What is the decision making process of entrepreneurs' implementation of MCS software, and how are external consultants engaged and used in the process? How does this engagement affect any ongoing relationship between the two?
An Exploratory Study

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Introduction

Importance of SMEs

Small to medium enterprises (SMEs) have increasingly been the subject of research in a number of areas and aspects. This is attributable to their predominance in economies of every nation in the world in terms of the high proportion SMEs comprise to total businesses, numbers of people engaged in SME businesses and total commerce (turnover, profit, tax revenue) they generate (Kartiwi & MacGregor, 2007). In addition to their numerical dominance, SMEs are a fertile source of innovation, well beyond their resource base. They manage to be innovative through their entrepreneurial base, flexible management, knowledge inputs from external sources like suppliers or customers and informal networks where ideas are shared freely (Larsen, et al, 2006). They manage to be innovative despite the high costs of research activity and that patenting ideas is effectively out of reach, due to the rigours of registration and the lack of experience and expertise in defending intellectual property rights. Examining share of sales from new products frequently indicates the innovative nature of SMEs, although this measure has limitations regarding cost saving innovations and product novelty (Rammer, Czarnitzki, & Spielkamp, 2009).

Governments have recognised the importance of SMEs through the extent of programmes and incentives devised for their support. They appear to have identified the benefits of providing financial incentives and agency support to assist SMEs make advances. Based on their survey, Jeon, Han & Lee (2006) find that firms in Korea that utilised government assistance led firms with the largest e-business platforms. In India, efforts to improve the infra-structure have targeted SMEs to enhance their take up and use of on line functionality for communication, reporting and e-commerce (Upadhyaya & Mohanan, 2009). In Russia and Latin America, Hawk (2004) found that government assistance and external finance are being applied to SMEs to enhance their levels of technology as they are lagging behind other, developed economies, yet represent great potential for growth. In many countries, this great potential for growth of productivity, exporting goods and making larger contributions in GDP exists within the SME sector. This has been found for Indonesia (Suhendra, Hermana & Sugiharto, 2009), Sweden (Kartiwi & MacGregor, 2007), regional Australian firms (MacGregor & Vrazalic, 2008) and elsewhere. In New Zealand, Al-Qirim (2007) finds that due to the small size of the economy and the number of small firms,

constrained by lack of resources and expertise, they may be locked into limited positions and susceptible to external fluctuations.

With the importance of SMEs to national economies Ramdani & Kawakek (2007) point out the importance of information systems to SME economic survival and growth. It is necessary to understand the processes and differentiating factors of system implementation.

Definition of SME

The definition of "SME" varies throughout the world. Definitions in the USA, the European Union and Asia, as well as in individual countries within the latter two regions vary. SMEs are usually defined by size, although the size criteria are not globally accepted, so that comparisons between countries are not immediately feasible. MacGregor & Vrazalic, (2008) point out that the range of definitions of what constitutes an SME vary on size, principally on number of employees, on structure, and on qualitative/quantitative characteristics. They conclude that it is sufficient to define SME and ensure the definition adheres within the widely held views. Al-Qirim (2006) points out that New Zealand SMEs have 19 or fewer full time equivalent employees while in Europe they can have 500 or fewer FTEs. In another study Ramdani & Kawalek (2007) follow a similar definition of SMEs by dividing them into micro firms (10 or fewer employees) and small firms (10-49 employees). They based these categories on definitions provided by the European Commission, London Department of Trade & Industry and other definitions used. For clarity within the New Zealand definition of SMEs having 19 or fewer employees will be used.

Importance of Management Control Systems (MCS)

MCS defined.

As with any enterprise, the means by which the results of operations are captured and analysed are important components and require the attention of owners and managers. Such systems are referred to as management control systems and may be defined as

1. The formal, information-based routines and procedures managers use to maintain or alter patterns in organisational activities;

2. the recurrent, formalised and information based systems that help managers leverage their attention, liberate them from decisions that can be delegated and controlled by exception;

3. the supply of information when the informal network is overloaded (Davila & Foster, 2007).

A common definition of business systems is provided by Mendo, Fitzgerald, & Martinez (2009, p.266) as

> including buying and selling goods and services through the internet (e-commerce), but also about using internet technologies, such as e-mail and web sites, for servicing customers, sharing business information, maintaining business relationships, and conducting business transactions, either within the organisation itself or with external stakeholders.

Burton-Jones & Gallivan (2007, p.659)define system *usage* as comprising "three elements: a *user* (the subject of the information system), a *system* (the information system used) and a *task* (the function being performed)...These elements define system usage as a user's employment of a system to perform a task. It is possible to use our definition to study collectives in which some members indirectly interact with a system by relying on other members who directly interact with it."

Reasons for adopting systems.

There are several possible reasons in the research to date that may explain why firms adopt computer systems. Some reasons include the four goals of providing management support, reducing operational costs, improving customer service and gaining competitive advantages. Alongside these goals, there is a further but different possibility—whether and to what extent systems are being installed to improve existing capabilities and operating efficiency or to explore and exploit new possibilities. (Subramani, 2004). Adopting a technological base may benefit a firm in developing its strategy. According to Eldenburg & Krishnan (2008) strategy is the mechanism that connects the firm to its environment (customers, suppliers, regulators and the public). Gaining IT capability `consistent with and compatible to firm strategy is necessary for efficiency and to maintain the advantages a firm has. In deciding upon such systems, ownership structure, regulatory requirements and financial objectives (i.e. to increase revenue, control costs) influence the type and complexity of financial

systems (). Firms that use systems as part of an overall strategy of value adding derive greater value and achieve more leverage (Powell & Levy, 2006).

Alignment between business plans and IT capability is important for businesses. SMEs are in a good position to adopt management systems, particularly at early stages, when business plans are being formed and processes are starting out. Chan & Reich (2007) indicate alignment is easier for SMEs, as communication is high and individuals share many roles. Raymond & Bergeron (2008) find the importance of ensuring alignment of management system capability with firm strategy and goals. For them, firms which were aligned in the range of their functions to their strategy (growth, stability, market share) were more productive than firms that had not aligned systems and strategy. They demonstrate that merely adding capabilities does not ensure productivity gains.

Role in company growth.

As businesses start, their systems are typically informal, unfocused, un-strategic and unreliable. Other priorities, including setting up production processes or product implementation models (especially for intangible, intellectual products) employing staff, establishing links with customers, satisfying licensing and regulatory requirements and establishing workflows take precedence. It does not take long, typically, for these enterprises to turn their attention to organisational outcomes and how they are being measured. The need to manage customers or operations is reason for adoption or development of information management systems, as firms grow. Influenced by the owners' understanding of IT, the decision to change systems is often not planned, although eventually SMEs start to recognise the demands of structural change and may improve internal communication (Powell & Levy, 2006).

Comprehensiveness of examining SMEs and MCS

It is rare for an SME to lack any computer technology. Papastathopoulos & Beneki (2010) classify ICT use into three levels, basic, advanced and superior. They find that all SMEs now have ICT at the basic level, for routine processing and basic communication. As SMEs grow in size and commit more financial and management resources, they engage advanced ICT (programming operations, transaction monitoring, and decision making and auditing) or

superior ICT (integration of the informational and business processes). Thus, research exploring SMEs installation or upgrades of their systems potentially applies to all SMEs.

Use of consultants.

SMES are constrained by lack of resources, size and experience in being able to make informed decisions regarding their MCS requirements. An important means to remedy this constraint is to use external consultants to assist them. Consultants can be beneficial in information systems implementation by filling in the experience and knowledge gaps. By being an outsider, they are not involved in office politics and their decisions are based on what is in the business' best interest. Very often a credible outside consultant can get a user to adopt new practices that internal managers have tried unsuccessfully to implement (Adams, Berner & Wyatt, 2004). The role of external consultants will be examined further in the literature review and as part of the study.

Summary of importance of MCS.

As SMEs develop from their initial establishment, the MCS they adopt to assist with their growth is a critical process in determining their success or failure. Understanding the decision making process that SMEs use, the key influences and the types of systems that have been successfully adopted assists in predicting the outcomes. In addition providing guidance, templates or models for successful MCS implementation would assist SMEs as they reach this point in their development. Their use of consultants to assist in this process also requires particular attention.

Benefits of Studying System Implementation in SMES.

The benefits of studying the influences on system implementation include identifying the factors that need to be present for a successful result. This will assist the SME prior to committing resources into hardware and software and engaging a consultant or furthering their involvement with them. It would also help consultants and suppliers to perform their functions more effectively by guiding the efforts to the places that will require attention when assessing the needs of their clients while providing cost efficient, worthwhile advice. It would add to the research by furthering knowledge of the key variables that will need to be examined by models seeking to measure these influences on system implementation.

Research Question

Deriving from the importance of SMEs and their MCS, the purpose of this research is to gain additional insight into the decision making process of entrepreneurs' implementation of MCS software, with a particular focus on how external consultants are engaged and used in the process. How this affects any ongoing relationship between the two will also be questioned.

Theoretical Framework

Exploratory nature of research.

As will be shown in the literature review, the current level of understanding of the research question is limited. Therefore, the next step in advancing knowledge through further research in this area is properly characterised as "exploratory". Stebbins (2001) defines this type of research as being when there is little or no knowledge of the situation to be examined but nevertheless there is believed to be elements worth discovering. This requires flexibility and open-mindedness in approach, with first hand understanding of the phenomenon, unconcerned for the rigours of design, sampling, validity and generalisation. An exploratory approach provides information to fill the gap between situations already explained in the literature and particular or specialized situations not yet explained where similarities and differences in the areas can be studied. It is an appropriate method to inform, so that more analytical methods can be deployed in future research. Overall, exploratory study aims to generate new ideas and weave them together to form a grounded theory that emerges directly from the data, with study design and measurement base subordinate to them (Hawk, 2004).

The exploratory nature of study is also necessary due to the geographical range of subjects. As Rosenkopf & Almeida (2003, p. 755) note "the work practices, culture, and even technical terminology are often peculiar to a region and vary dramatically across regions. Second, common context increases the likelihood of similarity between firms in terms of their practices and routines." Thus the results may not be readily generalisable.

Refinement of models.

The literature review will also indicate that models developed to explain the research question would need to be refined for the more specific aspects of SME MCS

implementation. Exploratory research is useful to hone in on the particular decision points that refined models could examine. This framework will enable there to be a greater understanding of the key decision points as the variables are identified.

Summary

SMEs, as defined, are critical elements of national economies. Their development and growth become entangled with the type of MCS they implement. Yet through their differences, it is not well understood how the implementation process works and what the key milestones are. Research to date is limited, and thus it is beneficial to explore the key elements of the process of system implementation for SMEs. The literature review section will provide background on the current state of knowledge about SMEs, implementation of MCS and the research efforts to date which have tried to examine this process. It has also been carried out to demonstrate that little or no knowledge or work has been done in the area of interest. This is done by searching for studies closest to the area of examination and then demonstrating that these studies have not explained critical aspects of the examination (Stebbins, 2001).

Literature Review

Overview

Much of the research that has been conducted on systems and the use of computers in business has been conducted on large enterprises. A review of the literature will first demonstrate how this research cannot be applied to SMEs. In addition, it will be shown that SMEs are not all the same, but rather have differences that need to be considered. Describing the differences between large enterprises and SMEs as well as the differences within the SME category will enable the focus to settle on what is relevant to SMEs. The generalisations that have been made in the past about SMEs may have been a contributing factor in the knowledge gap that exists at present. The literature review will then focus on two general areas specific to SMEs: understanding about how SMEs operate and on how MCS may be employed. The use of external support by SMEs—its importance, its necessity and its effects will also be examined. The methodology used in this study to research these aspects of SME, adopted from previous research, is also provided.

Differences Between Large Enterprises and SMEs

Most of the existing research regarding system implementation has concerned large enterprises and excluded or ignored SMEs. This was stated by Ren, Ngai & Cho (2010, p.454) in that "small and medium sized enterprises which are an important component of all economies and which have increased their use of IT in recent years have been neglected." There are many reasons why SMEs have been neglected in this research. First is the lack of readily available data about them. Research in SMEs is under-represented because "private corporations are not legally required to disclose financial and operating information, so researchers have under sampled this population" (Fiegener, 2005, p.628). Second, research on very small firms is scarce because of the difficulty of observing and measuring their transactions. (Hartarska & Gonzalez-Vega, 2006). Third, small businesses resist opening up systems and sharing information. This is both from their resistance personally to sharing and also from their low level of technological sophistication and from systems that cannot share information or interface with others. This limits aspects of e-commerce and internet sharing usage (Chen & McQueen, 2008). With large enterprises not experiencing these issues while being more easily identified, contactable and examinable, researchers have studied them and overlooked SMEs.

The results of research into large enterprises cannot be applied to SMEs without further testing as their differences are too great. SMEs have shortages of resources, short planning time frames, lack of technical knowledge regarding IT, centralised decision making usually in the founder/CEO and little influence in their markets (Ren, Ngai & Cho, 2010). Grandon & Pearson (2004, p. 198) enumerated the difficulties with "research findings on large businesses not able to be generalised. [Research] identified important differences in the financial management of small and large businesses with the unique characteristics of SMEs as lack of business and IT strategy, limited access to capital resources, greater emphasis on using IT and information systems to automate rather than *informate*, influences of major customers and limited information skill." Ramdani & Kawaklek (2007) also outline the differences between large enterprises and SMEs. These differences require closer examination.

Lack of resources and expertise.

The first of the distinguishing characteristics of SMEs to large enterprises is that of resource poverty in the areas of finance, IT skills, time and planning. Kartiwi & Macgregor (2007) confirm that SMEs face many barriers to technology implementation, many not faced by large enterprises. They refer to the internal barriers of lack of technical and managerial expertise and lack of cohesion with existing practices. The external barriers of lack of finance, security concerns and incompatibility with suppliers were also noted. Further examination of these barriers provides the following results. Among the reasons why SMEs lag behind in implementing technology are lack of adequate hardware and software to cope with computing requirements, lack of expertise to plan and direct installation and usage, reliance on the CEO and insufficient support from vendors and consultants (Al-Qirim, 2007). Early research by Locke (2004) indicated that SMEs in NZ lack information about and understanding of information and communication systems. Yet use of technology by SMEs was shown to reduce costs and improve profitability. SMEs are reluctant to commit further resources and are unsure of future developments (Levy, Powell & Worrall, 2005).

The state of SMEs was described in Chen, et al (2008, p. 163). "Previous research found SMEs, or companies of both moderate size and managerial sophistication, suffer from limited resources, a condition characterised by severe constraints on financial resources, a lack of trained personnel, and a short-range management perspective imposed by volatile, competitive environments". Carey (2008, p. 86) describes the restrictive situation confronted by SMEs

> Factors that have been found to constrain the online initiatives of small business include: lack of understanding, experience and skills on the part of small business owners and their staff; other priorities competing for available finances and time; and difficulty finding information and assistance. Small businesses generally have very limited in-house computer skills, therefore they face significant knowledge barriers in taking advantage of new information technology. Whilst restrictions on available time and finances are important constraints, access to high quality external expertise is the most critical factor for successful implementation of small business information systems.

In an SME, in contrast to large enterprises, there is also not the flexibility to defer costs through capitalising the expenditure on MCS. As SMEs are not as profit focused as large

enterprises, their concern for cash flow rather profits, minimises the impact that capitalisation would provide in their financial statements (Walker & Oliver, 2005).

The presence of management that is intertwined throughout the business, rather than being separated, limits SME resource capacity, expertise and separate accountability. This is also a contrast between large enterprises and SMES:

> Many of these firms are closely held and governance issues more entwined than in large, publicly held firms where the separation of ownership and management is more clear cut. This means that in SMEs ownership, board and top management often overlap, with the same people, or people from the same family, involved at all levels (Brunninge, Nordqvist, & Wiklund, 2007, p. 296).

Lack of technical expertise limits and constrains SMEs in their systems selection and application. System implementation in SMEs differs from large entities because

> In large organisations use is characteristically hierarchically segmented. In contrast in SMEs owner/managers use the systems for operational as well as reporting functions. Thus, for SMEs, the extent of collective and cooperative system use is different and accordingly so too are the opportunities for an enterprise to accept and practice divergences from normal system use. Consequently the opportunity for agreed innovation increases (Wilkin, 2009, p.208)

Lack of in house IT expertise adds to their constraints. Gooderham, et al (2004) find evidence that many SMEs not only lack financial skills and knowledge of how financial management systems might be used to aid them in the decision making process but also typically do not have formal qualifications or professional management experience. Thirdly, while large enterprises tent to strategise, SMEs tend to be more reactive to immediate needs rather than long term goals. For many SME technology adapters, the basis for their implementation was circumstantial rather than strategic—opportunities presented themselves rather than being obtained by planning or strategy (Al-Qirim, 2006). Installation or replacement of information systems in SMEs is characterised by crisis reactions rather than strategic planning. This corresponds to typical management styles they engage and their limited resources (Powell & Levy, 2006).

Lack of internal controls.

The standard features of comprehensive internal controls are well known and have been thoroughly researched. Yet as noted by Arvind, Pranil & Joyti (2010, p.19)

> Small businesses often are not able to implement all necessary internal controls. Cost implications and limited numbers of employees make it very difficult to implement

certain controls. The audit statement of auditing practice states that many controls which would be relevant to large entities are not practical in small businesses. For example, in small businesses, accounting procedures may be performed by few persons. These persons have both operating and custodial responsibilities and segregation of functions may be missing or severely limited. Therefore, internal control features in small businesses may be limited.

Access to funding.

