B Radar Chart**

Factor 13 (Importance of a project champion) was the only factor from this organisation that did not receive a rating.

#### **18.5.4 Organisation C**

The scores for Organisation C range between 1-4 with a difference of 3 between the highest and lowest average score for the nineteen factors. The average score across the nineteen factors is 1.9. The highest possible ranking was recorded for factors 4 (Support from top management), 10 (Positive relationship with ISP) and 13 (Importance of a project champion). The lowest scoring factor was factor 5 (Internet training given and updated) at 4.

Factor 12 (Secure server) was the one factor from this organisation that did not receive a rating as no comments were made relating to it in the interviews.

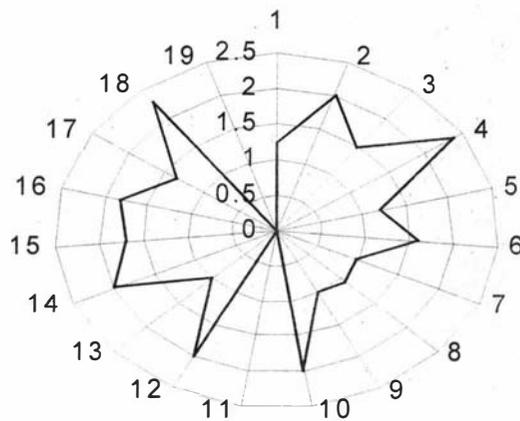


**Figure 18.5.4 Organisation C Radar Chart**

**18.5.5 Organisation D**

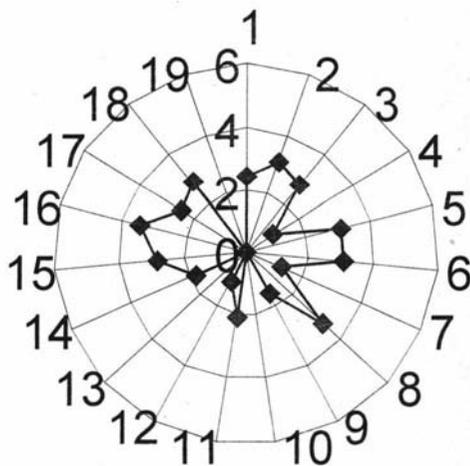
Organisation D's scores range between 1-2.37 and a difference of 1.37 between the highest and lowest average score. The average score across the nineteen factors is 1.4. The organisation's performance across all factors indicates consistent scores with the lowest score (2.37) being factor 4 (Support from top management). Factor 13 (Importance of a project champion) receives a 1 however.

Two factors, 11 (Intranet in place) and 19 (Electronic commerce) did not receive a rating; the later being hardly surprising in terms of the site's designation.



**Figure 18.5.5 Organisation D Radar Chart**

**18.5.6 Organisation E**



**Figure 18.5.6 Organisation E Radar Chart**

The scores for Organisation E range between 1-3.4 with a difference of 2.4 between the highest and lowest average score for the nineteen factors. The average score across the nineteen factors is 1.9; nearly a 2 or very good taken over the nineteen success factors. Two of the success factors scored the highest possible ranking (ie 1) for each factor. These were: 4 (Support from top management) and 12 (Secure server). The lowest scoring factor was factor 16 (Use of outside expertise) at 3.4

Factors 10 (Positive relationship with ISP), 13 (Importance of a project champion) and 19 (Electronic commerce) were the three factors from this organisation that did not receive a rating as no comments were made relating to them in the interviews.

### 18.5.7 Organisation F

The scores for Organisation F range between 1-4.42 with a difference of 3.42 between the highest and lowest average score for the nineteen factors. The average score across the nineteen factors is 1.7. The highest possible ranking was recorded for factor 11 (Intranet in place). The lowest scoring factor was factor 10 (Positive relationship with ISP) at 4.42

There were five success factors that did not receive a rating from Organisation F as no comments were made relating to them in the interviews. They were: 2 (Development of an integrated Internet presence), 7 (Formal Internet policy), 12 (Secure server), 13 (Importance of a project champion) and 19 (Electronic commerce).

