Replicability of the Silicon Valley in the North Shore City

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Abstract

Over the past decade the theory of Industrial Cluster (Porter, 1990; 1998a) has received a significant attention because of its seeming promise to change the regional economies into thriving centers of wealth and innovative excellence comparable in success to celebrated places such as Silicon Valley in San Francisco Bay area. Porter (1990; 1998a) argues that such places derive their strength from geographic concentrations of highly specialized companies that are both competing and collaborating. In his view those concentrations also lead to increased interdependencies of firms through value chain relationship and expert knowledge spillover which are further factors that also attract new companies to locate in vicinity and thus in process enhance synergetic effects of the region.

This thesis provides an alternative view which, being based on local conditions, argues that concentration of specialized firms does not necessarily, implies dynamics that lead toward kind of industrial cluster described by Porter. Specifically, this thesis argues that cultural foundation play a key role in determining the degree of interfirm connectedness and whether the business collaborative dynamics and interconnectedness seen in Silicon Valley will take place. Similarly, this thesis argues that concentration of specialized companies does not have to be driven by business enhancing factors of Porter's diamond model and that may be merely driven by lifestyle concerns and needs of entrepreneurs themselves.

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Chapter I

Introduction

1.1 Silicon Valley – the place

Silicon Valley is the name that evokes instant recognition. Over the years it has become the symbol of success, technological innovation and to paraphrase old saying, idea-to-riches experiences. In fact, global players such as Hewlett-Packard, Intel, Sun Microsystems, Apple, Cisco, Yahoo, Google and a number of others are all part of this Silicon Valley story.

This region that had no previous industrial history or technological tradition has over the last 40 years became the hub of technological creativity and the magnet for world's best and brightest (Saxenian et al, 2002). Hall (2001) even states that Silicon Valley also has the highest concentration of Ph. Ds in United States[1] and yearly sales that exceed $40 billions. Considering the impacts of this region Florida (2002: 202) also writes that Silicon Valley "became the proving ground for the new ethos of creativity."

This potent combination of science, creativity and business has created some of the most advanced technological achievements in the human history and brought it to the households around the world. Most remarkably, all this activity is being done on a stretch of land of some 10 by 40 miles. The book *Silicon Valley Fever – Growth of High-Technology Culture* describes rather eloquently the nature of Silicon Valley when it states that, "Silicon Valley represents Olympic-style capitalism." (Laresn & Rogers, 1984: 28) This modern miracle has become the

[1] According to the book *Cities in Civilization* Silicon Valley has over 6000 Ph. D degree holders

focus of numerous studies and center of interest of governments from around the world. Its business success has been hailed as proof of superiority of its business model, which has been named "the Holy Grail of economic development" (Sturgeon, 2000: 15).

Considering the sheer magnitude of Silicon Valley's success it is not surprising that it has fired-up peoples imagination and prompted governments to invest in the idea of replication. In fact, the Siliconia website identifies over 100 places from around the world that even tried to adopt a version of its name.

Table 1 Some Silicon Valley replicas

Silicon Wadi Israeil	**Silicon Vineyard** British Columbia	**Silicon Village** Massachusetts USA	**Silicon Valais** Switzerland
Silicon Spires Oxford, UK	**Silicon Saxony** Germany	**Silicon Fen** Cambridge, UK	**Silicon Bog** Ireland
Silicon Alps Austria	**Philicon Valley** Philadelphia, USA	**Silicon Island** Taiwan	**Silicon Forest** Australia

Source: Siliconia website

The number, of course, does not include countless other locations that are striving to replicate Silicon Valley success but prefer to keep their own identity. Despite many failures to replicate their own version of Silicon Valley some of these locations have had relative success in copying Silicon Valley prompting others to seriously look into the concept of replication. (Bresnahan, et al, 2002)

Bangalore (India) is, for instance, increasingly taking contracts from Silicon Valley companies that are also expending there a number of their own offices and operations. Moreover, many of the original Indian expatriates who helped building original Silicon Valley are returning home crating a new potent mix which makes Bangalore a new Asian hub of creativity. Unsurprisingly, Bangalore is being dubbed "India's Silicon Valley" (Devraj, 2000: 2).

Mexico's Guadalajara is increasingly becoming a center of electronics manufacturing with a number of American companies establishing there their electronic operations (Vargas, 2003). Guadalajara is becoming known as both "Silicon Valley of the South" and "Silicon Valley of Mexico" (Vieto & Pratt, 1999: 14). Canadian Ottawa electronic industry employs some 75000 people that work for 1000 high-tech companies. Unsurprisingly Ottawa has been called "the Silicon Valley of the North" (Mallet, 2002; Canadian high Commission, 2003: 2)

Admittedly, these few examples are only a tip of the iceberg with the number of hopeful regions from around the world constantly on the rise. One such location is certainly concentration of high-tech companies in North Shore – Auckland, New Zealand. Promise of high profits, increased standards of living and prestige generated by an industry that is largely non-polluting[2] is certainly proving as an attractive proposition. Nevertheless, it cannot be discounted that number of locations worldwide have attempted replicating Silicon Valley, which either failed, or had very limited success that did not completely justify investments poured into the idea.