While large enterprises typically have varied sources of capital funding, small firms suffer from restricted capital as they have constrained by access to lending as well as limited internal capital. SMEs access to lending is constrained by their opaque financial information as banks are reluctant to provide financing (Hartarska & Gonzalez-Vega, 2006). Young, small firms are further constrained from borrowing funds as research indicates worldwide that a minimum of three years' financial information are required by major lenders (Hartarska & Gonzalez-Vega, 2006). The financial cost of technology can be prohibitive. Chan & Lin (2007) suggest that it is reasonable to suspect that SMEs that do not perform well may decide not to put resources into systems. They are reluctant to commit further resources when they are unsure of future developments (Levy, Powell & Worrall, 2005). MacGregor & Vrazalic, (2008, p. 33) summarise the SME situation: "Since SMEs are inherently under-resourced due to their small size, limited expertise and poor access to funds, it is to be expected that resource limitations would deter SME owners from investing money, time and effort into implementing a technology that has no proven track record in the SME sector."

Lack of funding has a direct effect on SMEs impact in the market. After having considered a number of internal issues, externally, SMEs differ from large enterprises in their ability to influence their markets. Since SMEs have little or no influence on their markets, they tend to be reactive and utilise short planning perspectives (MacGregor & Vrazalic, 2008). The demands of large customers like prime contractors and competitors' capabilities that would give them an advantage also affect SMEs (Raymond & Bergeron, 2008). This perspective affects their adoption of technology as it has a longer span than that in which SMEs operate.

Technology and support infrastructure.

Without financial resources, the technology and supporting infrastructure suffers. Establishing a secure computing environment is an issue for small businesses. Cost becomes a constraint for sufficient security structures, leaving many firms with on line capability only

able to employ traditional off-line payment methods (Chen & McQueen, 2008). In Chan & Lin (2007, p.208) "few participants reported that their websites provide online payment service and supply chain integration (14.6%). The high cost of internet security and concerns for the effect of security breaches is a dominant reason for low technology uptake by SMEs (MacGregor & Vrazalic, 2008).

Numerous SMEs have created brochure websites that introduce their firms and provide customers with information. However few SMEs have integrated their websites with back-office systems". While most SMEs have established access to email and have static brochure-ware web sites, there is scant evidence of further uptake in internal networks, internet to business system interface or other e-business systems (Levy, Powell & Worrall, 2005

Implementation of ERP systems highlights all of the differences between large enterprises and SMEs. Large enterprises usually have the expertise, possess the infrastructure, engage in the planning and undertake the training and testing necessary for implementation. SMEs usually do none of this for lack of resources. The response of ERP providers parallels this. They provide both management and system consultancy to large enterprises but only system consultancy to SMEs (Chen, et al, 2008).

Although this is the situation at present, it may change in the future. A future growth opportunity for SMEs may occur in the scaling of IT capabilities. As the large enterprise market becomes saturated, providers will increasingly offer processing and functional capability to the SME to fit their more limited resources. These methods include "the ownership of the system to be shared by a group, providing web-based applications, providing scalable models, etc. These will help to bring down the total cost of ownership . In addition, the implementation will take place in steps. So, it would mean deployment of resources in phases and this will give a chance to correct many problems detected during the initial stages" (Madhani, Saraswat & Gor, 2007, p.38).

The effect of these limitations on SMEs has produced a surprising result on their IT capabilities. Rather than progressing to more sophisticated levels of e-commerce or even maintaining their place, most SMEs are actually regressing, according to Mendo, Fitzgerald, & Martinez (2009). Internet use remains at the level of email and simple web page design. This leaves them ill-placed to cope with internet based initiatives of large entities or

government. An important aspect of an entity's business computing repertoire is its use of the internet via its website. The majority of SME websites are, however, brochure-ware—a static, promotional one way communication resource (Carey, 2008). As large enterprises develop technology further, SMEs lag behind. Mendo & Fitzgerald (2005, p. 679), commenting on the development of SME technology, state

> The picture is perhaps even worse because there is evidence that many SME web sites that were initiated and developed have not progressed over time but remain in a "dormant" stage for a period of many months or even years. Indeed, several studies of e-business in the UK have actually reported a decline in the number of SMEs implementing trading online and perhaps surprisingly, the use of web sites and email has also declined.

One of the only exceptions to the regression in technology was discovered by Wu, Mahjan, & Balasubramanian (2003), explaining that strong customer orientation within a business results in a high technology uptake. Such entities take strong steps to be at the forefront of customer service, with technology a way to achieve this. According to Levy, Powell & Worrall (2005, p. 4) "SMEs do not see Internet adoption as an IT issue but as a business one. SMEs that are attracted to internet-based commerce tend to be more entrepreneurial, risk takers, innovative and, invariably, creative."

Differences Among SMEs

It is not only that large enterprises and SMEs differ, it also transpires that firms within the SME category have vast differences. The framework established by Levy, Powell & Worrall (2005) illustrates these distinctions and demonstrates SMEs are not homogeneous. Differences between SMEs that may be material to the MCS decision include strategic focus, customer orientation, business growth, business processes, owner attitude and social networks. In addition, many SMEs are governed more by social and family issues such as preserving wealth, the owner's personal identity and generational continuity (Parker & Castleman, 2007).

International differences.

There is variation between SMEs in different countries. MacGregor & Vrazalic (2008) report differences within Europe, the USA and Australia. The differences in resources previously described affect comparisons between countries. For example, Suhendra, Hermana &

Sugiharto (2009) attribute low IT usage in Indonesia to the perception that it is expensive, the lack of resources and infrastructure and low skill levels and desire of employees and organisations to adopt technology. Mendo & Fitzgerald (2005) demonstrate that SMEs do not adopt technology in stages or in a linear fashion due to differences in resources and knowledge. The diversity and individuality of each firm causes their development to advance differently, even within particular industries or the same country.

This consideration applies when considering results in New Zealand. According to Al-Qirim (2006) the characteristics that identify New Zealand as being unique limit the take up of IT. In particular, noted were that New Zealand's economy is dominated by micro-sized businesses (fewer than five employees), that it is geographically isolated with a small population, separated from the rest of the developed countries by time zone differences. The characteristics limited e-Commerce opportunities.

In addition to attitudes and beliefs, the infrastructure for technology in many developing countries may not be in place to enable e-commerce to be implemented. This includes having unreliable power and communication systems, undeveloped systems for physical delivery of goods and a lack of a developed legal and regulatory system to control transactions.

Cassar & Ittner (2008) caution that engagement of external accountants may differ across countries, based on historical, social, political or cultural norms. The role of external accountant and legal or compliance requirements may differ between jurisdictions. Characteristics of business owners also influence the decision on engaging external accountants (although not necessarily the owner's own accounting experience or qualification).

The focus of the current study, on SMEs in New Zealand, while reflecting these differences, may be limited in the findings being able to be generalised internationally. Consistent with the research, exploring in detail the particular area enables an understanding to emerge. This would lead to a future comparison to other regions to synthesise the overall understanding of issues affecting system adoption.

SMEs in regional areas outside of major cities, similarly vital for growth and employment, lag behind their urban counter-parts in their uptake of technology. MacGregor & Vrazalic,

(2008, p. 32) explain why: "A number of barriers have been noted in the literature that are inherent to regional areas. These include poor cabling and frequent line outages compared to major cities, deterioration of long established client links and business practices and geographical separation from vital infrastructure." In NZ, rural and remote areas are not well served by infrastructure and coverage available in urban centres, an effort the current government is seeking to redress (Telecommunications, 2010).

Cultural differences.

Cultural differences between jurisdictions and countries affect the outcomes of system implementation and comparing results of research. Cultural differences refer to differences identified in workers' reactions to managers, populace's reaction to change and risk taking, educational opportunities, language differences and the degree of individualism compared to group collectivism and coordination. Different places have different expectations of working conditions, facilities and work flow. Demographic differences influence whether an individual business owner will adopt technology and, if so, to what extent (Chen & McQueen, 2008). These differences are significant in evaluating management systems, as results from one jurisdiction may not produce a similar result in another. Ratings and expectations derived in studies in one country do not match results in others (Soobaroyen & Poorundersing, 2008). Cultural differences including distrust and preferring face to face contact also hinder e-commerce (Hawk, 2004). The effect of differences in culture are so significant, according to Deng, et al (2008) that they can make the difference between success and failure in the adoption and implementation of information systems.

Cultural variations have been identified in studies examining implementation by SMEs in Russia (Hartarska & Gonzalez-Vega, 2006), in developing countries (Kartiwi & Macgregor, 2007), in China (Fathian, Akhavan & Hoorali, 2008), and in Thailand (Deng, et al, 2008). A study comparing countries found distinct differences. Cultural differences between countries and their effect on understanding and perception were the foundation of Hofstede & Hofstede (2005). Levy, Powell & Worrall (2005) find that different countries have different motivators for e-development implementation within the company. In Singapore, it is a strategic commitment. In Chile it is organisational readiness. In the UK it is dictated by the SME owner.

Cultural differences are especially acute with outsourcing, even with common language. Iacovou & Nakatsu (2008, p.92) describe how "there is a major chance for misunderstanding because much of our language is based on cultural assumptions. Due to these differences, even simple information exchanges during the project evaluation can become lengthy and complex." Cultural differences between countries can cause misfits of technology when the package has been written overseas, even when adapted to local requirements (Wang & Chen, 2006).

Effect of geographical differences.

Research has also not determined "whether national culture is 'sticky' to individuals, and how much people who have been born, raised and started a business career in one culture will tend to continue to use their home country culture when starting and operating business in a new country with significant differences in cultural dimensions"(Chen & McQueen, 2008, p.49).

Although effort has been made to develop a framework that applies across borders (Chen, et al, 2008), this remains an area for further study. In part because of the high cost of performing a comparative study across countries, studies have focused on singular jurisdictions and local areas (Mohamad & Ismail, 2009). Unless firms seek special alliances or relationships, research shows their ability to gain knowledge or expertise is technologically and geographically limited to their own area (Rosenkopf & Almeida, 2003). While this study is justified in focusing on New Zealand SMEs, its application to other jurisdictions is not assured.

Age differences.

Age of the business also affects technology adoption. SMEs 20 years old or older were less likely to adopt technology "because they and their customers were too set in their ways to make alterations to suit an e-commerce strategy. Similarly, very young businesses (those in business for less than two years) were often insufficiently organised to really contemplate e-commerce" (MacGregor & Vrazalic, 2008, p.35). Part of the impact of age of the firm is its size. Younger, small firms are capable of maintaining informal management systems until they reach a certain point when formal management systems become necessary—usually due to size (Davila, 2005).

Summary.

Eliminating results and effects derived from studies of large enterprises and considering differences between SMEs on an international, regional and even individual basis leaves the area quite open for further study. In the next section, research regarding SMEs governance and management with regard to system implementation is examined.

Understanding About How SMEs Operate

With SMEs constituting such a predominant position in the economy and on social impacts, increased understanding of their fundamental composition is useful. Understanding the nature of SMEs helps to promote conditions that lead to their growth and success and eliminate those that hinder. It also helps to explain the activity of a significant component of personal interactions. Of SME activity, computerised management systems form a growing part. This is a view held by many commentators, summarised by van Halem (1996, p.1)

> Although the introduction of computers and information technology has not been a priority for entrepreneurial companies, the use of IT is no longer an option but is increasingly seen as key to the survival of new businesses and critical to the successful growth of entrepreneurial ventures. Consequently, successful planning and implementation of IT have become a necessity for entrepreneurial companies.

Far from all SMEs choose a growth strategy.

> In managing SMEs, a company can take growth, stabilisation or even extract strategy to influence its responses to both external competitive advantage and internal strength. When a company pursues a strategy of stability, it passively protects its current market share to be in able to seize favourable opportunities in the future; when a company pursues a contraction strategy, it seeks to eliminate external/internal weaknesses by downsizing, withdrawing funds cutting budgets, and other means (Lu, 2006, p.529)

Research indicates that some SME managers avoid opportunities for growth and are not willing to engage in growth and acquisition opportunities. One reason widely held is that some small businesses are not primarily motivated to maximise profits but act for other reasons. The causes for these reasons are not widely known (Wiklund, Davidsson & Delmar, 2003). When firms that have employed non-growth strategy are considered, their requirements may differ.

Importance of introduction of MCS.

The introduction of systems signals a number of important milestones in an SME. First it signals that the SME is growing, rather than remaining stagnant. The adoption of management control systems and company growth prove to be inter-dependent (Davila & Foster, 2007). Ramsey, Ibbotson & McCole (2008, p.647) outline the potential consequences of non-adoption of technology: "In particular non-adopters have a higher level of inertia and resistance to using new technologies. In the long run that philosophy could lead to isolation within their relative professions and a consequent micro business structure that may eventually lead to stagnation, decline and even eventual death of the business."

The introduction of management systems also signals changes in relationships with customers and suppliers. An immediate change is in responding to pressure to communicate electronically that they apply. Applying management systems to internal administration tasks affects how customers' needs are attended to in multiple ways. First, applying the management system has the potential to indirectly influence customer satisfaction by providing employees with a comfortable, supportive, and efficient working environment to better deal with customer needs. In addition, a major task for any business in information-intensive environments is the collection and coordination of various pieces of information related to each customer. Wu, Mahjan, & Balasubramanian (2003, p. 433) note "e-business initiatives in internal administration can help a business build stronger relationships with its partners and suppliers by sharing information on a continuous basis and by implementing accounting/financial management practices that enable quicker, more transparent transactions." In their study of SMEs, Raymond & Bergeron (2008) used a firm's IT capability to assess its strategic positioning, finding those with greater capabilities were better positioned.

Early stage development.

Another reason to examine SMEs' adoption of systems is to gain an understanding of their development. Small firms, especially at start up, have substantial freedom to choose their structures, organisation and operating procedures as they are unencumbered by external regulation, market scrutiny and, especially, financial statement reporting requirements (Cassar, 2009). Prior to adoption, in the early stages of selection, there is opportunity to ensure systems will interface with key customers and suppliers. This not only may lead to

efficiency but build and strengthen relationships and mutual dependency Mahjan, & Balasubramanian (2003). The changes of systems are linked to this development. As SMEs grow, size necessitates changes in management structures, means of operating and information measurements. Information systems are integral to this change process meaning they often need to change (Powell & Levy, 2006). The growth of computing systems moves along with other events. Davila & Foster (2005) find that as they grow, companies find previous, informal unstructured systems to become inadequate to handle the number of communications and the need for timely information. Other events are associated with growth and adoption including hiring a CFO, developing operating budgets, seeking external finance, expanding internationally and replacing the founding CEO. (The role of the founder entrepreneur CEO is discussed in detail in the section "Management Influence".) It also helps gain insights into the entity's establishing itself in the marketplace. Examining the adoption of systems presents the opportunity to examine all of these events.

Models for system implementation break the process into several discrete steps of varying complexity, including pre-planning and selection, implementation testing and training, final preparation, go-live, post implementation and follow up. These steps have extensive sub-parts that vary from project to project. Models and frameworks for research have yet to establish a consistency that facilitates ease of research, due to these differences (Vathanophas, (2007). Examining entities' experiences at each of these levels adds to the understanding of the implementation process.

Factors that influence MCS adoption.

The factors that influence the decision to embark on a system implementation project have been enumerated in a number of studies. Wu, Mahjan, & Balasubramanian (2003, p.432) point out the normative pressures that effectively coerced organisations into implementation of systems:

> In the context of e-business, normative pressures are particularly relevant because the early growth stage of e-business was characterised by popular hype of great volume and intensity. Numerous comments in the popular press (and, to a lesser extent, in academic fora) forecasted that businesses would be left hopelessly behind if they did not accelerate their movement into the e-business arena.

Mehrtens, Cragg & Mills (2001) identify four categories of factors that influence technology adaption in SMEs:

1. Characteristics of the firm

2. Competitiveness and management strategies of the firm and, in particular, the CEO

3. Influence of external parties to adopt processes

4. Characteristics of new technologies.

Celuch, et al (2007) concur, as they point out that firms that are more market focused and connected to their customers are more likely to use internet based facilities, particularly as small firms' marketing strategy is less formal and structured. Consistently, firms with a weak market orientation are less likely to use the internet. From the beginning of IT research, empirical evidence indicates that lack of technical knowledge and economic costs are two of the most important reasons that SMEs fail to adopt technology, but that pressure from trading partners is the main reason leading to adoption. Even when a firm is ready to adopt technology, or has a desire to do so, without the pressure to adopt technology, it is not likely to do so (Iacovou, Benbasat & Dexter, 1995). Chan & Lin (2007 p.212) conclude

> this study proves that there is a relationship between environmental factors and the adoption of ICT. Website comprehensiveness increases with increasing communication requirements. Highly competitive environments drive enterprises to adopt the internet to acquire first mover advantages, or to avoid being driven out of markets. SMEs in highly competitive industries have no choice but to follow their competitors in adopting internet communication technology. Support and incentives from the external environment also lead enterprises to pursue website comprehensiveness.

Finding an imperative from outside pressure would seem to be an important factor to identify.

Organisational readiness.

An area receiving extensive attention in describing system implementation is "organisational readiness". According to Ren, Ngai & Cho, 2010 (2010, p. 458), it is a prerequisite to IT adoption. Organisational readiness

> refers to whether a firm has sufficient technological readiness and financial resources to undertake IT adoption. Financial readiness refers to a situation of financial resources being available for IT to pay installation costs, implementation of any subsequent enhancements and on-going expenses during usage. Technological

readiness refers to the level of sophistication of IT usage and IT management in an organisation.

A higher level of firm readiness and willingness of the firm leads to further system integration and, ultimately, greater benefits (Iacovou, Benbasat & Dexter, 1995). Before a firm is ready, even if a system is established, it will not attain the desired level of acceptance. Managers also need to be ready and Mehrtens, Cragg & Mills (2001, p. 172) find "managers need to be convinced of the benefits before they fully embrace the Internet, although benefits can take many forms, including improving company image. Importantly, it does not seem that a lack of financial resources is at the heart of this delay". Besides the readiness of the manager, Ramsey, Ibbotson & McCole (2008) find statistically significant differences between organisations adopting technology and non-adopters of technology. Among the differences were staff capabilities, financial resources, service/product fit, management commitment, more customer-orientation, and internal environment conducive to developing staff skills in the use of technology, all aspects of organisational readiness.

Firm growth.