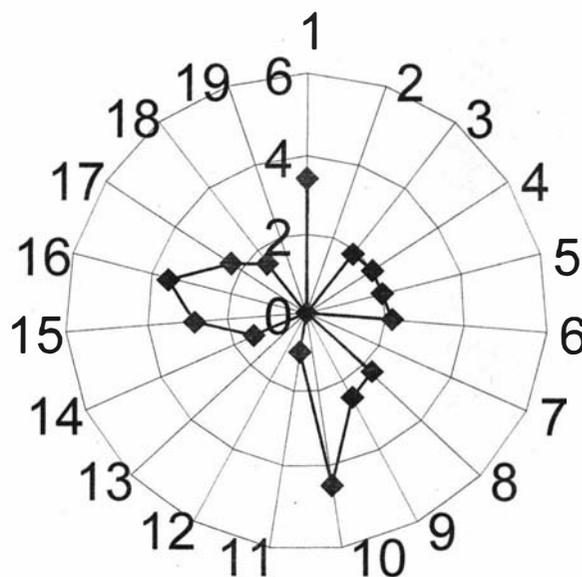
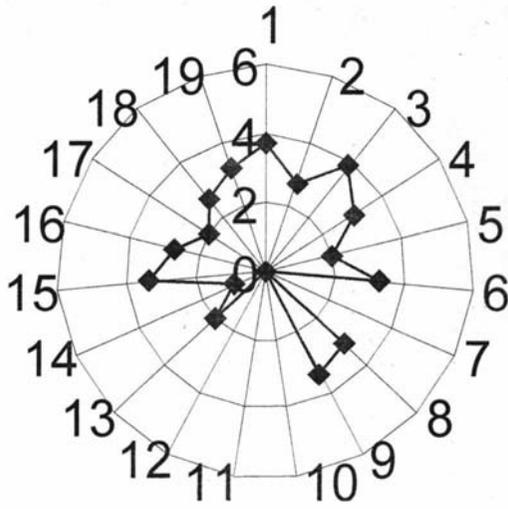


Figure 18.5.7 Organisation F Radar Chart

### 18.5.8 Organisation G

The success factor scores for Organisation G range between 1-3.9 with a difference of 2.9 between the highest and lowest average score for the nineteen factors. The average score across the nineteen factors is 2.2. Success factor 14 (Being aware of the online competition) scored the highest possible ranking (ie 1). The lowest scoring factor was factor 3 (Web site part of overall communications strategy) at 3.9

Factors 7 (Formal Internet policy), 10 (Positive relationship with ISP), 11(Intranet in place) and 12 (Secure server) were the four factors from this organisation that did not receive a rating as no comments were made relating to them in the interviews.

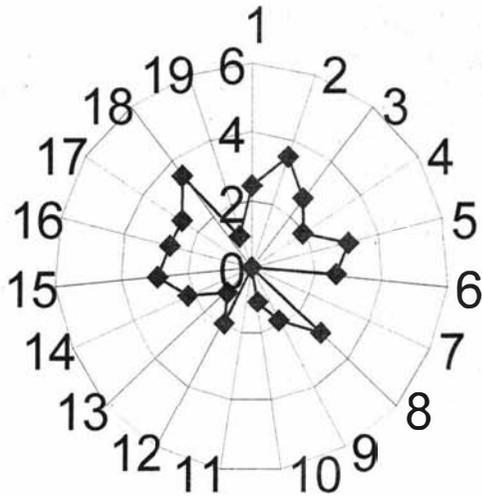


**Figure 18.5.8 Organisation G Radar Chart**

**18.5.9 Organisation H**

The scores for Organisation H range between 1-3.45 with a difference of 2.45 between the highest and lowest average score for the nineteen factors. The average score across the nineteen factors is 2. The highest possible ranking was recorded for factors 10 (Positive relationship with ISP), 13 (Secure server) and 19 (Electronic commerce). The lowest scoring factor was factor 2 (Development of an integrated Internet presence) at 3.45 and factor 18 (Organisational culture responsive to change) at 3.4

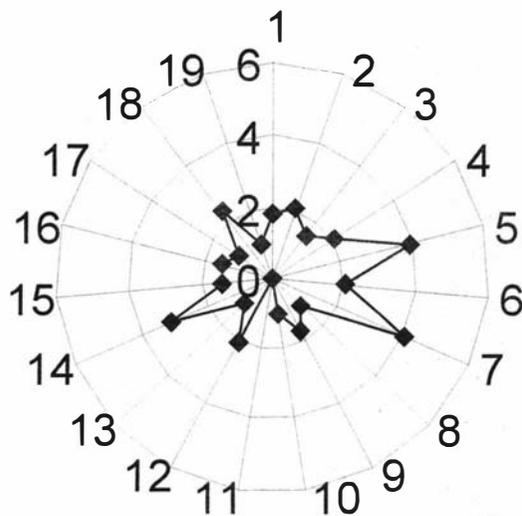
Factors 7 (Formal Internet policy) and 11 (Intranet in place) were the two factors from this organisation that did not receive a rating as no comments were made relating to them in the interviews.