State of Illinois has reportedly invested, between 1985 and 1993, $12.8 million in 76 companies a part of their 'Silicon Prairie', abandoning the practice in the end because of limited success and budget constraints (Businesweek, 1997).

Recently there have been numerous reports in media that Scottish version – Silicon Glen – is increasingly becoming a silicon desert as a number of high-tech companies once located there are starting to look into the idea of relocating their

[2] While it is true that some electronic components do contain potential pollutants, overall high-tech industry is less polluting than heavy manufacturing in other fields. This is particularly so if under high-tech one count only software development companies as it is the case with most high-tech companies in North Shore

operations abroad (SSP News, 2003). Moreover, Silicon Glen's predominant reliance on international companies to locate there and provide jobs as well as large absence of domestic ICT[3] industry is seemingly only intensifying its demise when international companies decide to cut the costs. (BBC, 2002)

Nevertheless, experiences of places such as Silicon Wadi in Israel and Taiwan as Silicon Island, encourages many policy makers into thinking that cloning of their Silicon Valley version is not such a remote possibility. (Bresnahan, et al, 2002)

1.2. Not a new phenomenon

The tendency to mimic and to take on the image and subsequent glory of another place is seen throughout history. A number of locations attempted to emulate or take on the image of other either contemporary or historic celebrated place. Constantinople – today's Istanbul – was also known as a "Rome of the East." Even after the Roman Empire collapsed "Rome of the East" continued carrying its image to the early Renaissance when it was taken by Turks. (Catholic Encyclopedia, 2003)

St. Petersburg was in medieval times known as "The Venice of the North", which is the name that is being proudly recited even today. In late nineteenth century Edinburgh was know as a place of intellectual briliance and stunning architecture. It was the place where philosopher and historian David Hume was born and lived. Edinburgh was subsequently dubbed "the Athens of the North."

[3] Information and Communication Technology

Even today we can see such examples in the places like Lexington – Kentucky which is also known as "Athens of the West" becaues of its early history as a centre of culture at the time when most of Kentucky and USA were still in early stages of conquering uninhabitable land. (Porter, 1999)

This apparent desire to take on the persona of another celebrated place is seemingly deeply rooted in the human psyche. As Rosenberg (2001) demonstrated very similar reasoning is behind desire of many places around the world to clone their version of Silicon Valley. While the above locations might at first sight look like having little to do with Silicon Valley, Hall (2001) demonstrated that in a very similar way many of these original locations were centres of creativity and fresh thinking of the time. Hence, a desire to be equated in image and status with these places reveal deeply intrinsic need of people to be identified by a particular location.

1.3. The significance of the place

Regardless of a place appeal new information technology and ability to transfer information instantly may bring into the question legitimacy of the need for a specific geographic location. Companies now can locate different parts of their corporation virtually anywhere while keeping integrity as if they were located in a single place. In fact, there are apparent examples that seemingly support this thesis. For instance, installation of earth station in Bangalore India enabled a great number of Indian specialists to work from their home country while being

paid by American companies. Such practice can be seen as gaining momentum also in places such as Taiwan, China, Ireland, Israel and number of others.

In his book *Death of Distance* Cairncross (1997) explains at length how new technology has changed the rules of the location decision-making game. At the beginning of the book Cairncross presents the essence of this view when he writes:

> No longer will location be key to most business decisions. Companies will locate any screen-based activity anywhere on earth, wherever they can find the best bargain of skills and productivity. Developing countries will increasingly perform on-line services – monitoring security screens, running help-lines and call centers, writing software and so forth – and sell them to the rich industrial countries that generally produce such services domestically. (Cairncross, 1997: xi)

Regardless of promoting seemingly a modern view of how technology is changing location decisions and business dynamics, such opinion has long been held by Marshall (1907). While writing about nineteenth's century England and specialized places that were behind its market success of the time, Marshall also added:

> Every cheapening of the means of communication, every new facility for the free interchange of ideas between distant places alters the action of the forces which tend to localize industries. (Marshall, 1907: 273)

While this sounds a compelling view, deeper analysis uncovers somewhat self-defeating character such a hypothesis poses. Whilst it is true that companies can locate their businesses around the world at the places that have the best mix of skills and productivity, these new locations are still highly concentric as opposed to dispersion Cairncross is talking about. What one can see is the emergence of new locations around the world that see rebirth of agglomeration

or spatial concentration. This can be easily seen in places such as Austin Texas that has become a magnet for both businesses and talented people as well as in places such as Bangalore, Taiwan, Silicon Wadi and others that are attracting investment capital and are becoming recognized as entrepreneurial centers.