The speed with which a firm grows also influences its technology uptake. According to Davila & Foster (2007) the adoption of management control systems is associated with fast growth companies. Computerised management control systems replace the initial, informal systems when they are no longer adequate. Progressively, firms build up their financial and human resource management systems to cope with growing capital investment requirements, larger staff, approval procedures for operating expenses and routine analysis of financial performance against targets. Overall, fast growing firms' attributes can be summarised as follows: "enthusiasm of top management, compatibility of e-commerce with the work of the company, relative advantage perceived from e-commerce and knowledge of the company's employees about computers (Al-Qirim, 2007).

Depending on when in the business life cycle firms adopt technology seems to differentiate the systems they adopt. Early adopters of technology have been more concerned with internal issues of compatibility and benefits that may accrue. Late adopters are more influenced by peer pressure and demands of customers and suppliers (Al-Qirim, 2007). Their goals also differ. "Early adopters are more likely to seek efficiency and profit gains, whereas

later adoptions may reflect the pursuit of legitimacy. Since such institution-driven adoption (or 'bandwagon effects) are driven by the perceived need to 'keep up' such adoptions may yield few benefits to the adopting organisation, at least in the short run." (Wu, Mahajan, & Balasubramanian, 2003, p.427). As SMEs move through their initial, birth phase to their growth phase, informal interaction can no long solve coordination and control problems. More formal MCS become necessary. This is an opportune time to examine the entity (Davila, 2005).

Pressures for implementation.

Firms in general also have pressures imposed on them that lead towards implementation of systems. They come from both internal pressure of work demands and expectations of employees and also external pressure of suppliers and customers. Both forms of pressure affect firms due to the nature of systems and their "pervasive impact across the entire span of the organisation's structure (from the procurement department to the field sales force) and across a range of its business processes (from internal administration to supply chain coordination)." (Wu, Mahajan, & Balasubramanian, 2003, p.426). For internal pressures, management control systems facilitate growth by overcoming the limitations of informal management systems that require constant personal interaction. As the company grows, direct observation and participation becomes too difficult. "Without formal systems, the number of interactions required to move information around the company increases exponentially with the number of employees. Communication becomes too costly if management control systems are not implemented" (Davila & Foster, 2007, p. 909). External pressures become a driver for system implementation. Unless and until external pressure to adopt IT is perceived, it is less likely a firm will do so. According to Iacovou, Benbasat & Dexter (1995, p.476) "In the absence of external pressure, the only mix of factors that leads to adoption by an organisation is a combination of both high organisational readiness and high perception of benefits. The lack of either will hinder adoption."

Benefits of implementation.

The benefits sought by firms in considering system implantation or upgrade are wide reaching. First, according to Hernandez, Jiminez, & Martin (2008, p. 114) "the computerisation of business management systems is considered an attractive opportunity,

i.e. one which permits the company to distinguish itself from the competition and, additionally, to generate extra profits." In seeking these distinctions, firms engage in various activities. In web site re-design, Mendo, Fitzgerald, & Martinez (2009) find the predominant reason that SMEs cite relates to changes made to the business internally (refreshing brand image, devising new look, new services/product capability, re-branding, company restructuring). Internet strategy and web site functionality, while important, was not the driving reason.

Second, efficiency gains were found to be a cause for system change. Implementation of software requires the firm to determine the extent it is expected to increase efficiency in the performance of business functions, its ease of use, the extent of training required at implementation, the resources required, the communication of efficiency gains to employee users, and the overall impact on the operation of the firm (Hernandez, Jimenez & Martin, 2008). For example, a website provides efficiency for the business by

> reducing the amount of calls they received (all of which required staff to handle) and in eliminating the need for production and distribution of marketing materials (e.g. pamphlets, brochures, and newsletters). Websites were seen as an important tool for the purpose of saving on administrative overhead and direct marketing costs (Mackay, Parent & Gemino, 2004, p.151).

This has been affirmed by others, e.g. Mendo & Fitzgerald (2005) in explaining the reasons for companies changing their web sites, record the main drivers as being increasing effectiveness or efficiency and better accomplishing the organisations' goals and objectives. Systems provide the opportunity to serve customers more efficiently as well. The application of e-business initiatives to internal administration tasks can affect customer satisfaction in multiple ways. First, such application has the potential to indirectly influence customer satisfaction by providing employees with a comfortable, supportive, and efficient working environment to better deal with customer needs. In addition, a major task for any business in information-intensive environments is the collection and coordination of various pieces of information related to each customer (Wu, Mahjan, & Balasubramanian, 2003). E-commerce, applied appropriately and in suitable circumstances, can enable SMEs to compete better with larger firms, maximise use of limited resources, reach wider markets and provide 24 hour access to their facilities (Mendo, Fitzgerald, & Martinez, 2009). Yet, as experience all too frequently illustrates, caution is required with the use of systems, as they

do not always lead to better customer service. Ramsey, Ibbotson & McCole (2008) cite the careful balance required of firms in maintaining their established relationships and supply channels with customers with the need to be innovative or keep up with changing markets. Efficiency gains are an important driver for maintaining computerised management systems.

SMEs have the structure to optimise the efficiencies of management control systems. Alignment between business plans and IT capability is an important benefit for SMEs (Chan & Reich, 2007). They indicate alignment is easier for SMEs, as communication is high and individuals share many roles. So too with internal communication. Davila (2005) suggests this is because informal communication and control are effective and contribute to the benefits of management control systems.

Implementation effect on internal controls.

As described above, SMEs have fewer internal controls than large enterprises, yet internal controls are a critical business process. System implementation typically enhances the level of internal controls available, although, as always, structures and cost benefits must be applied. In the survey conducted by Arvind, Pranil & Joyti (2010), firms with computerised accounting systems had more internal controls than firms without computer systems. Consistent with this finding, they also determined the incidences of detected fraud in these firms were lower. They stress that controls are important in a computerised environment, especially where staff numbers are lower. Lower staff numbers occur as introduction of computerised accounting systems leads to greater concentration of responsibility in fewer individuals. Fewer employees performing the same task reduce segregation of duties and increase the risk of irregularities. More internal control procedures need to be considered. The structures and safeguards from systems facilitate establishing suitable internal control procedures.

The ability to prepare financial statements through the system also provides advantages to the firm. Despite the lack of legislative mandate for financial statement preparation, Cassar (2009) argues that their preparation is necessary for small firms, and provides important, useful information. Firms reliant on low price sales need frequent assessments of performance. Firms wanting to assess value also need this information. Other similar situations benefit from that information. Preparation of financial statements itself provides

useful indications about small firms. It indicates something about available resources given costs of preparation. It indicates market position through providing operating result information overall. It also indicates the extent of involvement of owners and managers, based on agency theory. Preparation of statements must indicate an expectation of significant benefits. Having established financial reporting through the system would also expedite the process required as and when a firm becomes subject to a jurisdiction's financial reporting requirements. In NZ this occurs when a company moves away from being an "exempt company", based on the size and ownership criteria applied by the Financial Reporting Act 1993.

Order of MCS adoption.

There appears to be a consistent order of adoption of systems. According to Chen & McQueen (2003, p.27) "A review of the literature relating to e-commerce adoption in small firms reveals that the adoption of e-commerce typically proceeds in a set of sequential stages." For the e-commerce sector, this stepped process begins with email communication, continues through web-site orders and culminates in on-line payment capability. Davila & Foster (2007) report on the sequence of adoption of various management control systems. Frequently, the first to be implemented is financial planning systems (operating budgets, cash flow projections and sales projections). Within these systems, there is a further consistent order of adoption in Davila & Foster (2005, p. 1051). They note "forward looking systems (operating and cash budgets) follow a similar pattern to each other and are adopted sooner than financial monitoring systems (variance analysis, operating expense approval, capital expenditure approval, product profitability, customer profitability and customer acquisition costs)."This indicates their perceived value, particularly when compared to other systems. Second are financial planning, strategic planning and human resource planning. Third, evaluation techniques for financial results and human resources, implemented more commonly in years four and five. Sales and marketing systems were the least common to be implemented over the five years tested. Powell & Levy (2006) describe the set-up of management technology as it develops in an SME:

> Management information systems in SMES are typically simple in the early stages of a firm. Spreadsheets are used to manage accounts, although growing firms usually adopt simple accounting packages. As firms grow, managing customers effectively becomes important, and databases begin to be used. Many SMEs have local area

networks and use external e-mail. Internal e-mail is used in larger SMEs in order to improve communication. Many SMEs have developed brochureware Web sites. However there is little evidence of successful e-business in SMEs.

In their earlier research, Davila & Foster (2005, p. 1041) concluded "budgeting is the accounting system that is first used, while advanced accounting systems are present only in firms with strong beliefs about their future success."

Although research generally finds there is a pattern, it can vary according to the industry within which an entity operates. In the construction industry, for example, because of the inter-relationship of the supply chain in the construction process, including the customer relationship, the scope for IT based transactions and communication is high (Robeiro, 2002). This leads to a diverse range of systems being established. In the not-for-profit sector, connectivity and e-commerce have significant roles for voluntary organisations as they have partners with similar goals, structures and requirements throughout the world. The uptake in voluntary organisations lags behind profit-based organisations and research on the sector is lacking (Mackay, Parent & Gemino, 2004). In the service sector, SMES not only fail to develop a strategy to implement technology solutions, they fail to implement technology at all (Ramsey, Ibbotson & McCole, 2008). Overall, historically, within industries, there are different reactions to change.

Resistance to change.

Despite the benefits of adoption in implementing systems or making changes or upgrades, firms must overcome the resistance that change brings. Among the reasons for reluctance to adopt business management system are comfort and familiarity with existing ways of processing, a perception that IT spending is an expense rather than a strategic opportunity and the concern amongst employees that system implementation will lead to redundancies (Luliana, 2006). SMEs also fail to gauge the effect of

> altered product options as a result of the introduction of IT, the alternative market and customer approach, and the desired forms of cooperation required to make it work. Consequently, firms that have established an existing competence that yields profits and expanding revenues may find it difficult to justify electronic commercialisation, as they may not wish to risk destroying the market they currently serve so well (Ramsey, Ibbotson & McCole, 2008, p.631).

An important aspect of system implementation is the users of systems. Users are large contributors to success or failure of the system implementation. Chua (2009) traces the failure of projects' implementation to the people involved rather than hardware, software, design or budgetary resources. Their inexperience and unfamiliarity with the system are leading factors in failure. MacGregor & Vrazalic, (2008, p. 30-31) list characteristics of SMEs documented in the research that explain users' reluctance to adopt technology:

1. SMEs have small management teams, with poor management skills, short range perspectives, intuitive and unplanned decision making;

2. SME owners tend to be independent, secretive, firmly entrenched in family values and more reluctant to spend on IT;

3. SMEs maintain informal record keeping procedures and inadequate planning;

4. SMEs have difficulties obtaining finance and lack technical knowledge, skills and staff;

5. SMEs are more reluctant to take risks and have high failure rates.

Part of the reason for user resistance is that implementation requires existing staff members to engage in extra activity on top of their current duties. The extra activity, including training, additional or double processing and covering for others in training, is commonly under planned. An effective and efficient implementation is thus thwarted (Luliana, 2006). Resistance can be explained by the environment under which SMEs operate as it relates to IT implementation.

> SMEs typically have fewer slack resources to absorb the shocks of unsuccessful investment in IT adoption, which means that they are more sensitive to uncertainty and unexpected risk. Organisational decision makers have strong preferences for certainty, stability and predictability in organisational life. When the environmental context is highly uncertain and unpredictable , the organisation will exert great effort to re-establish control and ensure the stability of future organisational outcomes. SMEs with fewer flexible resources cannot afford the loss caused by volatility (Ren, Ngai & Cho, 2010, p.461).

The kinds of systems used by SMEs contribute to their resistance. Ramsey, Ibbotson & McCole (2008, p. 638) find

> the vast majority of firms had no integration between their key internal systems and internet applications. Of the businesses that did have partial or complete integration,

service/product databases and customer databases were more likely to be integrated with website applications. There was no integration of accounting systems among 83.2% of the population. Overall, the level of electronic commerce sophistication in the majority of firms surveyed is "primitive".

Contrary views on SME implementation have also been found in the literature. These differing views may simply arise from taking a different perspective on system implementation. Resistance to implementation of computer systems has traditionally been viewed negatively, often in the context of opposition and inhibition. More recently, it has been viewed differently, as a positive reaction, in the context of overcoming genuine shortcomings of systems or reacting to inability to provide support for the functions it was intended (Fernley & Sobreperez, 2006). There is also an expectation that there will be stability with system implementation. But despite all that goes into system implementation, businesses must accept "that an ERP implementation is never truly over and that no one is ever allowed to get too comfortable with any business practice" (Luliana, 2006.p.6).

In analysing success or failure of system implementation and its on-going effect on the firm, research needs to consider traditional success metrics in examining how the systems have been applied. DeLone & McLean (2004, p.31) put this requirement in perspective when they note

> basic business principles still hold. The laws of economics have not been rewritten. The long-term success or failure of companies is determined by their ability to generate positive net revenues. Similarly, there has been no change in the fundamental role of IT in facilitating business transactions and communicating relevant information to decision makers. However, the decision makers now include customers, both internal and external. Time compression and the magnitude of change may be dramatic, but IT still has the same goals and objectives.

Traditional success criteria apply equally since the same factors that need to be present for a project to be successful are, not surprisingly, noted when projects fail. They include those identified as "(1) lack of effective project management skills/involvement, (2) lack of adequate user involvement, (3) lack of top-management commitment to the project (4) lack of required knowledge/skills in the project personnel, (5) poor/inadequate use training and (6) lack of cooperation from users" (Chua, 2009, p.32).

How Systems are Used by an SME

The investigation of systems implemented by SMEs requires a degree of understanding of how predecessors have used them and applied their outputs in the workplace. As has been shown, in a changing environment, especially with high uncertainty, small businesses need and seek out information to help them. In these conditions they are more likely to require systems that provide help (Dyer & Ross 2008). SMEs tend to use systems in two ways—exploitive and explorative. The former refers to the routine processes of daily activity while the latter refers to the innovative search for new functions and helpful outputs (Wilkin, 2009).

Exploitive use.

Looking first at the exploitive use of systems, requires review of the core software, the way it is used and the work arounds to limitations that arise. The core software for SMEs in general is of the 'off the shelf' variety rather than either specialised software written for an enterprise's particular purpose or built in with modularity that can be adopted when installed for specialised purposes. SMEs' limited resources and lack of expertise contribute to this limitation, while suppliers find it uneconomical to provide the support required to design specialised software (Chen, et al,2008). For example, applications for electronic commerce have been quite limited for SMEs with their use of computing limited to communication via email, advertising via a static website's brochureware, or an even more basic web presence. This is despite the number of studies that document the benefits of e-commerce (Mohamad & Ismail, 2009). The off the shelf nature of software is not always constraining. For instance, the similarities in the construction industry enable the standardisation and modular design of software packages to have a wide appeal. Although Robeiro (2002) advises that each firm needs to have a business strategy, the firm is able to advance its aims via standardisation in general because of similarities. Yet the range of activities needs to be understood.

Explorative use.

Although constrained by the proprietary nature of software typical for SMEs, there is still the ability to use the software in an explorative way. The nature of off the shelf software opens up the needs for workarounds and additional training (the explorative use of the

system). It has been noted that understanding the implementation process of a new computer system requires more than understanding the properties of the software itself. As the software cannot cover all circumstances, users develop workarounds—procedures and practices to handle exceptions to proscribed workflow. Workarounds consist of procedures used to gather necessary information, overcome limits within systems, combine results of incompatible applications and overcome difficulties in generating what the entity requires. Understanding the workaround and its impact on the results is necessary (Fernley & Sobreperez, 2006).Studying workarounds in system implementation is especially important when examining the emerging nature of activities, the critical and fast changing decisions that are made and the dynamic interactions between agents that appear difficult for an information system to support. Studying workarounds needs to distinguish system limitations from user resistance. End users of new systems commonly resist implementation, and strategies are required to minimise resistance. User resistance to new systems may take many forms but the five most frequent are sabotaging computer equipment, employees being absent or late for work, employees denigrating the system, employees not using the system and continuing to use the incumbent system and tampering with data. "Many of the same reasons for resistance can be found with small business applications as with large informational technology implementations" (Adams, Berner & Wyatt, 2004, p. 56). The end result of workarounds has often been that of innovation. Wilkin (2009) finds that adopters of standard systems develop innovative methods to deal with system limitations or unique requirements. This was especially prevalent when customer satisfaction was involved directly and occurred even though the product developer does not become involved in the working environments to gain insight to enhance future development.

Training of users of the system is an important aspect to overcome lack of familiarity, resistance and limitations. For most SMEs, in house expertise is not available so that external training and consulting is required. While training in systems' usage has been perceived to have a positive effect, when the effect is not measurable or significant, Huang (2007, p. 472) concludes "Since most of the companies in the present study didn't have internal support for their information systems, it may be the external support did not meet

their specific needs. This indicates the importance of having and developing an adequate information systems support for SMEs."

In addition to the initial system and the changes wrought by its users, upgrades also affect how the system is used. It is not only the initial installation that needs evaluation but also the ongoing upgrades. Upgrades are needed to maintain functionality, adapt to changes (external, legislative, growth and development) and, generally, to compete (Madhani, Saraswat & Gor, 2007). The effect of upgrades in assessing the system has been documented. One must also distinguish between upgrades of systems and installation of new systems. In the former, much of the infrastructure and procedures are in place while with new systems or with start up organisations, these can take several months to establish (Devaraj & Kohli, 2003).

The combination of workarounds and upgrades changes the system itself. Workarounds and upgrades result in a permanent change in the system. "If such exceptions are regular and similar actions need to be taken repeatedly, then ideally the supporting information system should dynamically evolve to incorporate them with the underlying rationale for workarounds being explored when considering future versions of systems" (Fernley & Sobreperez, 2006, p.355). Understanding the effect of systems on the success of the organisation requires understanding of how the system has been employed since designing systems to suit all users is impossible, thus requiring an understanding of the innovations to its deployment (Wilkin, 2009).