**Figure 18.5.9 Organisation H Radar Chart**

**18.5.10 Organisation I**

Organisation I's scores range between 1-4 with a difference of 3 Likert points between the highest and lowest ranked factors. Most scores are high with an average score of 1.8, between excellent and very good. The lowest score for Organisation I is a 4 on factors 5 (Internet training given and updated) and 7 (Formal Internet policy). The highest scores for this organisation are a 1 on factors 10 (Positive relationship with ISP), 13 (Importance of a project champion) and 19 (Electronic commerce).



**Figure 18.5.10 Organisation I Radar Chart**

One factor, 11 (Intranet in place) did not receive a rating.

### 18.5.11 Dendrogram

The results of a cluster analysis have been displayed in a dendrogram. It was constructed from the average of all success factors of the nine organisations. It showed Organisation D, Organisation A and Organisation I are most similar with a percentage similarity of 56%, the grouping of Organisation E, Organisation H and Organisation C have a percentage similarity of 60% and Organisation G joins that group at 62%. The two remaining organisations, Organisation F and Organisation B have decreased levels of similarity at 40% and 33% respectively.

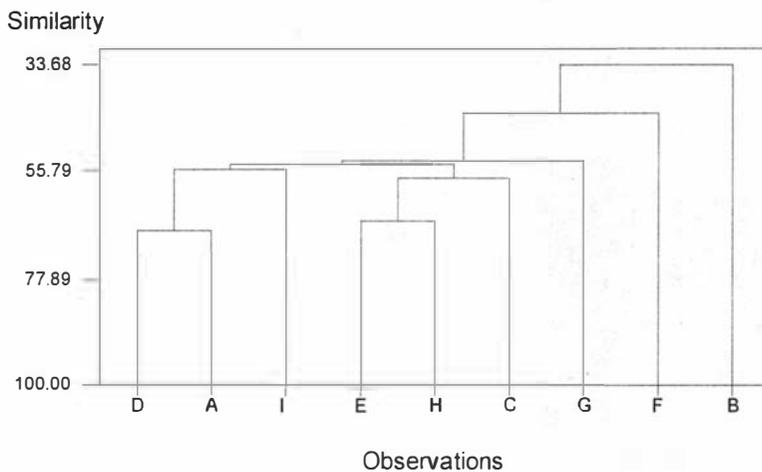


Figure 18.5.11 Dendrogram

### 18.6 Summary

This chapter has examined the individual and combined results of the nineteen success factors across the nine case study organisations. Cluster and principal component analysis were used to identify the strongest correlations between the success factors. Organisation B was shown as almost always the poorest performing organisation with the highest scores on most factors and Organisation A with the lowest scores was the highest performing organisation surveyed. Those causing the most variation as identified by principal component analysis were the factors related to communication and customer service.

## **19 Conclusions and Recommendations**

The results from the paper-based questionnaires as well as those sent by email indicated a number of factors related to organisational use of the Internet that were worthy of further investigation. These areas were explored in greater depth in interviews and case studies. A rating scale for the success factors that emerged was devised and comments from interview transcripts were coded. A score for each success factor was reached and plotted in a spider graph along with the other eighteen factors. Next, each of the nineteen success factors was compared across the nine case studies.

### **19.1 Conclusions**

Prior to the current research, much of the material available about factors that contribute to the success of a commercial site was anecdotal. Very little information at all existed on not-for-profit sites. Surveys conducted tended to be small and one-offs or single use surveys. They were restricted in geographical scope and limited to single industry sectors. Another limiting factor was the size of organisations surveyed with little being known about organisations employing over 100 employees, especially in a New Zealand context.

Previous results available were usually from 'snap shot studies' with a distinct paucity of any longitudinal work in evidence. One of the strengths of this current research is the recording of organisations' Internet projects as they progress rather than reading participants' comments in hindsight.