Hence, the question of where to locate a company of some of its parts appears to be still high on the agenda of many enterprises. Therefore, it is crucially relevant to understand what forces are influencing such agglomeration and subsequent concentration of specialized businesses.

1.4 Research problem

Given the importance of a place it is pressingly relevant to know what characteristic are determinants of its success. Silicon Valley itself is primarily a geographic location - a place. Hence, understanding the essence of what comprises its building blocks is crucial for the successful replication and recreation of similarly successful location elsewhere. Specifically, the issue is what model or blueprint is to be used in order to replicate Silicon Valley in the North Shore City context.

Porter's Opus *The Competitive Advantage of Nations* (1990) is firmly centered around advantage certain nations and regions may have over others. This work is a deep analysis of how certain characteristic[4] of a place are shaping local economy and how places can assess their position given the factors Porter identified. Most importantly this is the work that had a tremendous influence on

[4] In this context characteristics of a place are considered as factors and properties of a place that give it clear polarizing economical advantage over other locations in similar line of work as described by Porter's diamond model (Porter, 1990, 1998a)

regional economic policies of numerous countries of the world. Primary focus of Porter's regional development model was in encouraging cluster building. Accordingly, a number of governments and regional development bodies embraced the idea and included it as a part of official regional and national development policies. For example, recent Canadian Government's business plan for 2002-2003 identifies management of business clusters as one of the principle activities that is also going to receive government funding for this period (Ministry of Enterprise, Opportunity and Innovation, 2002)

Similarly, a number of influential New Zealand papers actively encourage the implementation of clusters as business model of regional development. (Cluster Navigators, 2001; Starkwhite, 2002; McCann, 2003)

Industry Cluster theory implies that businesses in particular industry collocate and in process form a value chain that enables them to benefit from each other services and knowledge. (Porter, 1998a; Malmberg & Maskell, 2001)

However, Porter introduced the idea of clusters not only as a mechanism of bringing different companies together into network-like collocational structure but more importantly as a vehicle of enhancing regional advantage. Geographical proximity, Porter (1990, 1998a, 1998b) argues, makes companies more compelled to innovate which in itself creates an advantage for the region now relying not only on its inherent factor[5] endowments but on intrinsic characteristics and skills of its people.

Porter (1990, 1998a; 1998b) explains that closeness increases the pressure of competition and rivalry, which then propels the companies to explore new

[5] Factors such as cheep labour and availability of native raw material

avenues that would enrich their product or service and differentiate it from those offered by neighboring competitors.

Thus, we can conclude that clusters are places of both increased collaboration and competition. Such reasoning is certainly in line with one of the most recognized case study of Silicon Valley by Saxenian (1994). In the conclusion of her book *Regional Advantage – Culture and Competition in Silicon Valley and Route 128,* Saxenian writes:

> Silicon Valley continues to reinvent itself as its specialized producers learn collectively and adjust to one another's needs through shifting patterns of competition and collaboration. (Saxenian, 1994: 161)

Accordingly, concentration of skills and expertise as well as increased degree of innovation could, according to this view, be explained through the existence of dense business cluster formations.

Nevertheless, Davies and Ellis (2000) showed that clusters often do not play a crucial role in the development of many successful regions around the world. In fact, conclusion that can be deduced from experiences Davies and Ellis presented is that clusters, if they appear at all, are rather exceptions than a natural progression of economic development. Similarly, as the empirical results presented by Davies and Ellis (2000) show clusters are rarely associated with success of specialized regions. Martin and Sunley (2002) further question validity of cluster approach as a policy model by exploring fundamental constructs behind this theory. They write:

> Over the past decade, there has been growing interest in local industrial agglomeration and specialisation, not only from economic geographers but also from economists and by policy-makers. Of the many ideas and concepts to have emerged from this new-found focus, Michael Porter's

> work on 'clusters' has proved by far the most influential. His 'cluster theory' has become the standard concept in the field, and policy-makers the world over have seized upon Porter's cluster model as a tool for promoting national, regional and local competitiveness, innovation and growth. But the mere popularity of a construct is by no means a guarantee of its profundity. Seductive though the cluster concept is, there is much about it that is problematic, and the rush to employ 'cluster ideas' has run ahead of many fundamental conceptual, theoretical and empirical questions. (Martin and Sunley, 2002: 2)

Martin and Sunley (2002) also question practicality of cluster concept and how much of true value it adds to the practitioners and policy-makers. Considering the lack of clear prescriptive as well as descriptive strengths of Porter's cluster model they write:

> All of which begs the issue of the status of 'cluster theory'. Porter's 'clusters' are constructs. They are as much analytical creations as they are objectively real phenomena. They have no essential self-defining boundaries, whether in terms of inter-sectoral, inter-firm linkages, information networks, or geographical reach. The notion is so generic that it used as a sort of cover term to refer to a whole assortment of types and degrees of specialised industrial localization. (Martin and Sunley, 2002: 15, 16)

Hence, a legitimate question could be asked about how much of reported cluster occurrence over the last decade has been driven by efforts of governments trying to actually implement Porter's model[6] rather than by natural market dynamics.