Synthesis of exploitive and explorative use in technology acceptance.

Many commentators have described the importance of studying the system as a whole, both its exploitive and explorative components. Understanding how a system is in use requires understanding that its use is collaborative, much more than an accumulation of individual uses. This collaborative use needs to be included in the research (Burton-Jones & Gallivan, 2007). Grandon & Pearson (2004) point out, through research, the many variables that must be considered when determining whether IT implementation has been successful. They include the effect on and changes to firm strategy, the bringing together of CEO and technology personnel, the effect on external partners, product selling cycle, overall marketing effort and others. Both system implementation and subsequent adaptations require measurement and understanding of user requirements of function (what can be

done) and application (how it is done). Studying the end user as is common in many studies (Deng, et al, 2008) contributes to this understanding since studying the system alone is insufficient to understand it. Fernley & Sobreperez (2006, p. 353) explain

> Many systems are unable to employ and utilise the flexibility common to human interactions and indeed on occasion they actively inhibit such skills and only work well when circumvented by users. This may be a feature of information systems in general which, it has been argued, suffer from the imposition of procedural plans and may not allow for, anticipate, or support situated actions such as altering, sharing, executing and correcting activities in a cooperative manner.

As will be noted below in the section on models and frameworks, ease of use and usefulness are well established measures for determining whether a system has been accepted and has had a successful implementation. As a measure of system success, Huang (2007, p.471), distinguishes between perceived ease of use and perceived usefulness. Finding that respondents have a more favourable reaction to a system's implementation when it is easy to use than their reaction on what it is used for, led to the conclusion that

> users are ready to face some difficulties to get the information they need. But if the difficulties they have to face are high, or perceived so for that matter, they will seek other sources to meet their information needs regardless of the perceived usefulness of the system. This emphasises the importance of perceived ease of use in developing new systems for SMEs.

Derived from the results of their survey, Hernandez, Jiminez, & Martin (2008) conclude what may seem to be obvious, that the ease of use of software leads to greater use and usefulness and the greater willingness to use software will be the final outcome. Statistically, Grandon & Pearson (2004) found that perceived usefulness and perceived ease of use are the two most influential reasons for adoption of IT, although compatibility with firm culture and systems and external pressure from suppliers and customers were also significant. Other measures assist in examination. Xie, Liang & Boulton (2008) cite extensive research where effective IT governance is the strongest predictor of the value of the entity derives from the system. Levy, Powell & Worrall (2005) summarise the drivers for technology adoption and the inhibitors to it. The drivers include reduced operating costs; sales and purchasing cost reduction; improved range and quality of services to customers; increased speed in dispatch; finding suppliers; avoiding loss of market share; market intelligence, and improved trading relationships. The inhibitors include implementation costs; limited financial resources; need for immediate return on investment; concerns about

confidentiality; fear of fraud; insufficient time spent on planning; insufficient knowledge or experience of information systems; inexperienced owner; complexity requiring new skills; existing systems limiting future developments; lack of trust in external suppliers; and limited n-house it skills. In SMEs the different levels of use, depending on both the function (data entry, reporting and analysis, sales and marketing) and the role, are often performed by the same person. Fernley & Sobreperez (2006) summarise the theoretical framework that has emerged to describe the range of acceptance of computer systems. Acceptance behaviour ranges from compliance to resistance and motives range from negative to positive, the latter to improve function. The way resistance is documented is via workarounds which can hinder output, be harmless or be necessary to achieve desired results.

The overall basis for examination of systems was summarised by Burton-Jones and Gallivan (2007). Examining actual system usage demonstrates that use is interdependent. Individuals do not work in isolation, but rather by varyingly complex interaction. Examining systems on multi-levels provides opportunities to understand links and relationships between individual users, user groups, collectives and the system as a whole. Looking at less may lead to the omission of observance of connections or informal networks. These multiple uses need to be understood.

Summary.

Understanding about an SME can be found in some measure through its structure, development and growth through it adoption of systems. This avenue of understanding provides valuable insight into how the SME operates, what inputs it requires and what it may add to the economy. A greater understanding of the system implementation process through the research will add to this knowledge.

Although this section has analysed the benefits and costs to the firm of system implementation and its potential effect on employees, the background to understanding effects of system implementation requires further analysis on the decision maker in the firm. There is a view that previous research has examined the implementation of software (of all types) through the reactions of employees as end users. According to Hernandez, Jimenez & Martin (2008) this has been the exclusive approach but suffers from certain fallacies. These arise

because the perceptions of each employee depend on their specific conditions. Thus, the responses obtained may be influenced by the objectives of the employee (to keep his/her job, the possibility of promotion ort achieving greater -prestige) which are very different to those of the firm (to maximise profits or long term market value). Furthermore, the skill, dexterity and knowledge that each employer has previously acquired also conditions her/his interaction with IT.

Decision Making in an SME

Determining who the strategic decision makers are in a firm and how decisions relating to system implementation process are made is necessary so that the appropriate individual is approached and relevant information sought. This section examines research on who is likely to make such decisions in SMEs and how decisions are likely to have been made.

Research indicates there are potentially three decision-making influences on small firms: the Board of Directors, led by the CEO (usually the founding CEO); the CEO acting alone; or IT specialist employee or departments within the firm. Although each may be assisted by external consultants, the final decision and deployment of resources rests with one of them. The evidence of their influence is as follows.

Board of Directors decision making.

For the Board in an SME, composition and influence depends on certain factors. In considering the full effect of Board influences one has to consider both the direct formal decision making and governance activities of the convened Board and also indirect

> means of board strategic involvement such as evaluating the CEO and firm performance and providing access to external resources that may be important to the firm's strategy. It also excludes informal means of involvement that occur outside of formal board meetings, such as advice giving between individual directors and the CEO, familial interactions between CEO and relatives who sit on the board, and the workplace contacts between inside directors and the CEO (Fiegner, 2005, p. 631).

Use of venture capital is an important influence, as the requirements of the funders force changes on the structure and reporting requirements of the company, typically strengthening the authority of the Board. For instance firms not using venture capital adopted management control systems more slowly than those that used venture capital. According to Davila & Foster (2007), non venture capital firms also adopted strategic planning, human resource controls and financial planning more slowly as well. In addition,

they found that these firms grew more slowly than venture capital ones. These changes are often complemented by the departure of the founder entrepreneur CEO. Company growth was found to be quicker when the founder entrepreneur CEO was replaced, especially when venture capital was obtained. This may have been due to the founder entrepreneur CEO being able to appoint themself as CEO even when they may not have the skill or experience running a business (Ben-Amar & Andre, 2006). The replacement CEOs had more experience in business management and growing start up businesses. The explanation given by Davila & Foster (2007) for this result was the difficulty of founder entrepreneur CEOs to transition to manager and the emphasis venture capitalists place on replacing the founder entrepreneur. They explain that

> the psychological characteristics of entrepreneurs are such that while they enjoy the fluidity of new ventures, they dislike the formality required for growth. CEOs who adopt fewer control systems are replaced sooner; this is consistent with certain founders having difficulties in moving from an entrepreneurial to a managerial role—as measured by the level of adoption of a set of managerial tools—and being replaced (Davila & Foster, 2007, p. 909).

Their study found that adoption of a management control system served as a proxy for founder entrepreneur CEO turnover. These findings followed up on previous research which found that the effect of replacing the founding CEO in smaller firms on the adoption of management control systems was large (Davila, 2005). He attributes this to the inability of the founding CEO to put in place adequate controls.

The influence of the founder entrepreneur CEO diminishes over time regardless of whether there was venture capital. Although the founder entrepreneur CEO influence on initial firm structure and values has been decisively proven for start up firms and firms that are small, larger and older firms move through stages and the founder entrepreneur CEO influence diminishes (Ling, Zhao & Baron, 2007). Among the changes is the addition of more outside, non-management directors. They provide greater diversity of expertise and experience as well as demanding more accountability and controls within the company. As this occurs, the influence of the Board increases. According to Fiegner (2005) boards composed of external directors, especially with equity stakes, are more involved with decision making than boards composed of internal directors and associates. The latter composed boards were ineffective and dominated by the founder entrepreneur CEO.

The decision making patterns for SMEs in their growth phases have been described. During the growth phase, the adoption of management control systems is most predominantly found. This is when "coordination and control problems cannot be solved through informal interaction (as happens during the birth stage). Growth firms pay particular attention to increasing the formality of their management accounting systems" (Davila, 2005, p. 225). As decisions such as implementation of computer systems are affected by the governance structure of a firm, how the decision is made is worthy of investigation. The support of the Board is required in SME system implementation as "complex technological innovations of IT require resources and investment. If the system implementation is not successful, the SME that relies on it can suffer irreparable damage from which it may not be able to recover. Important IT activities for SMEs are risky ventures, only firms with a supportive top management officer will be willing to take such a risk" (Ren, Ngai & Cho, 2010, p.470).

Although their support may be needed, Boards' influence in SMEs is less than in large enterprises. Using results from a survey, Fiegner (2005) finds that Boards of small firms tend to be passive and uninvolved in strategic decisions. This applies even when there are external directors and dominates when the majority shareholder is CEO. In the latter, strategic decisions are made without any Board consultation at all. In making inquiries into the decision making process, one needs to look beyond the composition of the Board (size, number of outside directors, expertise) to include the expertise and experience of the CEO and the capabilities and skill of the subordinates (Fiegner, 2005).

Founder entrepreneur CEO decision making.

With the impact on decisions of the CEO being so much more important than the Board, the decisions made by the founder entrepreneur CEO is dependent on their personality. According to Chen & McQueen (2008) the motivations of founder entrepreneur CEOs can be synthesized to the characteristics in taking risks and being innovative, knowledge of computing, skills for increasing revenue, profit and market share, ability to improve efficiencies in ordering and other customer interaction and improving internal systems and productivity. Inhibitors to adopting systems are the converse of the motivators (as well as the technical complexities and resource requirements of finance and time). These characteristics of the owner, as with any person, derive from their values. The influence of values has also been examined in the research and found to be important. In noting the

importance of values (rather than personality) Ling, Zhao & Baron (2007, p.675) conclude "Entrepreneurs' values and advocacies can be implanted into the organization's culture and influence the entire team of employees over many years, even after the founders' retirement or death, whereas entrepreneurs' personalities primarily influence their own behaviours and are less likely to be transmitted to other members".Another theory influencing decisions is the "upper echelon perspective" which says that a firm's performance reflects the character and actions of the top managers of the firm, especially so in the entrepreneurship of a new venture (Ensley & Pearson, 2005). The impact of the CEO's values may change over time. The founder entrepreneur CEO was found to have an effect on firm performance as between younger/older firms and smaller/larger firms. Founder entrepreneur CEOs who prefer collaborative decision making achieved better performance in older and larger firms, with individualism more successful in younger and smaller firms. SMEs in China are particularly influenced by the CEO due to the cultural influence of high power distance, paternalism and centralised, directed management (Ren, Ngai & Cho, 2010).Thus it is important to identify the characteristics of the CEO. Ling, Zhao & Baron (2007, p.690) conclude on the importance of CEO values matching the needs of the firm.

> The performance of a unit depends on appropriateness of the leader's style for the situation. We adopt similar reasoning and suggest, correspondingly, that there is no best profile of personal values for founder-CEOs. Rather, what is crucial, we believe, is the appropriateness of the founder-CEOs' values for the specific challenges and situations their ventures face. The higher this appropriateness, the greater success the ventures will achieve (all other factors being equal). And, conversely, should this appropriateness decline-- perhaps because founders' value remain stable even in the face of major changes in the firm's circumstances or environment--adverse effects on firm performance may follow.

The importance of the founder entrepreneur CEO on the decision to implement or upgrade systems is particularly strong. According to van Halem (1996, p.3) "The single most important factor in successful planning and implementation of IT systems in small businesses is the owner's/CEO's enthusiasm for computing". Chen & McQueen (2008) connect the knowledge of and enthusiasm for technology of the owner/manager to the extent of technology implementation. Wu, Mahjan, & Balasubramanian (2003) found that the greater degree of top management support and expertise, the more extensive will be the adoption of technological systems. Upadhyaya & Mohanan (2009) found a strong link

between an owner's familiarity with and desire for IT and the firm's ultimate installation with no other factor they examined (including available resources, government support, business planning and type of product) rating to that extent. Ownership in a firm provides decision making powers which may render board influence and control powerless. External directors are particularly susceptible to this effect, as are directors with minority shareholdings (Fiegener, 2005). The CEO alone influenced the implementation of an intranet, with the highest uptake being in IT and communications firms (Al-Qirim, 2007). Earlier, Al Qirim (2006) found that whether for internal use, external use, e-commerce or other applications, the firm's manager is the key component in adoption of IT. Primarily their interest but also their knowledge is the key component in the breadth of adoption and ultimately its success. Suhendra, Hermana & Sugiharto (2009) attribute the driver of IT adoption and subsequent intensity of use to the owner manager. The importance of top management in IT decisions was also affirmed by Ren, Ngai & Cho, (2010). The attributes of the founder entrepreneur CEO examined by Foo (2010)— alertness to new opportunities, start up skills and other skills for "better articulated" business ideas—influenced the decision to install systems. The profile of the owner will help indicate the type of financial setup the business will adopt. This is as noted by Cassar (2009, p. 33), since "those with accounting experience and education are more likely to recognise the benefits of such accounting activities". The CEO's profile dominates in decisions regarding personnel, finance, marketing, operations and organisation (Dyer & Ross 2008).

Conversely, when the founder entrepreneur CEO is less informed or opposed to system implementation or upgrade, it lags or lapses. Managers who believe that IT will have benefits to the organization in terms of productivity and compatibility are the most likely to be adopters, according to Grandon & Pearson (2004). This was also the finding of Celuch, et al, (2007) who noted that in the small firm, decision making is the province of an individual decision maker, typically the owner/manager. The question of support applies to implementation of technology, engagement of outside consultants and overall success of the operation and is widely supported in research (Ren, Ngai & Cho, 2010). Suhendra, Hermana & Sugiharto (2009) report that the computer skills of the SME decision maker serve as a predictive value for IT adoption. Iacovou & Nakatsu (2008) confirm the importance of the founder entrepreneur CEO support to the success of the project

implementation. Davila (2005) notes the opposition of the founder entrepreneur CEO may be so great that, for many organisations that have delayed implementing management control systems, it may be that the founder entrepreneur CEO and personnel who were engaged at start-up are unfamiliar with such systems. It is not until a manager or external consultant who knows about systems are engaged that implementation commences.

Senior manager or IT expert decision making.

The third and final sources of internal influence on firm decisions in this area are the senior managers and IT experts. Although most SMEs lack these individuals, they are influential in those SMEs that employ them. As with the Board and CEO, senior managers' positive attitudes toward system influence their uptake. Grandon & Pearson (2004, p.209) conclude

> that managers who have positive attitudes toward the adoption of e-commerce also perceived e-commerce as adding strategic value to the firm. Thus, interventions toward changing managers' perception about the strategic value of e-Commerce can be devised in order to increase the adoption/utilization of e-commerce by SMEs.

Their influence on decision making has been outlined by Xie, Liang & Boulton (2008, p.82)

> without external influences, IT personnel controls the development stage regardless who initiates the decision process. In contrast, when the external influence is high, top managements, administration and human resources are more involved in the initiation and development of their own proposals. This pattern also suggests that as external influence becomes more coercive, the role of the IT personnel in governance is weakened and the governance of IT investments increasingly uses single departments.

Pollard & Cater-Steel (2009) find that strong, consistent senior management support is the most important requirement for successful implementation. This helps to ensure adequate resources are provided, the project is endorsed and enforced and objections are handled. Adopting systems that favour senior managers' work practices increases the chance of success. Grandon & Pearson (2004) find compatibility with organizational culture, values and preferred work practices are strong influences on adoption of IT (Ramsey, Ibbotson & McCole, 2008). Support for the systems being implemented by managers who will use them and be accountable for the results is also necessary. Issues relating to how they use the system are described further in the section regarding workarounds.

Summary of decision making.

To recap, there are the three sources of internal influence on the decision to implement systems. First is the Board, where participation in decisions varied based on types of decisions to be made.

> Board strategic participation occurs largely as an ad hoc response to a particular decision confronting the small firm, and only secondarily as a general predisposition toward board involvement arising from organisational and board contingencies. That is, Board participation in small firms tends to occur at strategic decision points when board input is felt to be more legitimate or valuable, but its adoption as an administrative routine it not widespread (Fiegner, 2005, p.644).

Next is the founder entrepreneur CEO, where it has been shown that they wield strong influence and their view on the utility of systems is a predominant factor on whether to proceed. A particular example of this effect has been noted in the segment of business owned by Chinese immigrants, Chen & McQueen (2008, p.47) report that the

> leaders of small Chinese firms in New Zealand tended to adopt their birth country cultural dimensions and apply them in the New Zealand business environment. It was shown that these firms have high levels of power distance features. The owner's attitude and knowledge about e-commerce are direct influences on which stage of e-commerce adoption is achieved.

Finally there are senior managers, where there are competitive pressures to perform better or more efficiently, typically prevail in the decision making involving IT expertise (Xie, Liang & Boulton, 2008).IT expertise is not as critical, but individuals who work most closely with IT vendors wield the most influence.

Access to decision making

Given the roles previously described, it would be appropriate to gain insight into the decision making process by interviewing the key decision maker. This section reviews the influences of the decision makers to lead to an assessment of who is the most appropriate source to gain the most insight into the implementation process.

Decision making by the founder entrepreneur CEO.

With these influences and the overall importance to the organization of the founder entrepreneur CEO, researchers have relied on their views and input in conducting their studies. Using founder entrepreneur CEO reported results has validity since "founder CEOs

are usually knowledgeable informants with regard to their firm's financial performance, and there has been evidence that CEO self-reports of performance significantly correlate with some objective measures of firm performance" (Ling, Zhao & Baron, 2007, p. 682). Mendo, Fitzgerald, & Martinez (2009) also determine that the CEO was the most appropriate source to interview as the CEO has the authority and responsibility for decisions for the organisation. They thus obtained responses from firm managing directors, with only two in their sample referring to external consultants. Studying the viewpoint of the decision making authority in the firm provides the appropriate analysis of the usefulness and use of software. It eliminates employee bias; it represents the view of the entire firm though the dictates of the decision maker (Hernandez, Jimenez & Martin, 2008). The founder entrepreneur CEO is thus a worthwhile source of information to discover information informing on the decisions regarding system implementation or upgrade.