Another of the strengths of the current research is it includes interviews with key participants in a variety of roles within their organisations. This has given a number of perspectives and demonstrates the variety of influences on a project. Participants were asked about their processes when planning, implementing and evaluating their progress towards gaining an online presence. The range of comments encapsulated managerial, technical, customer service, communications, marketing and financial perspectives. Their observations at different points in the process have been interesting, with some comments being insightful and others displaying a lack of wider awareness, both about the Internet in general and their organisation in particular!

While the Internet enables business to be conducted on a global platform more easily than in the past, the current study focused on New Zealand organisations and this is another of its strengths. The data collected from three different questionnaires and from in-depth longitudinal research with nine organisations provides a very good picture of the motivations and thinking of the respondents' organisations and staff. The researcher was keen to get frank and candid assessments from those involved about the impact Internet had on their organisations. Some of the responses to these questions and the various factors are extraordinarily honest and revealing especially when non-favourable aspects about the person, the process or the organisation were disclosed. This again, is another significant difference from other anecdotal or other

reported findings about organisations: while the successes and triumphs are reported, there is a lack of hype and the mistakes and failures are also recorded.

Another powerful aspect of the research was the breadth of areas covered. One of the original motivations was to consider the “wider picture” when exploring the impact Internet has on organisations. This has led to a rich collection of data and gives a more extensive coverage of related issues and how they affect the use of Internet by organisations. The broader context helps place comments from individuals in a more useful framework.

Reported survey results have tended to be found in non-academic journals. The current research covers the experiences of nine organisations in setting up an Internet site and the factors involved. These results have been published in academic journals, thus increasing the available knowledge in the area. The findings are relevant for several reasons. They cover technical, management and commercial factors so are useful from a number of perspectives. The data and analyses are of value as the research was concerned with a longitudinal rather than a snap-shot view of the organisations. This enabled insights to be gained into various phases of the Internet development of those organisations explored via the case studies.

The results of this study show that those success factors that have the greatest impact on an organisation's successful Internet use are related to the human factors rather than the technical aspects. A closer examination reveals that they are in fact more specifically to do with communication and customer service. The strongest factors (in descending order) are:

- #6 Plan for dealing with site related communication,
- #17 Meeting customer demand,
- #3 Web site part of overall communication strategy,
- #8 Consideration of site's marketing aspects and
- #9 Updating and refocusing of home page.

These five factors were vital in the attributes of the highest performing organisations indicated by the smallest overall scores (ie the greatest number of low individual success factor scores).

## **19.2 Recommendations**

The study could be extended by maintaining a schedule of visits with the nine organisations constituting the case studies. They could be followed through changes in site use and content and those commercial organisations yet to take transactions from their sites could be monitored in terms of their decision making. Likewise, some organisations in the current survey didn't have an intranet at the time of the study and a future survey of them could incorporate that aspect in terms of the impact on the organisations' employees.

Some of the organisations that formed the case studies experienced more dramatic changes in their sectors than others. One example of this is the banking sector where significant changes have occurred. There has been a move to extend branch and telephone banking services to Internet banking. Banks that had informational Web sites have extended their offerings to include transactional sites offering a range of banking functions and accounts. An interesting piece of research could show whether an increase in the number of online banking offerings has led to an increase in customer satisfaction through meeting customer demand and whether banks have put a greater focus on the marketing and communication aspects of their Web sites.

Further research could focus on understanding the scores from the current research and applying the success factors to a wider range of organisations, both profit and not for profit. In addition to a wider range of industry types, comparisons could also be made on the basis of organisational size to discern similarities and differences.

One recommendation for further research is to explore an industry sector in greater depth covering various locations and organisation sizes. There would be a range of businesses within the sector and a useful analysis of the industry and participants' use of the Internet could be determined by utilising the success factors. In this way, a vortal approach could look at suppliers, manufacturers, retailers and end users.

It would be beneficial to assess organisations at a range of points in their organisation lifecycle relating to their use of the Internet. An organisation's Web site can alter over time as customer needs develop or as the strategic focus of the organisation changes. Various individuals can exert a strong influence over the layout and content of an organisation's Web site. Another interesting aspect to pursue would be the extent to which sites are being standardised in terms of design and levels of content. It would be interesting to look at whether companies were tending to outsource the design, development and upkeep of their Web sites as the trend towards more professional sites continues or whether the Kiwi attitude of DIY and developing needed skills on the job is more prevalent.