In the end there is also another issue - clusters are primarily concerned with big picture and networking that may not necessarily appeal to businesses looking for answer of what is in it for them (Raines, 2001).

Accordingly, adequacy of cluster model deserves at least to be scrutinized in order to determine if it represents the best policy framework for regional

[6] While it is true that other models of business clustering and agglomeration economies are used Porter's model is most widely citied as prime authority of cluster development

development. More precisely, it needs to be answered if cluster model is the best blue print for creating high-tech center such as a new Silicon Valley.

Florida (2002a) on the other hand, calls for complete abandonment of industrial cluster approach and proposes different framework as a basis of regional development. Florida suggests that regional advantage should be driven by the establishment of people climate rather than solely focusing on business climate as such (Florida, 2002a). Florida argues, that talent is not just endowment or stock that is in place in a given region; rather regional characteristics are determinants of whether talent and consequently businesses will locate in the region.

Florida sees (2001; 2002b) new and creative economy as direct result of emerging of entirely new value system that is receptive to experimentation, self-expression and diversity. These creative regions and places, Florida argues, benefit from such bohemian qualities since new business is heavily dependent on human creativity and ideas. Essentially, these new places are innovative hubs where people's lifestyles are defined through their work and their work through their internal drives and desires. These are the places that streamline human creativity on one side and entrepreneurship on another while merging them together into revenue making integrative whole. Such line of thinking is seemingly also confirmed by Saxenian's findings of Silicon Valley as a place where the line between entrepreneurship and social life is blurred (Saxenian, 1994).

Each of these views explains regional advantage of Silicon Valley from a particular aspect. Yet it is important to understand to what degree each of them fit realities of a particular place as well as how to devise a blueprint for comprehensive regional policy that will open a door to successful replication of Silicon Valley.

Hence the question is whether to focus on cluster business model or whether to replace it or modify it with model that fits both realities and needs of a particular place.

In summary, the question is how to create innovation driven milieus or more specifically how to recreate or replicate a region resembling Silicon Valley as well as whether it is a realistic prospect.

This question is of particular importance to regional development since higher concentration of talent and capital also implies higher wealth. Similarly, higher wealth implies higher standards of living. Hence, the question of what makes the place a center of consistent revenue making can be of interest to everybody and in particular to regional planners and policy makers.

Given the importance of this issue for New Zealand and Auckland region this thesis will focus empirically on local issues while referencing global knowledge. Most specifically, it will explore the issue of replicability of the Silicon Valley in the North Shore City context and applicability of Porter's (1998a) cluster model in achieving of this goal.

1.5 The Scope of this Study

The aim of this thesis is to identify factors that are important for transformation of North Shore into the next center of knowledge and innovation. The thesis will compare suggestions of accepted regional development and business cluster wisdom with findings of local attitudes, opinion, beliefs and ultimately cultural backgrounds that characterize North Shore ICT business community.

Based on understanding of these findings and knowledge derived from literature review a conclusion will be deduced as to the potential applicability of industrial cluster model for the purpose of recreating an industrial center of Silicon Valley caliber and resemblance.

While this study will only focus on local characteristics and issues – hence not claiming their universal applicability and generalization – it nevertheless aims to add to the body of knowledge with insights into issues that should potentially receive a greater emphasis in considering of both theoretical conceptualization of cluster theory and its potential commercial implementation.

1.6 Limitations of the Research

Findings of this research will be primarily derived from the opinions and attitudes of local ICT business community and regional bodies[7] responsible for implementation of cluster framework and will not include opinion of wider community, students or academic personnel.

Similarly, findings of this study do not include assessment of attitudes and opinions in other industries present on North Shore neither does it include comparison of different regions in New Zealand and how such differences may relate to overall understanding of cluster framework.

The aim of this study was to primarily investigate local conditions and compare how they relate to cluster framework. Nevertheless, the assumption was that if cluster model is robust enough – because of it primarily being a framework that describes competitive advantage of individual places and locations – some fundamental dynamics associated with cluster theory should therefore be visible.

Similarly, this research does not include other economical considerations such as influence of international economic dynamics and globalization nor does it include influences of some government policies[8] that may potentially influence some regional economic dynamics and agglomeration.

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[7] Bodies that include agencies of both national and local government and privately owned regional development agencies

[8] Immigration, urbanization, etc.

1.7 Structure and Organization of the Thesis

Chapter I has introduced the thesis and its rationale. This chapter has covered the context and introduced the idea of Silicon Valley replication. Further it has put the idea of replication into historical perspective and describes significance a place still plays for businesses in the age of new technology. The chapter concludes with research problem rationale and research question.