Decision making by senior management.

As a source of information, however, it appears that senior managers' diffusion and lack of ultimate accountability make them less productive sources of information regarding the decision making process. In SMEs where decisions are made by the founder entrepreneur CEO, they act as followers and lack accountability for successful implementation. A further drawback in seeking out senior managers for insight into system implementation is that many SMEs don't have any!

Decision making by Boards of Directors.

Similar to the issues limiting the usefulness of interviewing senior management are the limits on Boards. As mentioned previously they are not always consulted or involved with systems implementation, and even then not at a detailed level. With most SMEs being represented by the founder entrepreneur CEO on the Board, it also appears that they represent the primary contact of the Board. Finally, with Boards being dispersed, there are efficiency gains to be had by finding other primary sources to interview.

External Influences

Whoever makes the decisions in an SME, they do not make them in isolation. External influences, competitive pressures and expert advice are involved in their decisions. This section examines the many influences, including government regulation, legal requirements

and cultural influences. Roberts & Toleman (2007) describe the influence of government on computer system implementation, finding the effect of Australian government influence on computer usage trends highly significant. They add that it is a worldwide trend and that government adoption of electronic functions is increasing. In addition to the support of government, regulations by government add an imperative to the adoption decision. Its capability is mandated by certain regulations or requirements on SMEs to obtain some level of IT capability. This takes some of the decision making aaway from them (Xie, Liang & Boulton, 2008).

Not only governments, but suppliers and customers influence the adoption of systems. For instance, "large significant customers have the power to pressure adoption of e-business practices by their suppliers in order to streamline processes, reduce transactions costs, and improve efficiency through online communication and order taking" (Roberts & Toleman, 2007, p.50). One risk of this influence is, depending on circumstances, users can become reliant on a supplier, not only for the software product itself, but also for their specific knowledge of the users, the processes that become inter-related, the reliance on innovation and change and for the avoidance of costs associated with change (Subramani, 2004). All of these pressures were summarised by Levy, Powell & Worrall (2005, p.16) "thus it appears that pressure to adopt is likely to be driven by external factors rather than internal ones. This may go some way to explain the cautious approach of SMEs' internet adoption; given their resources constraints, they may be waiting for signs from the market that the investment is required".

One particular influence of interest is the external consultant, whether a trusted adviser or an expert in the area of IT adoption. Their influence on the decisions and the role that they play is significant and is explained in this section.

Consultants

Although SMEs have insufficient internal financial, human resource and systems expertise, they still have requirements in those areas that need attention. An alternative they use is to engage external advisors to provide the expertise they lack. This section explores the utility of external consultants in various facets of their engagement, with particular emphasis on management system implementation. Robson & Bennett (2000, p. 196) explain why external advice is typically used. "The main reasons why external advice is used has been

found in most previous analyses to be to fill gaps in internal staff or management expertise, for specific and one-off tasks and to develop new internal procedures or processes." The nature of the consultant relationship differs between large enterprises and SMEs. "Compared to the relationships between consultants and managers in large companies, which are mostly contractual, project-based and formal, the relationships between consultants and owner-managers in SMEs are mostly friendly, informal, and trust-based" (Chen, et al, 2008, p. 162). SMEs' requirements for consultants are greater than required by large enterprises. While large entities generally only require technical advice and finite project based support, SMEs require comprehensive services in a long term relationship Research indicates consultants may be categorised into two types, those who provide ongoing, continuous advice and support, relied on by the SME (with varying degrees of reliance and trust) or those who are engaged for one–off projects such as system implementation, often being the vendor for the system being installed. Both types of consulting categories and the impact on the SME over its life cycle are explored in this section.

Use of consultants over the business life cycle.

The need for and use of external consultants changes over the life cycle of the SME. The life cycle of a business is a theoretical framework that predicts the requirements of firms at different stages of development. Fiegner (2005, p.632) describes the stages in relation to management information requirements:

> Firms in the early stages of development tend to implement informal control systems, basic organisation structures, and centralised decision making processes that are well-adapted to the simpler environmental contexts in which they operate. However, success and growth greatly complicate the CEO's managerial tasks to the point where they overwhelm the information-processing capacities of the informal systems and cause decision making delays and errors. To progress beyond this point the small firm must develop administrative mechanism capable of managing the growth volume and variety of information and problems, such as by formalising procedures and extending authority to subordinates.

In progressing beyond the early development phase, when firms' level of expertise is comparatively low, firms hire employees with particular skills or, as more frequently occurs, engage and be influenced by third party consultants (Davila & Foster, 2007). This is a critical time to decide on the merits of engaging an external consultant. At this time, decisions need

be made regarding resources needed, operating routines to be performed, policies and personnel to be employed and accounting and compliance systems to be used (Cassar & Ittner, 2008).

The needs for advice at the early stage of a firm are varied and wide ranging. Firm development and ability to trade in a competitive market must occur either through internal competency or with external assistance. Gooderham, et al (2004) advise that SMEs find this difficult due to their lack of resources, and they have particular needs for external consultants. Advice is also sought for implementing management systems and financial reporting (Cassar, 2009).

In the start up phase, firms seek support from close ties and trusted networks. Entrepreneurs typically have social networks to draw on, who include resources to provide "information, access to finance, access to skills, knowledge and advice; social legitimacy; reputation and credibility. It is also well established that different personas in the network provide various resources" (Klyver & Hindle, 2010, p.6). After close ties and social networks, the next source of external advice for start up SMEs is customers and suppliers. They provide timely advice to the firm on how it is performing and, to satisfy communication requirements, assistance on technology requirements and alternatives. Naturally they offer alternatives of supplies of goods and sevices (Robson & Bennett, 2000).These sources assist in technology decisions, as small firms "are likely to look to the behaviour of significant others in their environment for direction regarding technology adoption" (Celuch, et al, 2007, p. 231).

It is the firm which is seeking to grow or advance its position in the market in some way that continues the process of seeking advice and improving skills for its development. Generally, research has determined that firms using external advice are ones seeking to create wealth and accumulate capital, as well as typically being larger. Firms avoiding advice seek autonomy and independence (Gooderham, et al, 2004). These next stages are times when firms seek advice from professional advisors:

> This study has indicated that professional advisors on financial matters only play a minor role in the two early phases of the entrepreneurial process before the venture is actually started. Entrepreneurs might have relationships with these advisors in these stages, but they are rarely included in the discussion network. To most entrepreneurs,

other role relationships are more important first, to their ability to recognise opportunity in the discovery phase and, second, in the emergence phase to actually make the decision to start or not (Klyver & Hindle, 2010, p. 18).

Characteristics identifying use of consultants.

The factors that point to SMEs seeking to grow or advance by engaging external consultants are the characteristics of the entrepreneur, the power in the relationship and the levels of trust they are able to establish with the consultant. Of the characteristics of the entrepreneur, age was found to be an important indicator for engaging external financial advice. Entrepreneurs sought advice increasingly after ages 30, even more so over 50 years old, whereas little advice was sought by those below 30 (Klyver & Hindle, 2010). The age and other demographic characteristics of the entrepreneur influences the degree of willingness and openness in the extent of alliances they may form (Street & Cameron, 2007). Unlike needs for more sophisticated management control systems discussed earlier, seeking support from consultants is more a factor of the age of the individual, rather than the firm. Bennett & Robson (2005) find that firm age was not a factor having an effect on measures of satisfaction toward business consultants.

The degree of autonomy of the entrepreneur is a second determining characteristic of the entrepreneur. There are many reasons in the literature why autonomous SME owners do not seek external advice: they rely on their own experience and intuition; they are independent minded; there are barriers that prevent SMEs from taking advice; and they are fearful of becoming dependent on the advisor (Dyer & Ross, 2008).

The knowledge beforehand possessed by the entrepreneur is a third distinguishing characteristic. According to Ren, Ngai & Cho, (2010) when an entrepreneur overcomes a lack of knowledge there is a greater likelihood of their adopting an innovation. If they perceive that the degree of knowledge is not sufficient they are less likely to adopt new technology. The requirement for knowledge leads to a more solid relationship with the IT supplier.

The power in the relationship is another important characteristic. It occurs, according to Chen, et al (2008) on four levels: Formal power, Expert power, Coercive power and Trust-based power. Initially, the founder entrepreneur CEO possesses all of the formal and coercive power, enabling them to dictate the running of the business. External consultants

are engaged based on their expert power. Over the working relationship, Chen, et al (2008) note that these three powers merge between client and consultant, when the engagement is working effectively, and combine into trust-based power.

The level of trust with the external consultant is the final characteristic in this section describing the nature of the relationship between founder entrepreneur CEO and consultant. Trust comes about in the two way relationship between the entrepreneur and the consultant. Gooderham, et al (2004) affirm that trust is a vital component in determining whether external advice is relied on. Trust enhances the consulting arrangement as it facilitates the entrepreneur supplying confidential information to the consultant as well as there being other beneficial exchanges. Trust also smooths over conflicts and other disruptions (Wang & Chen, 2006). Trust typically builds up over time as each side learns the background, expertise and working style of the other (Chen, et al, 2008). A higher level of trust enhances communication and eases conflict resolution (Wang & Chen, 2006). Lacking a close and mutually obliging relationship, the relationship fails or disappears (Klyver & Hindle, 2010). Trust is not linked to the length of the relationship, but rather, the personal quality of service established the degree of trust. Arranging for changes in software and usage enhances that understanding and provides opportunity to exploit advantages and efficiencies. The closer the relationship, the greater the opportunities (Subramani, 2004).

Types of consulting arrangements.

The business to adviser relationship has the same characteristics and intensity as the relationship between private consumers and personal service providers. Principles that apply in assessing customer service in the consumer area apply to professional services according to Bennett & Robson (2005). Aspects of trust, satisfaction, timeliness, reliability and other factors influencing repeat performance were largely the same. Indeed there appears to be a requirement for the entrepreneur and consultant to collaborate on the engagement. This has been found in many studies.

There are a variety of external consulting relationships available to the SME entrepreneur, outlined by Robson & Bennett (2000, p.196):

> Among the private sector, accountants are the most widely used, followed by banks and lawyers. Business friends or relatives are also a frequent source of business

advice, often acting as the preferred and most valuable route for many of the smallest owner-managers—particularly for managers who are reluctant to disclose details of their own companies to external sources.

Bennett & Robson (2005, p. 256) define the consulting process which

> will usually combine task interaction, where the client and supplier exchange information on problems to be solved and means to accomplish them, with personal interaction, where the client's well-being is directly improved, (by effecting changes in the ability of management, increasing the knowledge base of the manager, and by improving ability to cope.

Interaction with government is one such engagement that can benefit from using consultants. Tomory (2009) advises that small business owners undertaking the incentives of the Canadian SR&ED program (a small-business oriented incentive to encourage innovations) found it worthwhile to retain the services of a consultant. She concluded that most entrepreneurs found that the benefits outweighed the cost, and a majority of them used consulting services to file a claim. While assistance in dealing with government may be helpful, assistance by government may not be of such benefit. Gooderham, et al (2004), citing research in Europe with emphasis on the UK and Norway, determine the government assistance programmes and agencies are little utilised by SMEs. They fail to provide significant assistance. Robson & Bennett (2000) find similarly that other organisations (business associations, government agencies, business clusters and collaborative networks) providing advice are ineffectual or only help with brief, easily answered questions.

In addition to engaging consultants internally, SMEs can also outsource processes and functions. Outsourcing particular functions equates to bringing in consultants for particular tasks. Outsourcing IT offshore to access economic benefits of lower cost resources is an increasingly used option, although mainly for large enterprises. Firms that provide outsourcing skills (payroll, data processing) are increasing in frequency, accessibility and function. Although outsourcing of accounting skills enables the SME to focus on core business tasks and have access to the expertise and economies of scale (software, training, non-daily requirements of information) of the provider, businesses also encounter dependency on the firm, loss of internal expertise and lower access to information (Everaert, Sarens & Rommel, 2007). Outsourcing's effectiveness requires more planning, communication and management than for local resources and is prone to failure. It is still

largely out of reach for SMEs (Iacovou & Nakatsu, 2008). Technical competence of the outsource firm needs to be established in the outsourcing application as well as the extent of participation, information sharing and top management support (Ren, Ngai & Cho, 2010).

Consulting particular to MCS.

IT consultants and external accountants, as the two principal sources of assistance in implementing new systems, require specific examination. The necessity of their assistance in IT implementation has been established in research by Van Halem (1996, p. 6).

> Unless the company has extensive in-house IT knowledge and sufficient human resources, it should obtain third party assistance from a vendor or independent consultant. Because poor performance of the third party adviser is a major risk, the adviser must be selected with care. Obtaining references and even visiting companies the adviser has helped plan and implement an IT system are critical. The firm should select an adviser sensitive to the firm's specialist requirements. To minimise cost overruns, the company should request a detailed cost forecast from the consultant and negotiate a cost cap, especially if the consultant performs software programming. The selection of a professional third party adviser can determine the success or failure of IT implementation.

The role of external consultants in system implementation is to provide technical and business expertise, help configure the system to client requirements, provide training and help see the system's ease of installation (Wang & Chen, 2006).

According to Al-Qirim (2007) entities are more likely to trial new technology if they feel supported by vendor or third party support. Further according to Chen, et al (2008) external consultants are an inherent requirement for SMEs in system implementation. This is as SMEs are insufficient in size to have a dedicated IT department and often lack IT expertise; the consultant also provides the political assistance between individuals and departments in facilitating system implementation that managers are unable to engender. External consultants serve in the role of trainers, IT managers, project managers and process owners. These roles are useful for consultants to fill, as they do not have ownership or other attachments to legacy systems, are independent from intra-organization rivalries and, with their system knowledge, have ready answers to issues as they arise (Pollard & Cater-Steel 2009).

Consultants do not find this process easy to undertake. Advisers approaching firms find "that acting as a business adviser, in the sense of motivating small firms to adopt and integrate competencies, is a complex process that requires a high degree of relational competence" (Gooderham, et al, 2004, p.6). According to Chen, et al (2008, p.160), "for management consultants, adapting their roles and methodologies for the e-business environments of SMEs remains a challenging issue and one that research has not adequately addressed." Suppliers of software experience the tension of providing innovative solutions to customers, both specifically tailored and generally available, while protecting their investment of knowledge gains and proprietary information (Subramani, 2004). In addition "within a short period of project time, it is difficult for trainers or consultants to pass on the knowledge to the employees" (Vathanophas, 2007, p. 436).

Since IT consultants are usually engaged by larger firms, particularly when specialised software is to be deployed, they are not geared toward the requirements of the SMEs. Primarily because of limited resources, Chen, et al (2008) find external consultants limit their involvement with SMEs to technical advice and avoid greater involvement with management and control procedures. This limits the effectiveness of the engagement and hinders success of projects. In addition, many IT service providers are struggling to change the culture and processes within their own departments or organisations. Many IT service providers maintain a culture that is technology focused rather than customer centric (Pollard & Cater-Steel, 2009).

Inter-relationship of consultant and SME.

Even when consultants are engaged, the founder entrepreneur CEO must control the process as they are usually the individual with expertise in the company's processes and knowledgeable of the best business practice in the business (Luliana, 2006). They also need to be competent in completing the IT purchase including informed buying, contract management and relationship management (the capability to manage the consulting relationship). This competence is necessary to manage the provider and restrict opportunistic behaviour (Ren, Ngai & Cho, 2010). Assistance by consultants on these decisions supports the owner entrepreneur CEO. According to Iacovou, Benbasat & Dexter (1995, p.480), consultants

are encouraged to pursue a recommendation strategy that actively communicates the benefits of the technology through promotional seminars, presentations, and on site visits. Such tactics have been recently utilised by many larger retailers as part of the (electronic data interchange) EDI expansion plans. Promises, which are strategies that offer rewards to adopters, are also appropriate for firms with low awareness, Such strategies usually included discounted prices for EDI transacted goods and other rewards (Such as the credit point systems for EDI transacted goods). These incentives are usually very effective in increasing perceived (and subsequently actual) EDI benefits, leading to a more rapid adoption.

Rather than benefiting from the expertise or experience of non-executive external directors, firms in Scholes, Wright, Westhead, Burrows & Bruining (2007) benefited from external consultants. They concluded that firms, particularly family firms would obtain more useful advice while maintaining their corporate objectives by engaging consultants rather than bringing on external directors onto the board.

Chen, et al (2008, p.161) describe SMEs expectations of consultants. "A client expects a consultant to offer unique solutions drawn from their experience and specific knowledge gained from working with other clients on similar projects. When using their knowledge and techniques, consultants are called upon to play a variety of roles depending on different situations and expectations." When the consultant is not specifically an IT consultant, they serve to bridge the divide between owners and IT suppliers, eliminating trial and error approaches and standing beside management, acting as temporary managers. Their solutions should be practical and specific to the clients' needs rather than "package" style solutions. "The small amount of published research on the topic of small business interactions with web development consultants paints a picture of mismatched expectations, inadequate communication patterns and sub-optimal outcomes" Carey (2008, p. 87). In New Zealand in particular, the participants in Al-Qirim (2006) all reported dissatisfaction and negative perceptions about technology vendors and consultants, particularly in terms of high service costs and overall competence.

A large contributor to the unsatisfactory engagement seems to be communication. Effective communication is defined as "the extent to which consultants and users can understand the expressions of the other side in the consulting process" (Wang & Chen, 2006, p.1031). Through this kind of communication and degree of understanding, users are able to describe their needs and consultants are able to address them. Despite the demand from

organizations increasingly reliant on IT, and the increasing awareness of the need to become service-oriented and customer focused, many IT service providers are still struggling to change the culture and processes within their own departments or organisations. Many IT service providers maintain a culture that is technology focused rather than customer centric (Pollard & Cater-Steel, 2009). It has been difficult to measure how well deployment of IT consultants have benefitted the SME (Robson & Bennett, 2000).