An aspect that the current study has not focussed on to a great extent is that of the customers' or public's response to organisations' Internet use. It would be interesting to look at the gap between organisational perceptions about their Internet use and presence and the perceptions of actual or potential customers. A wider selection of respondents could be taken and the same questions asked of employees and customers

to determine their perspectives. This study would largely focus on communication aspects, but is also related to marketing, meeting customer demand and considering the effectiveness of the Web site on wider business effectiveness.

Organisations are considering the level of interactivity available on their site and moving from email links, a search function and downloadable files to subscription services, voter surveys, order facilities and in some cases bulletin boards and chat rooms. More research needs to be done about customer involvement on organisational Web sites and the cost-benefit analysis of interactivity from a business perspective.

Another area worthy of further investigation is that of business-to-business Internet use. The current study has focussed primarily on the business-to-consumer aspects. Such a study could look at whether the set of nineteen factors was as relevant for business-to-business e-commerce and whether, for example, consideration of a site's marketing aspects applied as readily. As this area of e-commerce is growing so rapidly, attention needs to be paid to the major changes in the way this business is being performed and the effects on new organisational forms such as electronic markets and virtual businesses. Further research is needed on describing and explaining these impacts and the resulting changes in organisational structure, behaviour patterns, managerial style and so forth.

The current study investigated whether organisations had a formal Internet policy and used an intranet. As the trend towards making more business information available electronically both internally and externally increases, it would be interesting to see whether there is a rise in the number of organisations implementing formal policies around both Internet and intranet use. A number of those interviewed in the current study said no training was provided in Internet use and it remains to be investigated whether it will increasingly be assumed all employees are familiar with using the Internet and do not require help. The current study revealed a number of those interviewed for the research and some of their fellow staff were unfamiliar with the contents of their organisation's Web site.

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## 22 Glossary

The Internet does not exist, but all of its components do. There is no single entity that owns, controls or operates something called the Net. It is first and foremost a network of people who have all decided to use the same technical computer protocols to get in touch with each other- a network of networks. They may have a variety of computers with different capacities and operating systems, but when they go on the Net they all use the same scheme of connection to get in touch.

The WWW does not exist, either, as an entity. It is a technical consensus for displaying graphics on the Internet. The Web is simply a set of protocols called Hyper Text Markup Language, or HTML, which attaches tags to all Net data telling the network browser how to display text and graphics on individual users' screens. The "browser" really is a computer program which reads the tags and uses that information to draw the screen. About 75 percent of Internet communications use the Web protocols (Lucier, 1999).

The Internet is an international network of computers ranging from individual personal computers to supercomputers. A wide variety of information is available on the Internet, such as library catalogues, databases, computer files and discussion groups. The World Wide Web is part of the Internet, and the two terms should not be used interchangeably, although they often are.

Viehland (cited in Lobb, 1995, p3)) says the Internet is three things: "a network of networks enabling communication independent of time and distance, a global information resource and a community of people in cyberspace."

Bandwidth is used to refer to the speed with which data is sent over a network such as the Internet. The higher the bandwidth, the faster the speed.

Banner- a graphic display on a Web page used for advertisement.

Banner ad- linked to an advertiser's Web page.

A browser is a program that translates and displays information from the WWW. The browser also organises email and can help a user create individual Web pages. Internet Explorer and Netscape are examples of browsers.

Business to business (B2B) is a trading model where both the buyers and sellers are organisations.

Business to consumer (B2C) is a trading model where a business is selling online to an individual customer.

Call centre- a help desk where customers can communicate by telephone, fax and email.

Certificate- a document that is issued by a trusted third party, certificate authority to identify the holder.

Certifying authorities- trusted third party companies that issue digital certificates. Individuals use these certificates to verify their identity and to distribute their public keys.

Chat group- a real-time online forum for discussing issues of public and personal interest.

Clicks (or ad clicks)- every time a visitor clicks on an advertising banner to access the advertiser's Web site, it is counted as a "click" or "click-through."

Competitive strategy- a company's strategy aimed at increasing its competitiveness. It can be offensive or defensive.

Cookie- a web server sends a program, to be stored on the user's hard drive, called a "cookie" frequently without a disclosure or the user's content. The information stored will surface when the user's browser again crosses a specific server.

Cooperative strategy- strategic alliance or joint venture strategy with a competitor(s) in an industry.