Chapter II presents literature review findings and puts them into the context of this research. Findings are presented from perspective of four schools of thought, i.e. economic views, economic geography view, soft-externalities views and historical views. Each approach follows findings of respective discipline from earliest identified contributors to the latest available findings. Subsequently, all findings are put into perspective and summarized.

Chapter III presents findings of primary data gathering. Firstly chapter presents the finding of local business survey in form of statistical tables and subsequently provides description of results. Secondly, chapter describes findings obtained through the interviews with representative of businesses and local authorities.

Chapter IV presents discussion of findings and summary. This chapter summarizes findings of research and discusses their implications for cluster theory and subsequent utilization of industrial cluster model as a blueprint for replicating Silicon Valley success.

Chapter II

Literature Review

2.1. An Overview

Research into the phenomenon of spatially concentrated groups of companies and institutions has curiously taken several paths. One can broadly divide this research into four different categories. Oldest and perhaps the most influential was purely economic approach that looked into the revenue-enhancing externalities as benefits derived from agglomeration of the companies and other support institutions (Marshall, 1907).

Economic Geography is the second discipline that explored issues of agglomeration and spatial economies. Economic Geographers tried to explain what forces, economic or otherwise, compel people and businesses to cluster together. Primary thrust behind this line of study was identification of cost-reduction factors (Weber, 1909).

Third school of thought explored agglomeration through the lens of 'soft' externalities. Scholars in this group attempted to determine cultural, social and traditional foundations responsible for the creation and development of local spatial concentrations of companies and institutions. Out of this research came new popularization of concepts such as knowledge spillover and recognition of tacit learning, networking as well as cultural and social building blocks of the economy. (Putnam, 1993; Saxenian, 1994)

Lastly, the forth group of research looks into spatial concentrations from much wider perspective. The main argument is that throughout history there were

places, which rated as cultural, scientific, trade or artisan epicenters and that emergence of places such as Silicon Valley is simply a modern manifestation of this age old phenomenon. (Hall, 1998; Florida, 2000)

These places, they argue, had certain characteristics that appealed to very specific group of people. Hence, it makes sense to boost the image of the region in a way that would attract scientists, engineers and entrepreneurs (Kotler et al, 1993)

2.2 Classical Economics' Approach to spatial concentrations

While the idea of agglomeration was first explored by Thünen[9] (1826) its true economic benefits weren't largely recognized until 1890 when Victorian economist Alfred Marshall published his monumental work *Principles of Economics* (1907) at which point the idea of benefits derived from localized concentrations of specialized industries entered economic thought. What Marshall successfully argued was that Britain's 19th century economic growth was largely due to the concentration of specialized skills and businesses in several key industries. Marshall identified clear specializations of the regions such as machinery industry in the West Midlands, cutlery in Sheffield, cotton textiles in Lancashire, furniture industry around High Wycombe, and others that supported his thesis of agglomeration (Marshall, 1907).

The central tenet of this theory was that economies of scale do not exist only inside companies but outside as well. Hence, it made sense for related

[9] Thünen was interested in interdependence of town-based manufacturing and rural food production, i.e. interdependence on each other's products

enterprises to concentrate together where they could benefit from each other's specialized skills and resulting knowledge spillover, accessibility to pool of specialized labour as well as infrastructure adjusted for an industry of which they were a part.

Marshall's contemporary, Schumpeter, expanded on this view with identification of entrepreneurs as drivers of innovation and economic evolution of localized economy (Schumpeter, 1934).

Schumpeter defined "creative destruction" as an intrinsic part of innovation and recombining of resources and knowledge in order to meet new and emerging needs of the market. This concept was later used as an explanation of how companies imitate each other's innovation and progressive replacement or "destruction" of obsolete product in order to remain competitive. (Nelson and Winter, 1982; Heertje and Perlman, 1990; Cohen, 1995; Harris, 1998; McKnight and Boroumand, 2000)

Like Marshall, Schumpeter (1934) suggested that firms collocate in order to reduce transaction costs and increase information flow between businesses. Accordingly, collocated firms became centers of innovation and entrepreneurship.

Nonetheless, neither Marshall nor Schumpeter identified dual nature of agglomeration. It was Hoover (1937, 1948), who first drew a clearer distinction between phenomenon of urbanization and localization of economies. Hoover argued that localization economies characterized situation where companies cluster in a manner that would increase the degree of specialization of the place.

In doing so companies would increase their competitive advantage and grow faster because of accessibility to highly specialized workforce and infrastructure. On the other hand, urbanization economies would attract enterprises that need diversified environment and workforce in order to give them competitive advantage. This division of categories largely persisted to our present day.

As an addition to these earlier works came a new approach to the theory of agglomeration based on path-dependency. One of the first proponents of this approach Myrdal (1957) explained progressive difference between developed and underdeveloped places, regions and countries through his theory of "cumulative processes." Myrdal rejected established idea of economy equilibrium and suggested that every disturbance in economic system would tend to move it progressively into the direction of disturbance rather than bringing it into back into balance.