Satisfaction towards consulting services is primarily an inherently subjective measure, even when objective measures (i.e. increase in profits) are present. Since there is no direct correlation, objective measures are incomplete. Subjectively, satisfaction measures how services were delivered, timeliness, attention and other intuitive measures. Regularly, the client lacks the technical expertise to evaluate the actual advice (Bennett & Robson, 2005). In an analysis in New Zealand, Al-Qirim (2006) concluded that existing consulting support for SMEs was inadequate.

This situation applies to NZ SMEs as for other jurisdictions. Demonstrating that basic adoption of IT capability in New Zealand SMEs, using only internal resources and vendor support, is insufficient. To overcome this, further expertise or help by consultants would be required. Yet "the negative effect of technology vendors on e-commerce adoption needs to be resolved in order for e-commerce to succeed in New Zealand SMEs" (Al-Qirim, 2006, p. 37). This conclusion was affirmed elsewhere in Brown, Earle & Lup (2004) with the conclusion reached that there was little evidence of any association of technical assistance with growth.

Despite these limitations, SMEs continue to engage external consultants rather than employ IT expertise internally. Davila & Foster (2007) find that external influences from developers, research partners and business partners or competitors influence system adoption to a greater degree than has been previously recognised. Evidence from case studies illustrates that the Internet removes the need for internal IT experts (Mehrtens, Cragg & Mills, 2001). This applies to the non-profit sector as well. Because of their low resource base and voluntary work force, non-profits lack in house IT expertise. They have a strong reliance on external IT expertise, often provided voluntarily (Mackay, Parent & Gemino, 2004).

Differences between IT consultants and external accountants.

Using IT consultants differs from using external accountants since accounting services differ from IT services. They differ in the extent of their deployment (more firms use both internal and external accounting resources than for IT); the skill level required (more firms require higher accounting expertise from their providers than of IT); and the involvement of senior management (more involvement with accounting firm personnel) (Everaert, Sarens & Rommel, 2007). Bennett & Robson (2005, p. 263) elaborate on these differences.

> Consultants have low market entry barriers, with few brand or quality controls. The institutional environment of trust may thus be low for consultants and they may have to spend more on 'manufacturing' brand and reputation which produces costs that are, in effect, passed on to the client. Business consultants are expected to have high levels of interaction intensity, but high cost and low or intermediate trust levels.

External accountants' role with an SME is quite different from external IT consultants. According to Cassar & Ittner (2008) external accountants are engaged when the business commences its activity at about the same time a dedicated bank account is established and sales commence. They note further that although accountants are the most common source of outside advice, their initial engagement is not linked to the need for advice or the time of uncertainty but rather the necessity for transaction processing. This occurs when there is an expectation of future firm growth. Gooderham, et al (2004, p.10) describe the potential role of the external accountant.

> Accountants were shown to be of significant help to the manager-owner in running the firm particularly when it came to the introduction and implementation of changes. Such a role was also shown to be of critical importance in the early phase of the business. The contact between the accountant and the manager-owner was especially significant for the learning processes that occur in the business.

External accountants normally assist firms to deal with issues of financial complexity (internally or externally) and, in their involvement with preparing financial statements, cash flows or business plans, add credibility or legitimacy (and in some situations assurance) to external funding sources. Where price reductions or cost control is required or especially acute, external accountants are especially helpful. (Cassar & Ittner, 2008).

External accountants are for many firms a trusted advisor. Gooderham, et al (2004) add that they have significant potential to expand the services they provide into non-financial statement management and system areas.

Retaining an external accountant involves significant costs which are particularly important given the limited resources that startup ventures generally have available. The decision to retain an accountant must entail an expectation that certain benefits will accrue, including tax and regulatory compliance, credibility and assurance services, and strategic and decision making advice. Accountants can analyse financial information, such as product and customer profitability, and can assist in improving financial management of the new firm by providing forecasting advice, such as predicting future working capital and cash flow requirements, or developing budgets or budgeting processes. Accountants can also transfer specialist knowledge drawn from their experience with other businesses and even help develop firm strategies, both in the domains of finance or other management fields.

For system implementation, in addition to providing advice and support on fundamental accounting systems, such as accounts receivable and payroll, external accountants can provide advice on decision-oriented MAS for evaluating and improving the performance of the firm. Trusted contacts of the entrepreneur wield influence but according to Klyver & Hindle (2010), there is only a weak tie between entrepreneurs and their external financial advisers, who wield minimal influence on decisions. Rather, trust and reliance on external financial advisors occur over time as a continuously evolving process. Gooderman et al (2004, p. 17) identify the pre-conditions before SMEs will use the external accountant for other advice.

> The results of our study indicate that there are at least two conditions that must be fulfilled. First, the statutory service of the authorised accountant must be perceived as being of high quality. Second, the small firm itself must have an ambition to grow or to develop in the sense that it is receptive to the advisory services being offered to it. If these two conditions are met, there is a significant increased tendency that owner-managers will use non-statutory services from accountants.

Some SMEs have out-sourced the accounting functions. Outsourcing of accounting tasks enables the SME to focus on core business matters while having access to the expertise and economies of scale (software, training, non-daily requirements of information) of the provider. The risks of outsourcing these functions are encountering dependency on the

provider, loss of internal expertise and lower access to information (Everaert, Sarens & Rommel, 2007). Firms that complete all accounting tasks in-house declare the importance of having full control, up to date financial information and sufficient in-house expertise necessary for this function.

External accountants also have scope and opportunity to enhance their supporting role for SMEs based on their current level of involvement. For the external accountant, Klyver & Hindle (2010, p. 20) advise "that different professional advisors on financial matters need to consider how to strengthen their generally weak role in the early phases of entrepreneurial development. ... Professional advisors on financial matters might consider how to become more closely related to entrepreneurs in order to increase mutual benefits from early and late stage cooperation ". Cassar & Ittner (2008) find while internal accounting system adoption and sophistication develop in early phases of a firm, external accountants are not likely to be retained at this point. As with IT consultants, the role of the external accountant can be better framed to meet the needs of SMEs.

Summary.

Consulting has been shown as being necessary for the SME to overcome various obstacles. Especially for MCS adoption, either or both the IT consultant and the external accountant have scope for gaining greater understanding of their utility in the implementation decision. Having examined the nature of SMEs, the necessity of MCS and the issues regarding their implementation, the models and frameworks that have already been applied to understand this process can be examined.

Models and Frameworks

Over the years during which implementation of systems has attempted to be understood, a number of models or frameworks have been devised. These models or frameworks outline key characteristics and events existing at the implementation trigger point then determine whether the implementation has been successful and whether those characteristics and events can explain the success. The literature contains several models established for this purpose. For example, Ramdani & Kawalek (2007) refer to 14 other models that have been developed and used to explain and predict MCS implementation.

Delone & McLean "Net Benefits" model.

DeLone & McLean (2003) present their model for measuring the success of system implementation. They attribute the inter-relationship of the three aspects of implementation—the original development of the system, the subsequent experience of users and managers of the system and the effect of the system on the workload and output of the users on an individual level and across the organization as a whole.

The DeLone & McLean (2003) model labels these three dependent stages as the creation of the system, the use of the system and the consequences and benefits of its use. Each step's evaluation contributes to understanding the success of the implementation but is insufficient on its own for full evaluation.

The purpose of their model, by establishing the evaluation of system implementation as consisting of these three aspects, is to simplify analysis and to facilitate determining *net benefits* to the entity. "Net benefits" in the DeLone & McLean (2003) model can range from the impact on the individual user through the organisation and out into the community and society in general. DeLone & McLean (2003) recommend individual studies applying their model determine the net benefit they are examining while the model retains the single 'net benefits' category. In the DeLone & McLean (2003) model distinction is made between system quality and service quality. System quality refers to the installation while service quality refers to the post implementation support available to users. Both must be examined within the model to evaluate the success of the installation.

Others have attempted to expand on the three categories with different or more detailed events in the implementation cycle.

Stage model.

A similar model in that the beginning to end of the process is divided into critical elements was used by Mendo, Fitzgerald & Martinez (2009). They were more interested in degrees of system sophistication. They looked at how E-commerce develops and is studied by a "Stage Model" that looks at web sites' development from merely being on line with firm information (brochure ware) through enabling ordering and payment on line to complete business transformation where the web site is fully integrated with all business processes. Studying a firm in this way using empirical study of individual firms' progression in

sophistication of technology would provide useful information ultimately leading to a general framework to explain adoption of technology and pinpoint an individual firm's stage of progression. Unlike the Net Benefits model, the emphasis is placed on systems rather than individuals.

Technology acceptance model (TAM).

The Technology Acceptance Model hypothesizes that information system adoption and usage can be explained and predicted by considering two behavioural beliefs: "Perceived Usefulness" and "Perceived Ease of Use". It requires attention to be paid to both beliefs, as focus only on either the usability-oriented "Ease of Use" of a system or the purpose oriented system "usefulness" is insufficient to explain system acceptance (Dingel & Spiekmann, 2009). Users of this framework variously define what "usefulness" and "ease of use" consist of in terms of outputs and efficiencies for usefulness and frequency of system interaction and extent of reliance on the system for ease of use. In using the TAM, researchers seek to measure the perceived usefulness and ease of use of the examined implementation. Of particular interest of the TAM is determining who in the organisation establishes the system's usefulness and ease of use, particularly between senior management, external users and end users or front line staff. By examining the decision maker of the firm , Hernandez, Jimenez & Martin (2008. P. 118) report

> The usefulness and ease of use associated with management software are better predictors of the intensity of use. This is because the decision-maker knows the capacities and limitations of the human capital of the firm and, moreover, his/her decisions affect the whole firm. Consequently, we confirm the idea that the analysis of the decision maker's perceptions is more appropriate for the business environment. Furthermore, this approach obtains the exploratory power which doubles that obtained in other studies and verifies the key relations of the TAM... Thus, we recommend adopting the initial theory an focusing future research on the analysis of the firm's decision maker no matter who uses the technology later.

Brown, Earle & Lup (2004, p. 6) describe the limitations on receiving responses from owner/entrepreneurs:

> Most studies of factors explaining small firm growth rely on managers' survey responses concerning their perceptions of constraints. The problem with such an approach is that the responses to survey questions are clearly subjective and sometimes self-serving; therefore they cannot be taken as conclusive evidence.

Nevertheless, such questions do permit the issues to be phrased directly, which is a particular advantage when it is difficult to design objective measures of factors.

Studying the CEO in a micro firm allows the prediction of the intention of "use and the real applications of an IT on the basis of the global perceptions of the firm. Likewise, the inaccurate results from the coercive character of the employee's use can be eliminated since the subject of analysis is the same person who takes the decision to adopt the management software (Hernandez, Jiminez, & Martin 2008, p. 113).

Focusing attention and analysis on the IT decision maker or CEO captures the firm's characteristics and strategy while giving insight into the decision making. Although they may not experience the ease of use of the system personally, they will likely have insight from feedback and evaluation of employees directly using the system. This lends credibility to their impression of the ease of use and facilitates correct implementation of the IT. Employees' direct impressions are too varied, too personal and too unfocused on the organisation to be reliable (Hernandez, Jiminez, & Martin, 2008).

Examining the different users of a system characterise this model of evaluation.

Electronic data interchange (EDI) adoption model.

The EDI Adoption Model contains three factors necessary to examine and explain adoption: perceived benefits (efficiency, effectiveness and enhancing firm image), organisational readiness (knowledge and adequate computer systems) and external pressure (customers, suppliers and employees). The model uses these factors as tools for describing behaviour and for explaining technology implementation—from internet usage to comprehensive system implementation. The factors that form the model were derived from experiences gleaned from case studies.

 The model developed by Mehrtens, Cragg & Mills (2001) updates the model "EDI adoption model". Both find that perceived benefits, organisational readiness and external pressures are strong influences on adoption, although the latter two are defined differently.

Unified theory of acceptance of use of technology (UTAUT).

A further model to explain IT adoption is the Unified Theory of Acceptance and Use of Technology. It builds on the TAM model along with seven other models to synthesize factors

to explain system implementation. According to its authors, Venkatesh et al (2003) its purpose is to integrate the fragmented theory and modelling of the existing research.

The UTAUT finds that four "constructs" explain the perceived ease of use and usefulness as they impact on management system implementation. These constructs address the intention to use through performance expectancy, effort expectancy and social influences while examining facilitating conditions in an organisation that assist with using the system (Venkatesh, et al (2003). The UTAUT incorporates characteristics of adopters (age, gender, experience, voluntariness) into the predictive variables. The characteristics of adopters add to the explanatory power of the UTAUT as moderating variables. Performance expectancy (the extent to which an individual believes using the system will help them make gains in job performance) provided the strongest explanatory power of the constructs. It was found that the model explained 70% of the intent to use systems.

Surveys using the UTAUT have produced results where various combinations of these constructs and characteristics provide varying powers of explanation for ease of use, usefulness and intention to use. For instance the UTAUT was tested by Anderson, Schwager & Kerns (2006) on academic use of tablet PCs. They found the model useful to explain why university professors have had a strong uptake of the device and have found it widely useful. Their predictive result of 70% was consistent with previous results. As a prediction model, since many influences are uncontrollable, the model's application to a particular situation was found to be limited. Rather, it describes the conditions necessary for successful implantation as a guide to users in planning their project (Suhendra, Hermana & Sugiharto, 2009).

Iacovou model.

Iacovou, Benbasat & Dexter (1995) propose a simple model for technology adoption comprising three factors: organisational readiness, perceived benefits and external pressure. This model has been used in several subsequent studies as a basis for explaining firms' adoption of IT.

The level of system integration served as a proxy for the actual benefits of IT in Iacovou, Benbasat & Dexter (1995). The more extensive integration implied greater benefits. Studies

using this framework set out to establish what characteristics describe these three factors and then quantify the co-efficiency of the relationship to the characteristics examined.

Other models, proceeding along similar lines, have also set out to establish critical junctures in the stages of implementation and then analyse events and, through recollection, perception of their occurrence. Grandon & Pearson (2004) cite the causal link widely established by the model of the "theory of planned behaviour". That model establishes that perception creates an intention which converts to action. Thus a perception of benefit to IT leads to its implementation.

A different approach was used by MacGregor & Vrazalic, (2008). They reject the use of established theoretical frameworks and proceed entirely without one. They reject the TAM as it requires the use of specific technology, while their business subjects use various ones. Their approach proceeded without a formal framework at all. They found that many of the characteristics described in previous models can be grouped and correlated into two main influences, organisational influences (how the technology was going to be used rather than concern for the technology itself) and barriers to implementation (financial, suitability and complexity). Modelling results for these characteristics was not required to understand them.

Several theoretical models have been developed to describe and explain technology adoption, particularly by SMEs. These include

- The institutional model--whereby external pressures ultimately require SMEs to achieve a consistent capability
- Contingent role models whereby there are a limited number of profiles of enterprises and individual entrepreneurs. Each firm can be fitted into one of these (Levy & Powell in Mendo & Fitzgerald, 2005).

Davila (2005) summarises the various lines of research that have emerged to explain the adoption of management control systems. These include "experience based models", "entrepreneurship literature" and "contingency research". These lines of research study structural variables in representing changes in a firm's environment; event variables that require change in operating procedures and performance crisis, similar to event variables.

Synthesis of Factors for Examination

From describing these models and frameworks, important criteria for comprehensive and through understanding of the causes for and process of system implementation emerge.

Examining these events accurately requires several aspects:

1. Examining actual usage not self-reported usage;

2. Examining the fit of technology to its required purpose;

3. Examining the degree of voluntariness of use (Devaraj & Kohli, 2003).

4. Combining findings on reported use and actual use

Of the last aspect, DeLone & McLean (2003) report on studies that found that self reported results of system usage did not correlate to computer recorded usage. Further, measures of actual information quality aid in measuring. Yet others have found contrary results. According to Wu, Mahjan, & Balasubramanian (2003), managerial perceptions in questionnaires and surveys can be relied upon in documenting relative market performance, measuring the impact of technology adoption at aggregate levels and assessing the performance outcomes. The results noted between their perceptions and objective measures were found to be consistent. Examining the micro-firm, where the decision maker is the user overcomes the issues identified in the research, including identifying the utility of the software as installed, quantifying savings and benefits and determining the point of the key implementation focus. In micro-firms they are all in the same place. As the decision maker, one can presume their use is deliberate and not focuses as in other studies (Hernandez, Jiminez, & Martin, 2008).

Other factors also emerge. Using a particular model to frame the research from case studies may subject the results to the bias of fitting replies into components of the model (Mehrtens, Cragg & Mills, 2001). In carrying out research, timing of interviews is important, as "the fact the respondents were interviewed contemporaneously in the very acts of entrepreneurship and business creation, avoided hindsight and memory bias. This further strengthens validity of the results" (Klyver & Hindle, 2010, p. 11). Devaraj & Kohli (2003) go further in recommending a longitudinal study is required to capture events and impacts that occur in later stages. The measures used to determine the benefits of implementation require several measures of growth, not only employment growth. These measures include

"several dimensions, including those most relevant to the owners and managers, of financial performance" (Robson & Bennett, 2000, p. 195).

Iacovou & Nakatsu (2008) identify the 10 top risk factors associated with system implementation: 1. Lack of top management commitment; 2. Original set of requirements mis-communicated; 3. Language barriers in project communication; 4. Inadequate user involvement; 5. Lack of offshore management know-how by client; 6. Failure to manage end user requirements; 7. Poor change controls; 8. Lack of business know-how by offshore team; 9. Lack of required technical know-how by offshore team; 10. Failure to consider all costs. These risk factors apply to projects carried on internally or with domestic consulting assistance.