Cryptography- the process of encrypting and decrypting messages. There are four components involved in the process: (1) plaintext- the message to be encrypted; (2) ciphertext- the encrypted message; (3) encryption algorithm or formula used to encrypt the message; (4) key-secret key used to encrypt and decrypt the ciphertext.

Customer Asset Management (CAM)- a business adding value to their relationship with their customers.

Customer loyalty- the degree to which a customer stays with a specific vendor or brand.

Customer-oriented marketplace- electronic marketplace where customers find big companies open to invite bidding.

Customer service- a series of activities designed to enhance the level of customer satisfaction before, during and after a purchase.

Cycle time- the processing time of a business process from beginning to end. It is also known as time-to-market.

Data mart- A subject or department- oriented data warehouse. It can include data duplicated from a corporate data warehouse and/or local data.

Data warehouse- A corporate data warehouse is a process by which related data from many operational systems is merged to provide a single, integrated business information view that spans all business divisions.

Decryption- the process of recovering encrypted messages.

Defensive strategy- strategy that either raises the structural barriers or lowers the inducement for attack.

Digital- a stream consisting of a stream of bits (binary digits of zeros and ones) representing sound, video, computer data or other information.

Digital certificate- a digital file issued to an individual or company by a certifying authority that contains the individual's or company's public encryption key and verifies the individual's or company's identity.

Digital envelope- the secret key encrypted by the receiver's public key, which is necessary to open prior to decrypting messages encrypted by a secret key.

Digital products- digital products that are transformed to information that can be expressed digitally. Music, software, movies and magazines can be digitized and delivered electronically to buyers.

Digital signature- a collection of information to which a digital signature has been affixed by some recognised authority and trusted by some community of certificate users.

Disintermediation- removing the layers of intermediaries between sellers and buyers.

Domain name- the name used to reference a computer on the Internet such as [www.amazon.com](http://www.amazon.com). The name is divided into segments with the top-level domain on the right, the designation of the specific computer on the left and the subdomain in between the two.

E-business- the use of Internet technologies to improve and transform key business processes.

Electronic auctions- auctions conducted online initially on private networks, now on the Internet.

Electronic broker (e-broker)- electronic intermediary who only introduces the commercial sites and is not responsible for the order fulfillment and guarantee (versus electronic distributor).

Electronic cash (e-cash)- cash in an electronic form, usually stored on a smart card and/or in software called a digital wallet.

Electronic catalogues- presentation of information about products (and some services) that traditionally were in paper catalogues. However, electronic catalogues can include multimedia, such as voice or video clips.

Electronic check (e-check)- a check (cheque) in an electronic form, deliverable through the network.

Electronic communities- Internet communities of people who share the same interest and gather to share information, chat and collaborate online.

Electronic data interchange (EDI)- computer-to-computer direct transfer of standard business documents (such as purchase orders).

Electronic fund transfer (EFT)- transferring money from one account to another.

Electronic markets- a place where buyers and sellers negotiate, submit bids, agree on orders and if appropriate finish the transactions electronically.

Electronic shopping cart- a virtual shopping cart that enables consumers to collect items as they browse an online sales site until they are ready to purchase the items.

Electronic shopping mall (e-mall)- a set of independent electronic stores who share an electronic marketing environment such as servers, software and payment systems.

Electronic store (e-store)- a unit of electronic distributor under one management.

Electronic (or digital) wallet- a software that can store (or retrieve) electronic cash and certificates.

Encryption- a process of making messages indecipherable except to those who have an authorized decryption key. Data is converted prior to transmission to a secret code that masks the meaning of the data to unauthorised recipients.

Enterprise Resource Planning (ERP)- an integrated software package for the business.

Extranet- a network that links the intranets of business partners using the virtually private network on the Internet.

File Transfer Protocol (FTP)- An Internet application protocol that enables the user to log onto computers at other sites and transfers or retrieves files.

Firewall- a network node consisting of both hardware and software that isolates a private network from public networks. There are two basic types of firewalls: dual-homed gateways and screen-host gateways.

Graphical User Interface (GUI)- A software interface that relies on icons, bars, buttons and boxes and other images to initiate computer-based tasks for users.

Hit- Web term for any request for data from a Web page or file.

Home page- the introductory page for a WWW site. It provides an introduction to the site, along with hypertext links.