Essentially, this meant that through whatever historical accident a better standing place got its initial advantage, it would keep depleting skilled work force from, by now, progressively poorer region or place. This process would cumulatively reinforce itself, as more and more skilled workers would leave underdeveloped place because of progressively more promising opportunities of developed place. In time such dynamics would give certain better standing places critical mass that is capable to transform the place into the centers of excellence.

While Myrdal concentrated on cumulative causation Hirschman (1958) on the other hand focused on polarization by identifying key sectors of economic development through his "backward and forward linkages." These linkages

represented inter-industry interdependencies. Backward linkages were concerned with identifying how certain sectors depended on other sectors for their input supplies[10]. Forward linkages, on the other hand, were concerned with identifying key sectors that were distributing their outputs[11] as inputs to other sectors further down the value chain. This analytical model has proven to be very powerful tool in identification and measure of cluster strength. (Porter, 1990; Rabellotti, 1995)

These earlier works have set the tone of what constitutes business clustering and agglomeration economies. Implications were that existence of such centers might initially be driven by historical accident that gave a place initial advantage, e.g. availability of a particular raw material (Marshall, 1907). Nevertheless, once entrepreneurs in a particular field perceived such advantage more of them would set their businesses in vicinity in order to benefit (Marshall, 1907; Schumpeter, 1912, 1934). Such dynamics would also deplete existence of particular skills and expertise from other places and make them more available in the new specialized location (Myrdal, 1957). As more entrepreneurs and talented workers locate in vicinity the place would grow in sophistication that would establish a particular infrastructure needed for this particular industry (Marshall, 1907). Such infrastructure would attract other latecomers and in process increase a pressure of competition and would make the need to innovate more compelling (Schumpeter, 1912). However, competition would not be the only

[10] An example of backward linkages in high-tech industry is computer manufacturing sector being heavily dependent on supply of electronics components manufacturers

[11] An example of forward linkages is software development sector being dependent on computer manufacturing to assemble combination of components that would give their software a maximum advantage in the eyes of the customer

dynamic taking place as greater number of businesses would also form a value chain which would be defined by ones company's output becoming another company's input Hirschman (1958). Furthermore, many entrepreneurs, and specialized workers would also come with their families thereby starting a process of urbanization (Hoover, 1937; 1948).

Despite these earlier works into the influence of agglomeration on economic progress such ideas were not considered mainstream in a discipline primarily focused on concepts such as market equilibrium, competition and trade.

Nevertheless, cultural changes in the society and failure of Fordism[12] as an industrial framework to bring about promise of massive increases in productivity have spurred a new interest in Marshallian industrial districts of small and specialized producers. In 1984 Piore and Sabel revisited Marshall's ideas through their book titled *The Second Industrial Divide.* Piore and Sabel (1984) argued that our modern society has witnessed two industrial "divides." First divide occurred at the turn of 20th century when emergence of mass production influenced by Fordism and Taylorism[13] diminished and replaced craftsmanship and artisan method of production. This shift was subsequently accepted by most industrial nations, essentially setting it as a standard. Second divide, they argue, started occurring in early 1970s when period followed by stagnation of the world economy saw a revival of "flexible specialization" through emergence of 19th century style artisans i.e. small and medium businesses. They built their

[12] Derived from Henry Ford approach, which first introduced the concept of mass production through moving product lines.

[13] Derived from Frederick Taylor who through his scientific method theories tried to increase productivity by reducing a number of movements necessary to perform a task. It essentially scaled down a role played by humans to the role of machines

case on Emilia-Romagna Italian northern district or as it is often called "The Third Italy" where they witnessed a successful resurgence of highly specialized family-based enterprises.

This seemingly apparent paradigmatic shift that was in progress also caught the attention of other scholars who started exploring its implications. Research revealed a number of issues influencing and being influenced by spatial agglomeration of the industries and by extension the overall economy.

At around the same time Jacobs published her book *Cities and the Wealth of Nations - Principles of Economic Life* (1984) in which she argued that the advanced cities are characterized by constant innovation and diminished need for import goods.

> Any settlement that becomes good at import-replacing becomes a city. And any city that repeatedly experiences, from time to time, explosive episodes of import replacing keeps its economy up to date and helps keep itself capable of casting forth streams of innovative export work. (Jacobs, 1984, p. 41)

This meant that the primary focus for regions was improvement of their innovative capacity and identification of forces that would drive such import-replacing growth.

Subsequently, in mid 1980s some economists, most notably, Romer (1986) started working on "new growth theory." Unlike most of his predecessors in the field of economics, Romer argued that ideas and knowledge diffusion are the essential and primary catalysts of economic growth and thereby driving forces behind regional development.