Although there are several models to address MCS implementation, it is generally held "that it is unreasonable to expect that one model, and one so simple, would explain decisions and behaviour fully across a wide range of technologies, adoption situations, and differences in decision making and decision makers" (Ramdani & Kawalek, 2007, p.56).

The methodologies used to incorporate the requirements outlined in this section are presented in the following.

Research Methodology

What was Done

Eight interviews were conducted on individual in entities located in Wellington at their principal places of business and were conducted over the months of December 2010 to February 2011. The entities to interview were sourced from referrals from accounting firms and hardware or software providers Introductory details for the referrals were provided by email, initial contact was made by phone, where the purpose and nature of interviews was reiterated, approximate time commitment provided, and all contacts scheduled for interview. The interviews were conducted with the person identified as the key decision maker for the entity in the decision to install or upgrade MCS and system applications. The interviews lasted from between 45 minutes to 75 minutes. Detailed notes were taken on the questions asked, and in three of the interviews, they were recorded. In the other five interviews, the environment was not suitable to make recordings due to noise and distractions, and, in one case (H), because it was requested the interview not be recorded.

The interviews were semi-structured but standardised with eight open-ended questions. The questions used are shown in appendix one. The questions were deviated from when other interesting reasons arose or when incomplete or vague responses required elaboration. Following the interviews, the details were reviewed and re-written by the interviewer while fresh in his mind. All of the participants agreed to follow up questions if needed, although no follow-up was required. The justification for this approach is as follows

Basis for Research Methodology

Qualitative approach.

A qualitative research approach has been engaged in this study. O'Donnell, Gilmore, Carson & Cummins (2002, p.209) explain the utility of qualitative research approaches: "A qualitative approach was chosen since the aim of qualitative research is to explain rather than predict phenomena and to understand phenomena rather than measure them. Furthermore, qualitative methods are considered to be particularly suitable for gaining an understanding of decision making in SMEs." Previous studies have made examinations that relate to some degree to the particular research questions of the current study. By way of background, describing their deployment will provide insight into and justification for the method this paper will be using.

Case study approach.

The nature of this research lends itself to the particular research methodologies of exploratory research. Two methodologies useful to examine the adoption of computer systems include: the *case study approach* (which enables in depth understanding but not generality) and *cross sectional surveys* (which enable some generalisation but not sufficient depth of understanding to explain cause and effect) (Mohamad & Ismail, 2009). Between these, the case study approach has been chosen, as it provides the following useful aspects, listed in Mehrtens, Cragg & Mills (2001):

1. It enables examination where theory is not well developed

2. It enables examination of a natural setting or a focus on contemporary events

3. It enables examination of contemporary events

4. It can be used to generate, describe and test theory

5. It can generate reasons for an action that can lead to theory.

The case study method has been shown to be beneficial for exploratory research. Mendo & Fitzgerald (2005, p. 691) describe these benefits: "The case study methodology is argued to be useful when contemporary events are the focus of the research, and a strong theoretical base does not exist. In addition it also allows the researcher to answer "how" and "why" questions in an area where few previous studies have taken place." Pollard & Cater-Steel (2009, p.167) describe the attributes of the case study method of investigation

> The case study method provides the opportunity to ask penetrating questions and to capture the richness of organizational behaviour, but it is recognized that the conclusions drawn may be specific to the particular organisations studied and may not be generalisable.

Inherent in perceptions of qualitative research is the impact of bias. This is addressed according to Weiss (1994) who expresses the concern of researcher bias that can be present in qualitative study lacking in random samples, double blind testing and other controls. Bias can occur in sample selection, interview questions and encouragement for answers that support the research objectives, synthesis and interpretation and in reporting. He believes that if the researcher is aware of and acknowledges the possibility of bias and proceeds fairly, professionally and objectively then bias can be overcome.

Interview Methodology.

The case study approach was implemented through the interview method. Mendo, Fitzgerald, & Martinez (2009, p.268) described their reasons for using interviews in their exploratory case study research:

> A variety of data collection and analysis methods are potentially appropriate for such research but it was decided to adopt an interview-based approach as it was felt that this would be the best way of obtaining a detailed understanding of the drivers and perceptions behind the redesigns, without imposing an artificial conceptual framework (such as an *a priori* classification of drivers) on the subjects. An interview is the method that the researcher can best access the interpretations that participants have regarding the actions and events under investigation. Interviewing as a source of evidence has the strengths of being targeted, as it focuses directly on the study topic, and being insightful, as it provides perceived causal inferences.

The interview method they employed provided the framework for the research in this paper and is described further below.

Neither a survey nor any other method was used, consistent with Seidman (2006) who points out that even with different approaches of research and data gathering, often done in combinations, certain research situations suit using interviews alone. These situations include when one is trying to understand the experience of others and discern the meaning of their action while avoiding tensions that multiple methods may promote. During the course of the interview, there is opportunity to find out a number of different issues and events that have occurred. Interviews can examine several measures, not only employment growth. These measures include "several dimensions, including those most relevant to the owners and managers, of financial performance" (Robson & Bennett, 2000, p. 195). The interview method fuelled by preliminary observations and other documentation written by or about the subject, is a focused method of exploring (Stebbins, 2001).

In summary, the interview "is the method that the researcher can best assess the interpretations that participants have regarding the actions and events under investigation. Interviewing as a source of evidence has the strengths of being targeted, as it focuses directly on the study topic, and being insightful, as it provides perceived causal inferences" (Mendo, Fitzgerald & Martinez,2009, p.268).

Specifics of interview method used.

The interview method selected for use in this research has been derived from and is based on methods previously employed in the literature, particularly in two published studies looking at system implementation. Brief descriptions of their methods and approaches reveal the similarities:

In their study, Davila & Foster (2007) sought to determine whether there is a recurring sequence to the order in which management control systems such as budgets, human resource controls, financial planning and sales and marketing are implemented by emerging firms. To conduct their investigation, they initially met with managers experienced in the area to obtain suggestions of companies the size and age that would best fulfil their research needs. This enabled them to make their sample selection.

After making their selection, their research consisted of, in part, semi-structured interviews. The interviews were described as such:

Semi-structured interviews were conducted with each of these three managers. Each interview relied on a detailed protocol to insure that the main topics were systematically covered during the conversation. The semi-structured nature of the interview gave flexibility to query the interviewer when clarification of particular practices was required. Interviews, lasting about an hour with two researchers present, were taped and then transcribed. During the interviews, we did not ask respondents directly about "intangible" variables such as company culture, which might vary depending on the respondent's background or bias regarding "acceptable practices." Rather, we inferred those variables from the interviewees' descriptions of their experiences (Davila & Foster, 2007, p. 911).

Their technique of minimising personal assessment questions and comparing results obtained sought to minimise recall bias and attempted to ground the responses in reality. The length of their interviews was approximately one hour and was based on a 'detailed protocol listing' of the questions to be addressed. Being semi-structured allowed for flexibility to ask follow-up questions to clarify response (Davila & Foster, 2005).

The interview method of Mendo, Fitzgerald & Martinez (2009) was consistent with Davila & Foster (2007) as they shared similar objectives. Mendo, Fitzgerald & Martinez (2009) sought to understand why companies upgrade or revamp their web sites from existing designs and how external pressures influence that decision. In choosing to undertake interviews, they felt this was the best way to obtain detailed understanding of users' thinking without imposing an "artificial conceptual framework". Interviews provide for an inductive approach to theory by allowing themes and reasons to emerge from the interviews, rather than fitting statements derived in the interviews into a theory.

The results were analysed by qualitative and quantitative methodologies.

As indicated, these two approaches have been found to be reliable and well founded in the literature. Another example is the approach of Mehrtens, Cragg & Mills (2001, p. 167) who described their case study methodology as follows:

the study used seven cases, which is within the range from four to 10 cases recommended by Eisenhardt. However, after each case, an evaluation with respect to the necessity for further case studies was undertaken. In accordance with Eisenhardt no new cases were added when theoretical saturation had been reached. Theoretical saturation occurs when incremental using learning is negligible because repetition of phenomena is appearing.

Wiklund, Davidsson & Delmar (2003) developed a set of characteristics for testing. To determine whether any other characteristics were important or had been omitted, they conducted a limited number of open ended interviews. On finding no other characteristics were mentioned, they concluded this approach was sufficient to ensure their list was comprehensive. Selecting cases for study need be no more than ones that apply to the research question, are particularly illuminating or relevant for other reasons. They do not need to be random or selected on any other basis (Eisenhardt & Graebner, 2007). This methodology was applied by Davies & Crane, (2010) who used a sample selected with attributes that satisfied their subject of interest.

Saturation refers to the time when successive interviews become repetitive with the same information being re-heard. These criteria are to be considered with deadlines and resources to establish the appropriate sample size. Looking in depth at a few who have experienced similar structural conditions and experiences gives enormous power to the replies of relatively few participants (Weiss, 1994).

The structure of the interviews used in these case studies is defined as a focused interview. The focused interview was described by Yin (2009) as having the following attributes:

- length per person of a short period of time like an hour
- open-ended and conversational but following a certain set of questions derived from the case study protocol.
- use more than one interview, make observations and gather documentary evidence to correlate the respondent's answers

Further, according to Seidman (2006) interviews enable information to be gathered without having a formal theory or framework. Rather, a major benefit of the technique is gaining an understanding and explanations from interpreting and compiling responses of interviews.

Other studies in this area to use a focused interviewing technique include Papastathopoulos & Beneki (2010) who used a mix of closed and open-ended questions to conduct structured interviews. They interviewed only the person deemed to be most knowledgeable on the development of ICT within the firm. The interviewees ranged from director or owner-manager and IT personnel to general managers. Spence & Essoussi (2010) used face-to-face interviews with the owner/manager of each company and chose that person in order to obtain the most reliable information. Four companies in total were selected, and the interviews were taped and lasted between one and two hours. In an exploratory study,

Wagner, Fillis & Johansson (2005) conducted interviews of management to understand the process by which they relate to larger suppliers. This method was selected so as to gain insight and understanding in the approach for future research since at the time, not much in the area was known.

Interview selection.

The conduct of eight interviews followed the methodology of Davila & Foster (2007) and Mendo, Fitzgerald & Martinez (2009). This number is appropriate according to Seidman (2006) who identifies two criteria for determining how many participants are enough. The first is sufficiency—enough to reflect the range of views of the items being studied. The second is saturation of information. This refers to the time when successive interviews become repetitive with the same information being re-heard. Sufficiency and saturation, considered with deadlines and resources, establish the appropriate sample size.

Consistent with the approach of Davila & Foster (2007) assistance was obtained in finding and selecting subjects to interview. The subjects for this research were selected from information provided by either accounting firms or specialised software providers. From their experience, the providers have access to the emerging firms of interest, which would otherwise be difficult to identify. Through both their own processes and their partnering schemes, they jointly access emerging firms and external consultants.

Further, the providers' up to date knowledge of the market and their references to new or recent occurrences of systems implementation (or non-implementation) enabled the subject to fit into the time frame required for effective interviewing. This is as explained by Cassar (2009) who emphasised the importance of obtaining information at or near the point of decision making rather than retrospectively, months or years later. The researcher is able to avoid "confounding effects from survivorship bias or early unobserved organisational events that are systematically related to new venture characteristics or accountant retention. Further, recall bias can influence responses, as those surveyed may not accurately recall events, or even possess a systematically biased recall of events, at the inception of the venture" (Cassar & Ittner, 2008, p.10). As timing of interview has been shown to be important, none of the interviews selected implemented their system more than two years prior to the interview. This "purposive sampling" was employed by Pollard & Cater-Steel (2009).

Timing of interviews.

The timing of the interviews compared to the timing of implementation has also been described as important (Klyver & Hindle, 2010). The closer proximity minimises recall bias, fitting results to the problem and development of workarounds that no longer isolate the effect of the implantation on the measures of benefits of implementation. In this study, G is still proceeding with its undertakings, while A, B, C, E, F and H were interviewed within a year of proceeding. The longest, D, was two years ago, but had detailed board papers to refresh on aspects of the installation as would have been required. In these interviews, the timing fits the framework of validity described in the research.

Location of Interviews.

Local sites were selected for interviews, justified by reasons of cost and time, yet of sufficient range as to provide variety necessary for valid research. Using only local sites is an approach justified in the literature. In determining the scope of their research, Chen, et al (2008) chose local sites due to access by the researchers. These sites were selected primarily by the need to identify respondents who fit their study requirements. Their sample size consisted of four companies, because of the scope of work and process of interviews. They describe their limitations:

> it is uncommon for management consultants to be closely involved with their clients, as is the case in larger Taiwanese firms and firms in the United States. Thus, the population of companies available for study is limited. In addition, given the dearth of literature available on the functions and roles of management consultants at IT projects in SMEs, this study should be considered explorative research (Chen, et al, 2008, p.163).

Interview summary.

Following each interview, the notes were reviewed and a summary was prepared, while the interview was fresh in the mind of the interviewer. While it was intended that all of the interviews would be recorded, conditions were appropriate for only three of the eight to be recorded. Of those not recorded, four occurred in environments where recording was not feasible, while one interviewee objected to recording due to his concern for security. Of the three recorded, a full transcript was not prepared, but the recording of the interview remained available for on-going reference and clarification. Although it is necessary to

review carefully the interview, exact word for word transcripts are not necessary in exploratory research, especially as the speaker is not identified. "As long as it illustrates the generalisation and conveys what the respondent meant to say, the quotation can, in fact, be a paraphrase of the original statement" (Stebbins, 2001, p.45). According to Weiss (1994) full transcriptions of taped interviews are only required when one intends to quote large blocks of content in the research report. Otherwise there is a range of ways to refer to the recordings, and how it should be done depends on what is to be accomplished, resource and time constraints, the extent of notes and the remainder of the study's circumstances. Transcripts are also required for systematic analysis such as grounded theory approaches, but are not required in the approach used here.

Each interviewee was offered the summary to review and make comments. This feedback followed the procedure of Miles & Huberman (1994) who recommend getting feedback from interviewees to corroborate findings of study. They cite several beneficial reasons, but mainly the fact that interviewees are much more likely to know more about the area than the researcher ever will. They note that feedback has a long history in research and may even have an ethical imperative—as interviewees have a right to know. This also gave the researcher a further opportunity to access information since, having then been more informed on the area of research and having had the opportunity to organise findings more concisely and systematically, there was more knowledge and understanding of the area.

This process of validation was employed in other studies. For instance Al-Qirim (2006, p. 25) validated his research by "contacting the participants on several occasions to validate their responses (which) strengthened the validity of the research results. To further substantiate the participants' responses, direct quotes from their discussions were included in the report. Finally, participants were given the opportunity to review a draft of the final report and to reflect on the report's findings and on their responses."

Human Ethics and Professional Ethics Guidelines

The interview research methodology was notified as a low-risk project due to the research methodology being used. It has not been reviewed by one of the University's human ethics committees and the researcher remains responsible for the ethical conduct of the research. In addition, due to the potential conflict of interest of the interviewer to the referrals to interviews being strictly for research, the NZICA Professional Ethics were consulted. It was made clear to the external accounting firms making referrals and to their clients being

interviewed that the contact with them is strictly for research purposes. No attempt was to be made to solicit their businesses and any business opportunities would be (and were) referred back. This ensured compliance with professional ethics.

The next section provides detailed analysis of the interviewees and the findings that have been made.

Findings

Background of Entities Interviewed.

The entities where the interviews were conducted were all micro to small businesses whose principal activity or headquarters are based in Wellington. Of the eight, six are private companies while the other two are small industry associations. Of the private companies none have shares or securities publicly traded. As an indicator of their size, four companies would fit the criteria of exempt company under the *Financial Reporting Act 1993* while the other two would be eligible for differential reporting exemptions. None of the companies prepares accounts for audit. A description of the organisations is as follows

Entity	Industry	Ownership Structure	Size/ No. of employees
A	Scientific research	Private company Two shareholders	Micro firm 11
B	Medical	Industry association for the benefit of members	Over 300 members 4
C	Food processing for export	Private company Six shareholders and separate Board of directors	Small firm 20-30
D	Regulatory Body	Governing board Quasi government entity	National membership 11
E	Human resource facilitation	Private company Two shareholders International affiliation	Micro firm 7
F	Property and Resource Management Act 1991 consulting	Private company 1 shareholder	1

Entity	Industry	Ownership Structure	Size/ No. of employees
G	Personnel development and consulting	Private company Two shareholders	Small firm 42
H	Security	Private company Two shareholders	Micro firm 96

Summary of MCS or System Changes Made

The MCS or system changes made by the interviewees' organisations consisted of the following. Three organisations (B,D, F) upgraded their operating hardware and software systems, including their primary or operating databases. Four organisations (A,C,E G) implemented hardware, software and MCS accounting system software changes. Organisations A and C implemented MCS accounting systems in house for the first time, while E and G upgraded from obsolete, less functional systems. One organisation (H) only upgraded its MCS accounting system software. A description of the changes follows.

Organisation	System change made
A	Upgraded hardware, expanded proprietary software capability, added functionality and established remote downloading capacity
B	Upgraded hardware and related operating software (including MS-Office)
C	Implemented MYOB (multi-user) and upgraded hardware
D	Upgraded hardware and related operating software (including MS-Office)
E	Upgraded hardware and operating software, communication capability and introduced Xero to replace obsolete accounting system
F	Established network and client management database
G	Replacing obsolete accounting and business systems
H	Introduced Xero to replace obsolete accounting system

Key Findings

Decision making processes.

The decision to implement or upgrade MCS or systems was revealed to be dominated by one particular person in the organisation, usually the owner/entrepreneur. Each had sufficient familiarity with systems, particularly those in use by their organisation, to identify the need for change. Organisation A used systems in a previous organisation to establish what he needed in his organisation. B and D worked with their existing systems and structures to notice that functionality was being impaired and an upgrade was required. C had insight in working in other organisation to identify needs and requirements in his. E, G and H worked hands on with systems and, through their interests and curiosity, had knowledge of enhancements that existed in the marketplace. F had a feeling that what he was using was inadequate. These impressions and positions provided the grounding for their decisions to be made.