Hypertext Markup Language (HTML)- A popular page description language for creating hypertext and hypermedia documents for World Wide Web and intranet Web sites.

Indirect marketing- the products and services are sold through third-party distributors (versus direct marketing).

Information Technology (IT) - Hardware, software, telecommunications, database management and other information processing technologies used in computer-based information systems.

Integrity- one of the cornerstones of secure Internet communications, referring to the fact that the contents of a message have not modified (intentionally or accidentally) during its transmission.

Interactive advertisement- any advertisement that requires or allows the viewer/consumer to take some action.

Interactive marketing- the consumer interacts with the online sellers, eg requesting more information, by sending an email or clicking on a link and answering a questionnaire.

Intermediary- the third party between sellers and buyers, such as retailing and distributors.

Internet- the world's largest computer network. It is a system of more than 100,000 interconnected networks that link government agencies, technical universities, commercial customers and private individuals.

Internet Protocol (IP)- An ISO standard that implements network layer 3 of an open system interconnection (OSI) model, containing a network address and used by a router to direct an IP packet to a different network. In order for one computer to send a request or a response to another computer on the Internet, the request or response must be divided into packets that are labelled with the addresses of the sending and receiving computers. Internet Protocol formats the packets and assigns addresses.

Internet Service Provider (ISP)- private companies supplying local and regional connections to the Internet and providing individuals and businesses with Internet access for a fee.

Internet II- see Next Generation Internet.

Internet-based EDI- the EDI that runs on the Internet usually using the Web environment.

Intrabusiness EC- application of EC methods inside one organisation, usually on its intranet, creating a paperless environment. Activities range from internal customer service to selling products to employees.

Intranet- an Internet-like network within an organisation. Web browser software provides easy access to internal Web sites established by business units, teams and individuals and other network resources and applications.

Joint venture- a cooperative business activity formed by multiple separate organisations for a strategic purpose.

Listserv- an electronic discussion group. There are thousands of list-servs on a variety of topics, which can be joined through an email account.

Market segmentation- the process of dividing a consumer market into a logical group for marketing research decision making, advertisement and sales activities.

Mass customization- producing large numbers (mass) of customized items.

M-commerce- commerce carried out using mobile devices such as cell phones.

Merchant server- packaged software systems designed to help companies establish and run an electronic storefront on a single server (computer). The software usually provides templates for creating an electronic product catalogue, setting up electronic shopping carts, handling secure payments and processing customer orders.

Micropayment- payment of a very small amount.

Middleware- software that helps diverse networked computer systems work together, thus promoting their interoperability.

Next generation Internet- A US government initiative supporting the creation of a high-speed network, interconnecting various research facilities across the country.

Nonrepudiation- One of the cornerstones of secure Internet connections, referring to the fact that the sender of a message cannot deny that they actually sent the message.

One-to-one marketing- Relationship marketing that treats each customer in a unique way to fit the customer's need and other characteristics.

Online publishing- Dissemination of newspapers, magazines and other publishable material on the Internet (or intranets). It also refers to dissemination of material specially prepared for the Web.

Packet- In order for one computer to communicate with another over the Internet, the communications or message must be broken down into smaller units called packets. Each packet contains both data and a header specifying the addresses of the sending and receiving computers.

Passive pull strategy- sending targeted information to customers either on request or as a result of knowing something about the customers.

Pointcasting- the delivery of customized information using push technology (in contrast to information broadcast to everyone).

Portals- Web sites which direct users to information elsewhere eg search engines. They specialise in Web links on a specific subject such as health, sport or a range of academic resources.

Private key encryption- also called a symmetrical key encryption. With this type of encryption, a pair of encryption keys are used- a public key and a private one. The public key is made available to anyone who wants to send an encrypted message to the holder of the private key. The only way to decrypt the message is with the private key. In this way messages can be sent without agreeing on the keys in advance.

Protocol is a definition for how computers will act when communicating with each other. Standard protocols allow computers from different manufacturers to communicate and use different software, providing that the programs running on both ends agree on what the data mean.

Public key- the key that is open to all authorized senders for secure encryption of messages to be sent to the receiver who holds the counterpart private key.

Public key encryption- also known as an asymmetrical key encryption. With this type of encryption, a pair of encryption keys are used- a private key and a public key. The public key is made available to anyone who wants to send an encrypted message to the holder of the private key. The only way to decrypt the message is with the private key. In this way messages can be sent without agreeing on the keys in advance.