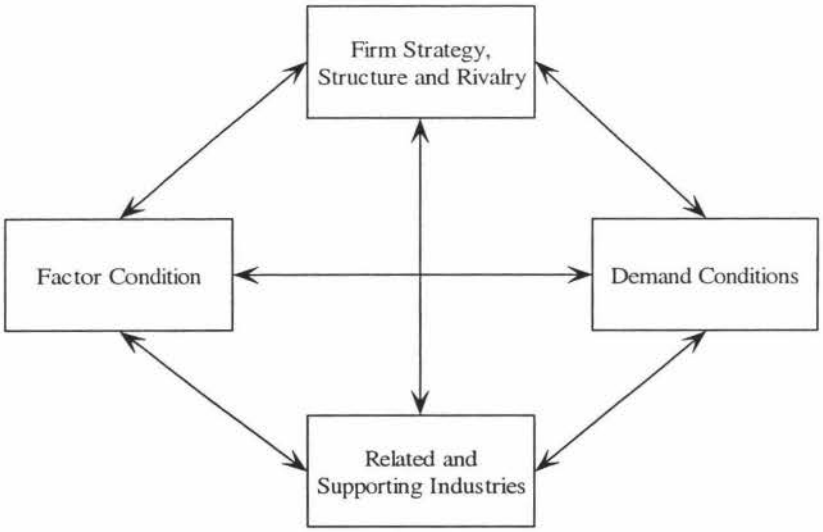
These ideas were strong turnaround in the discipline accustomed to dealing with quantifiable variables and concepts. But more importantly these new insights encouraged economists to seriously consider significance of agglomeration on economic systems.

Subsequently Porter (1990) published his influential book *The Competitive Advantage of Nations* that became the cornerstone of modern agglomeration economies and business clustering. In order to understand the depth of implication this book has brought it is appropriate to mention that prior to its publishing economic thought was centered on almost two centuries of the "comparative advantage" theory. Comparative advantage in its essence states that certain companies, places and countries have cheaper access to resources and labor that are comparatively more expensive elsewhere. This difference gives them a comparative advantage.

Through his study of 10 developed countries Porter identified factors other than cost alone that influenced degree of their competitiveness. He found that in each country there were clusters of firms that capitalized on innovation and specialization, which enabled them to become internationally competitive.

Porter's analysis showed that each of the 10 countries had common factors that gave them advantage and enabled them to remain competitive on the international market. Subsequently, he was able to model those factors into a comprehensive framework, which became known as "diamond model."

Figure 1: Diamond Model



Source: (Porter, 1990: 72)

- **Business strategies and structures and rivalry.** One fundamental characteristic of all highly competitive nations, Porter argues, is the intense competition among their national firms. This "sharpening" in domestic setting essentially prepares them for the international market. But more importantly, as Porter argues, denser spatial concentration, i.e. business clustering, makes this competition more intensive since companies are forced to innovate in order to stay in business. *"The more localized the rivalry, the more intense. And the more intense, the better."* (Porter 1990, 83)
- **Existence of related and supporting industries.** Porter also argues that successful nations and locations are marked by strong linkages (both horizontal and vertical). Theses linkages as well as any interfirm formal and informal relationship may and do facilitate sharing of ideas and innovation. For example, in the case of Italy Porter writes: "Fluid

interchange within Italian clusters is facilitated by proximity, by the strong family or familylike ties that connect many Italian firms with their suppliers and related firms, and by community spirit." (Porter, 1990, p. 443)

- **Factor conditions.** Comparative Advantage theory highlighted the importance of cheap labor and affordable resources. Porter on the other hand goes a step further and proposes that rather than having cheap labor a nation (or region) should strive toward having highly specialized workforce with skills that are hard to replicate elsewhere. (Porter, 1990, p. 78). Similarly, instead of relaying solely on natural resources a country should make use of specialized infrastructure such as communication channels. (Porter, 1990, p. 77)
- **Demand conditions.** Porter strongly argues about the need of having domestic demand for product an industry produces before entering international market. This demand Porter claims enhances sophistication, which is needed in order to remain competitive internationally. On the contrary, lack of domestic demand would prove to be detrimental to an industry as he illustrates through the case of Korea. "An important missing element in Korea is favorable demand conditions. Korean firms will have difficulty in truly innovating without more sophisticated home demand in a wider range of industries. Their distance from markets, both in miles and in the nature of buyer needs, will make it difficult to anticipate new needs or create new market segments." (Porter, 1990, p. 687)

In 1998 Porter published a follow-up book titled *On Competition*, which in more detail elaborated on ideas first presented in *The Competitive Advantage of The Nations.* *On Competition* also brought a formal definition of what the clusters are.

> A cluster is a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities. (Porter, 1998, p. 199)

Particular strength of clusters, Porter later argued, is the advantages cluster members derive from being a part of this community, advantages unavailable to non-members.