Having identified shortcomings, each had sufficient concern for their organisation to undertake their own exploration of system improvements. Being autonomous or in control of their organisation (A,E, F, G and H), charged with managing the operations (C) or managing systems and general administration (B and D) gave them the mandate. They also identified that within themselves or their organisation, their knowledge and expertise was insufficient to proceed on their own. Each sought advice and assistance of external consultants, as described in the next section.

Following their obtaining advice, their process of implementing MCS or systems consisted of the following. A compared his alternatives and, through close working relationships with his fellow shareholder, proceeded to replicate (with enhancements) the previous organisation's set up. Knowing what he needed, he pulled financial resources from his internal sources and from external financing and proceeded. B and D, operating in a more formal structure overseen by Boards, prepared and presented formal papers for ratification. D in particular identified that, because of previous decisions, the Board was comfortable with her general competence and did not review to a great extent the proposal, as it met their general expectations. Financing for both, within the scale of their proposals, was available from operating reserves. C relied on his hands on running of operations and continuing contact with the Board members to proceed, confident that his decisions would be endorsed and

the finance required would be available and provided. E, although comparing her proposal to functionality and resource requirements for her affiliated organisation, proceeded by her own decision. Financing was similar to A. As F, G and H have sole control of their organisations, solely (F) or in partnership (G) or in relationship (H) that they proceeded on their own. Although funding was a stretch, they are or will be financed by company reserves.

Since companies A, F, G, and H do not have formal Boards of Directors (being companies, they necessarily have directors) but they have the multiple roles of owner, manager and operator. Companies C and E are dominated operationally by the decisions of the interviewees, with the financial backing of organisation E also being supplied by the interviewee. For these six the go ahead decision as well as decisions on financing, timing, usage and all other material aspects was made at the instigation of the owner/entrepreneur or general manager CEO. Although in companies C and E there are Boards, their role in this decision was one of ratification or endorsement rather than one of undertaking or investigation. In organisations B and D, they have formal boards, independent directors and CEOs distinct from owners. In organisation B, Board papers were prepared for consideration. However, the Board's decision to endorse the paper and approve the purchase was influenced by their confidence in the preparer/interviewee and in the IT consultant who assisted in the recommendation. A similar process was described by organisation D although previous mandates and Board policies regarding asset replacement expedited the decision.

This is consistent with previous literature which found that the owner/entrepreneur CEO dominates and forms the personality and the values of the organisation, at least until there is further growth which surpasses the capacity of informal communication or when external or equity financing is needed. A recap of the decision making is as follows:

Organisation	Decision maker	How decision was made
A	Shareholder/owner	Obtained information externally, evaluated and proceeded
B	Board	Board ratified formal paper prepared by administrator

Organisation	Decision maker	How decision was made
C	GM and Board	Obtained information externally, evaluated and proceeded. Obtained subsequent approval of other Board members
D	Board	Board ratified formal paper prepared by administrator
E	Shareholder/owner	Obtained information externally, evaluated and proceeded
F	Owner	Obtained information externally, evaluated and proceeded
G	Owner	Obtained information externally, evaluated and is proceeding
H	Owner	Obtained information externally, evaluated and proceeded

Engagement and use of consultants.

In the previous literature, consultants to SMEs serve roles including trusted advisor, outsourced resource (Ren, Ngai and Cho, 2010), compliance facilitator, source of advice in specialised areas and supplier or customer. This study is consistent with the previous literature. As described above, each decision maker understood the fact that they had insufficient internal resources and expertise to manage, operate and make changes and upgrades to their system and MCS on their own. They realised they needed advice from external consultants. Except for A, E and H prior to this decision point, all had established consulting arrangements with either or both IT consultants and/or external accountants. The relationships were, in the case of IT consultants, routine system maintenance and ad hoc advice; and, in the case of external accountants, compliance work for annual accounts and taxation and ad hoc advice. In addition, C used an external accountant to maintain its access database, while F completely outsourced its accounting.

These existing relationships were deployed to assist and support the decisions to install or upgrade systems. What has been found in this study was a strong, unquestioning reliance

on the advice received from the consultants, as their advice was accepted and implemented without extensive comparison or questioning prior to proceeding. In this study reliance on the consultant extended so far as to be the sole source of advice for A, B and H with the consultant's suggestions taken without question, cross checking or comparison. Only C and D made comparisons to the advice received, yet only cost comparisons, not with the configuration proposed. E relied on advice from a mate and, through their friendship, accepted his advice. E and G used other sources to make comparisons for certain aspects (hardware for E, database for G), while still accepting without question advice on the MCS.

This reliance for B, C, D, and G grew from on-going relationships with their consultants of at least four years duration. Yet the same apparent degree of reliance was indicated by A, E and H, even though their relationship with the external consultant commenced at the start of the system change. A met the consultant at a trade fair and found the advice satisfactory and the price within expectations. He accepted it without sourcing other advice. E established her relationship on the basis of having formerly been co-tenants with the external consultant in the same building, with no further testing or additional consideration of their competence or expertise. H met the consultant at a business conference both happened to be attending, with the relationship springing from informal chats.

Previous literature indicates a different nature and scope of arrangement for IT consultants and external accountants. In contrast, the relationships found in these interviews are similar as both provided on-going support to operations rather than just to specific finite engagements for specific projects. The IT consultants have continuing roles in maintaining and supporting systems. The external accountants have the normal periodic involvement with the firm. Both consultants' roles are similar for the organisations by being recurring, cyclical, involved, available for ad hoc questions and needs and present throughout the organisation. Therefore, variations between the role of IT consultant and external accountant (other than specific function) were not observed.

A recap of the relationship and the advice received is as follows.

Org ID	Consultant used	Nature of relationship	Advice received and deployed
A	IT Consultant	Met at Trade Fair	Hardware, system, network and security requirements. Price within expectations. Accepted sole recommendation
B	IT Consultant	6 years prior working relationship	Complete project solution and installation. As consultant would maintain it, accepted advice without further question
C	IT Consultant	10 plus years working relationship	Hardware and system that would support MCS and database determined by GM. Accepted recommendation but checked prices.
D	IT Consultant	4 years prior working relationship	Complete project solution and installation. As consultant would maintain it, accepted advice but checked prices with two other IT firms
E	External accountant	New, on retirement of incumbent	Consulted offshore affiliate on hardware and accepted as presented the MCS accounting recommendation
F	IT Consultant/Mate	Long standing personal relationship	Network, hardware, security and communication facilities accepted without further checking
G	IT Consultant which supplied operating software	Replacing previous consultant but had worked together through the replaced consultant	Replacing and upgrading resource management system and associated hardware and software. On-going
H	External accountant	New, on withdrawal of incumbent	Replacement of former MCS with Xero based on sole recommendation

Effect on on-going relationship with consultant.

After accepting the advice of the external consultants and proceeding with their recommendation, the interviewees experienced the on-going effects in their day to day operations. The process indicated that the relationships remained solid and continuing, with neither enhanced capacity and involvement in daily operations nor questions or concerns deriving from loss of trust and confidence. The status quo was maintained. Interviewees A, B, C, D and H were satisfied with their installation and their respective external consultant, with no indicated desire to change. Interviewees B, E and H staunchly defended the external consultant, despite E and H having some further needs and a troublesome prior experience with a previous consultant. Although A and D expressed concerns for the costs of the consultant, they indicated no immediate inclination to make a change. Interviewee G had a troublesome previous experience with aspects of their system, attributed to advice from a previous consultant, yet is placing a high degree of reliance on the consultant who is assisting in implementing a different aspect of their system. Interviewee C uses the same consultant in IT in his involvement in other entities and for a period over 10 years. Interviewee F engages consultants in many different areas. Every indication was that the on-going relationship with the external consultant will continue. Therefore the study did not find that system implementation leads to newly appointed relationships developing from the system implementation, but, where one existed, the system implementation was merely an event in the existing, on-going relationship.

A summary of the on-going relationships is as follows:

Org ID	Consultant used	On-going relationship
A	IT Consultant	Some on-going concerns for pricing but established in the role of support provided, despite the first two months of the installation being "custard"
B	IT Consultant	Unquestioning as no issues with the upgrade and few surprises. Still strongly and solely relies on consultant
C	IT Consultant	Not really used on a daily basis. Will seek them out again as growth needs dictate further system changes

Org ID	Consultant used	On-going relationship
D	IT Consultant	Business as usual. Would like more communication by consultant monthly that system is working fine, but no plans to change
E	External accountant	Highly satisfied with support given on accounting MCS but identified needs for help with Payroll processing, reporting and billing
F	IT Consultant/Mate	Relies on a variety of consultants for different aspects of business. Move of mate overseas will necessitate change but will seek his recommendation
G	IT Consultant which supplied operating software	On-going project which will be closely monitored but already committed to proceeding. On previous experience has more confidence in current consultant who has yet to indicate delays and additional requirements not originally quoted
H	External accountant	Highly satisfied with support given on accounting MCS but identified needs for help with Payroll processing due to unique requirements

Other.

SME resource constraints.

Consistent with previous research (i.e. Chen, et al, 2008) that SMEs are constrained by resource limitations all but one of the interviewees (G) was constrained by limited financial resources from achieving the full functionality they would desire. Organisation A desires more interface between product development and testing costing to billing. B would like a more robust database, providing more detailed information. C would like to implement a larger system like Great Plains or SAP. D would like a more functional web portal. E would like her operating database to link in with her MCS (payroll and accounting systems) for billing, time and cost analysis and on-going reference. F would find a billing system tailored to his requirements a great utility. G, who is still progressing through his upgrade, acknowledges that it may not fulfil all of his requirements but requires it to be more economical and efficient than was his previous installation. H is aware that his hardware is

due for an upgrade and additional software functionality is possible. Just as acutely felt as are financial constraints, the lack of internal resources and their own time that would need to be dedicated to enhancements, were identified by each of the participants as also severely lacking. Nevertheless, each indicated that the implementation or upgrade enhanced their capabilities, whether primarily through increased functionality (A, C, F, H), efficiency (E, G) or both (B,D).

Voluntariness of Use.

Voluntariness of use was defined by Devaraj & Kohli (2003) as being that performance improvements will be greater if the users believe that implementation is not mandatory. This was explored in this study by inquiring about the users of the systems and their roles in implementation. Although each interviewee was the main involved party in the decision making (for A, F, G and H the final decision maker) each provided information on how working with the new system benefitted users. For A, the new system has led to growth and his employees find the system interesting to work with. For B and D the increased speed and efficiency has been embraced and objections to using the system have largely been eliminated. C finds the accounting system's reduction of workload well appreciated. E identified that her employees like the new system better, as its on-line help functions provide assistance and it has reduced their repetitive tasks in re-entering data. H, with only one other user, has a direct insight that the benefits of the new system are well appreciated. In addition to representations provided about other users, for these micro-firms the interviewees are also users so that their own opinions provide accurate portrayals of system voluntariness of system use.

Website limitations.

Previous literature indicates SMEs have limited functionality with their web sites. These limits were present in the interviewees, with organisations A, E, G and H having a brochureware web site, while organisations C and F had no web site at all. Both B and D have members' sections access on their web sites. None accept payments on line and none have integrated systems across functions. The web site maintenance also relies on external consultants, different in each case to those previously identified. None of these web site consultants were consulted on the system decisions.

Conclusions and Implications

The conclusions drawn from the current study are as follows:

Decision Making

In previous research, decision making within SMEs is concentrated in the hands of the owner/entrepreneur CEO, whose personality dictates the direction of the firm (Ensley & Pearson, 2005). Board influence at this stage of growth of micro firms is typically not as significant as in later stages (Ling, Zhao & Baron, 2007). Other employees in micro firms are frequently not specialised or possessing special expertise that would assist in implementation decisions. The results of the interviews are consistent with the previous findings in the literature. The predominant decision maker in all the companies was the owner/entrepreneur CEO or general manager. In the two instances of Board ratification a key executive effectively made the decision. In these respects, the results have been consistent with previous literature.

Role of External Consultants

Consultants to SMEs serve the roles including trusted advisor, outsourced resource (Ren, Ngai and Cho, 2010), compliance facilitator, source of advice in specialised area and supplier or customer. The two principal sources of advice for system implementation are IT consultants and external accountants (Van Halem, 1996). While the literature indicates that the role of the consultant is to assist in implementation and expedite the installation (Wang & Chen, 2006) these interviews identify a much stronger role for the consultant with a far greater level of trust and dependency. Lacking in in-house expertise, each of the SMEs interviewed sought external advice. They relied on the consultant so far as to be the sole source of advice, with the consultant's suggestions taken with little question or cross checking or comparison. The interviews established a far greater degree of reliance than is present in the literature.

Effect on On-going Relationship with Consultant

The results indicate that the consulting relationship is a continuation of the business relationship in which system changes are merely a part. The issues of trust or conflict identified in the previous literature were not present.

The literature indicates a different nature and scope of arrangement for IT consultants and external accountant. In contrast, the relationships found in these interviewees are similar as both provided on-going support to operations rather than just to specific finite engagements for specific projects. Both consultants' roles are similar for the organisations by being recurring, cyclical, involved, available for ad hoc questions and needs and present throughout the organisation. Therefore, variations between the role of IT consultant and external accountant (other than specific function) were not observed.

Overall, the interviews indicated that the degree of reliance placed on the consultants, and the unquestioning dependency, exceeded expectations.

Summary of Results from Interviews

From the interviews, there was consistency found in the decision making processes made by the interviewees, dominated by the founder/entrepreneur CEO. The lack of in house expertise was also consistent with SMEs as was the use of external assistance. However, the degree of reliance on the external consultants advice and the unquestioning acceptance of their advice exceeded expectations and indicates that the consultant's impact on the organisation, including effects on growth and development via the system usage is far greater than has been indicated. The on-going relationship with the consultant also exceeded expectations, through the continuity expressed, despite some shortcomings in advice and opportunities for additional assistance that were identified.

Limitations of the Study

This study, using the exploratory theoretical framework, limits if not prevents its ability to be generalised. Thus the findings on the role of the external consultant, while being inconsistent with the literature cannot be seen as a refutation of those findings. The validity of the findings is limited by the research method. The exploration provided indications that require further research, designed in a way to provide greater degrees of generalisation, perhaps using more quantitative approaches, to guide interested parties.

The literature finds that accessing SMEs, particularly at the micro level, is difficult, due to their degree of confidentiality and lack of requirement to publicly disclose information. The methodology used herein was tailored to overcome this, but contained limits over the breadth of organisations and the range of options available. This methodology is unlikely to

identify those SMEs with a technology background who wouldn't require external consultants. An SME that develops its own systems would also not have been selected. These organisations may have provided interesting contrasts to the outcomes found to date.

The interviews took place in one place, Wellington, New Zealand. Research indicates that there are significant variations between countries and cultures that would not have been accounted for in the present study. In addition Hofstede & Hofstede (2005) found that there are cultural differences with degrees of respect and authority between senior and subordinate that may have an effect on the relationship between the decision maker and consultant in other areas. This would also have an effect on the degree of acceptance and voluntariness of system implementation. The current study did not find any effect in this area.

Only one person in each organisation was interviewed. Although in the literature there is a stream of thought that interviewing the decision maker is sufficient, others require a more extensive analysis across functions. Gaining feedback from users of the system beyond the founder/entrepreneur may have provided additional insight into the acceptance of the system, the extent of workarounds required, the efficiencies gained, the appropriateness of advice from the consultant and the potential for growth in the business life cycle of the organisation.

Devaraj & Kohli (2003) advocate a longitudinal approach to assessing the relationship of a system to the growth and success of the business. The current study only identified the state of the organisation at a distinct point in time.

The method of selecting subjects for interviews, being sourced from consultants and systems providers, gave a range of small businesses of different sizes, application and industries. Although this was a desirable outcome, it is unlikely to have provided reference to businesses that have had unsuccessful or failed installations or upgrades and dissatisfied or terminated relationships with consultants. Therefore, decisions made by founder/entrepreneur CEOs that were not appropriate or advice received from consultants or results of their involvement that did not serve the organisation were not identified. The selection methodology would need to have differed or an alternative selection methodology engaged to cross check the results of different scenarios.

Future Research

Business life cycle.

The business life cycle has a notable effect on system usage and implementation as noted by Davila (2005). Although this research explored the initial adoption or upgrade of systems as SMEs entered the growth phase, future research may examine further matching of coordination and control systems being adopted to further points in the business life cycle, as an SME evolves and grows.

Cross comparison with consultants.

This study only interviewed the recipient of advice. Future research could interview the consultant providing the advice. This would provide a cross check on the extent of reliance placed, identified by the interviewees, and on their satisfaction and degree of reliance placed identified by the interviewees. Comparing results by having interviewed both parties would round out the analysis and enable the assessment of the degree of reliance found herein.

Enhancing the role of external accountant.

The external consultants discussed in the interviews were engaged by the business in the system implementation. The literature identifies that for external accountants in particular, there are indications that their role is limited to that of compliance rather than as a business advisor, providing suggestions and support for the growth of the business (Gooderman et al, 2004). This limitation was noted in this study. Future research could target the role of the external accountant in the business, particularly to determine whether implementing management and accounting systems enhances the role of the external accountant, supplants it or facilitates changes that benefit the organisation.

Implications

This research may assist external consultants to develop and enhance the range of services they provide to the micro firm, particularly in the extent that they maintain continuity and continuing involvement with the organisation. This was indicated as being desirable by C and H and would seem to be appropriate for organisations lacking the resources internally. It may also be useful for system providers by enabling them to have a better appreciation for the needs of SMEs as they tailor applications for the smaller sized firms.

Appendix One Interview Questions

1) How many employees and what was the system in place prior to the new system implementation?

2) Generally, how are decisions made by the entity?

3) What was the process used in making this decision to install a new system?

4) What were the reasons for implementing a new system?

5) What external consultants were used to assist with this implementation?

6) How was it decided whether and in what capacities to use them?

7) What impact for both the project and on the business in general has using the consultants provided?

8) What has been the net effect on the business from having undertaken the system implementation?

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