Push technology- automatically delivered information to a viewer who specifies some requirements. Push technology compiles information from several sources. It is contrasted with pull technology where the user actively searches for information eg by using a search engine.

Reach- the number of people or households exposed to an advertisement at least once over a specified period of time.

Real time- refers to the performance of data processing during the actual time a business or physical process transpires, in order that results of the data processing can be used to support the completion of the process.

Reintermediation- 1) Redefining the role of traditional intermediaries. They provide value-added services that cannot be provided online; 2) Establishing new electronic intermediaries in place of disintermediated traditional intermediaries.

Relationship marketing- the overt attempt of exchange partners to build a long-term relationship and association in marketing.

Router- Special computers whose primary task is to guide the transmission of data packets across the Internet. Routers have updateable maps of the networks on the Internet that enables the routers to determine the paths for the data packets.

RSA- An encryption and authentication technology developed at MIT during 1977 by Rivest, Shamir & Adelman who subsequently formed their own company, RSA Data Security Inc., which was acquired by Security Dynamics Technologies, Inc.

Secret key- the key that should be kept secret by its owner for encryption and decryption.

Secure Electronic Transaction (SET)- A set of cryptographic protocols jointly developed by Visa, MasterCard, Netscape and Microsoft and designed to provide secure Web credit card transactions for both consumers and merchants.

Secure socket layer (SSL)- A special communication protocol used by Web browsers and servers to encrypt all communications online. This protocol makes secure Web transmissions transparent to end users.

Spamming- sending an unwanted advertisement to users, analogous to "junk mail."

Stovepipe systems- Standalone systems that serve perform only one function.

Strategic alliance- Partnership of multiple corporations to achieve strategically significant objectives that are mutually beneficial.

Strategic planning- Planning for a set of managerial decisions and actions that determine the long-term performance of an organisation.

Strategy formulation- developing long-range plans to effectively manage environmental opportunities and threats in light of corporate strengths and weaknesses.

Strategy reassessment- Review and monitoring of a strategy after its implementation to evaluate its effectiveness and to decide whether any changes are needed for the future.

Success factors- the indispensable business, technology and human factors that would help achieve the desired level of an organisation's goal.

Supplier-oriented marketplace- Electronic marketplace where the supplying companies are passively waiting for customers.

Supply chain management- Management of all the activities along the supply chain; from suppliers to internal logistics within a company and distribution to customers. This includes ordering, monitoring, billing and so on.

Transmission Control Protocol (TCP)- Part of the combined TCP/IP protocol, TCP ensures that two computers can communicate with each other in a reliable fashion. Each TCP communication must be acknowledged as received. If the communication is not acknowledged in a reasonable time, then the sending computer must retransmit the data.

Uniform Resource Locator (URL)- The addressing scheme used to locate documents on the Web. The complete syntax for a Web address is: "access-method://server-name[:port]/directory/file." An example of a complete address is <http://www.mycompany.com:80/default.htm>, while a shortened address relying on default settings might be "www.mycompany.com"

Uniform Resource Locator (URL) is the server and path information that locates a document.

Usenet is a network providing access to electronic discussion groups (newsgroups). There are thousands of newsgroups on all subjects, which can be joined by using a newsreader program.

Value-added networks (VANs)- Networks that add communication services to existing common carriers.

Value chain- a series of activities a company performs to achieve its goal by adding additional values when each activity proceeds from one stage to the next one.

Value-chain partnership- a strong and close alliance in which a company forms a long-term arrangement with a key supplier or distributor for a mutual advantage.

Virtual corporation- a partnership of two or more companies who create a new organisation whose partners are in different locations. The corporation can be temporary or permanent.

Virtual Private Network (VPN) - A secure network that uses the Internet as its main backbone network to connect the intranets of a company's different locations, or to establish extranet links between a company and its customers, suppliers or other business partners.

Vortal- Portals that target particular industry verticals or single industries are called "vortals."

Web hosting- the placement of the Web site on a certain server and providing the necessary infrastructure for its operation.

WWW- a hypertext system that provides access to the Internet through programs called network information browsers.

Extensible Markup Language (XML)- Language that allows designers to create their own customised tags, enabling the definition, transmission, validation and interpretation of data between applications and between organisations.

**The glossary of terms was referenced from the following resources:**

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