> Today's economic map of the world is dominated by what I call clusters: critical masses-in one place- of unusual competitive success in particular fields. Clusters are a striking feature of virtually every national, regional, state, and even metropolitan economy, especially in more economically advanced nations. *Silicon Valley* and Hollywood may be the world's best-known clusters. Clusters are not unique, however; they are highly typical- and therein lies a paradox: the enduring competitive advantages in a global economy lie increasingly in local things-knowledge, relationships, motivation- that distant rivals cannot match ... Because sophisticated buyers are often part of a cluster, companies inside clusters usually have a better window on the market than isolated competitors do. Computer companies based in *Silicon Valley* and Austin, Texas, for example, plug into customer needs and trends with a speed difficult to match by companies located elsewhere. (Porter, 1998b: 78, 83)

Hence, Silicon Valley is also according to Porter an intrinsic part of overall cluster phenomenon and as such obeys fundamental rules of his cluster theory that includes agglomeration and interlinking of businesses in a particular industry. Furthermore, companies in cluster, Porter also argues (1998a, 1998b), benefit from cluster imposed peer pressure that compels them to innovate and in process makes companies competitive.

However appealing cluster definition and supporting theory are still hotly debated among academic community because of seeming lack of empirical evidence that would support universal applicability of cluster theory (Davies and Ellis, 2000; Martin & Sunley, 2002).

Furthermore, as McKendrick and his associates found out, agglomeration of specialised businesses at any given location does not necessarily have to imply existence of a business cluster.

> While it is common to assume that the presence of dense concentration of firms from the same industry is evidence of agglomeration economies, this is not strictly the case. Companies might select the same location for reasons having nothing to do with the presence of similar firms. They may merely have similar needs, such as inexpensive labor or adequate water or power supplies, or may benefit from the same public policies, such as tax breaks that have nothing to do with the presence of other firms in the value chain. Such firms do not form a cluster as we define it since there is no reason to believe that their common presence generates distinct external economies (McKendrick, et al. 2000: 42).

Porter also admits that "mere presence of firms, suppliers, and institutions in a location creates the *potential* for economic value, but it does not necessarily ensures realization of this potential" (Porter, 1998a: 225).

What Porter suggests though is a need for strong "social glue" that binds businesses together and ensures "the free flow of information" (Porter, 1998a: 225). Considering overreaching extent of social dynamics in a successful cluster Porter writes:

> Relationships, networks, and sense of common interest undergrid these circumstances. The social structure of cluster thus takes on central importance (Porter, 1998a: 225).

Accordingly, successful cluster should, according to Porter's view, also include a social dimension that is superimposed on business domain and governs extent of cluster dynamics.

2.3 Economic Geography and spatial concentrations

Economic Geography is relatively new discipline that seeks to understand nature and patterns of economic activity and how are these related to human society. Microsoft Encarta digital encyclopedia defines the discipline as a:

> ... branch of geography, specifically human geography, involving the study of the ways in which patterns of economic activity and their relationship to the exploitation of natural resources vary across the surface of the Earth. Put simply, it is the geography of the ways in which people make a living, dealing with the spatial distribution of resources, and of the production and consumption of goods and services. [14]

Although other scholars had shown an interest in the phenomenon of industrial localization before him, German Economist and Sociologist Weber is generally considered to be the first scholar who formalized Economic Geography as a discipline. In 1909 Weber published his seminal work *Theory of the Location of Industries* that laid out principles for determining the optimal geographic location for manufacturing plants. Weber argued that costs associated with acquiring of the raw material and costs induced by distribution of finished goods along with total transport costs will determine the optimal location. Hence, this location is the one where total costs are minimized.

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[14] "Economic Geography", *Microsoft® Encarta® Encyclopedia 2001.* © 1993-2000 Microsoft Corporation. All rights reserved.

Weber also identified two exceptional types of industries whose locations would vary from this model. Weight-gaining industries are the ones that would locate closer to markets than to the raw materials (market-oriented). Weight-loosing industries, on the other hand, are ones that locate closer to raw materials (product-oriented). This model is based on the assumption that transport rate is constant and linear regardless of whether they are associated with transport of raw material or finished goods.

Although this model is based on strong Euclidian mathematical principle it's main disadvantage is that it concentrated solely on the cost of transportation, which does not account for all business location decisions observed in practice. Even Weber saw the limitations of this approach.

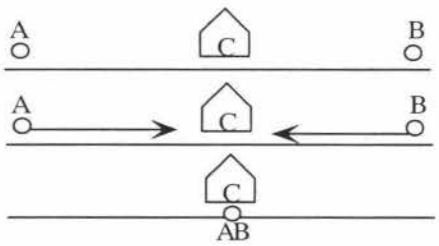
> But what happens if we take into consideration the deviations due to labour and the labour orientation which rests upon them? The discussion of these deviations has thus far been based upon the assumption that the labour locations were given and that the differences in their wage level were constant. Does the mechanism of local distribution which we have considered thus far give us any clues for determining the local distribution of such differences of wage levels, for the causes creating the labour locations, and finally for the rules determining their development which have so far been eliminated by the assumption of an unlimited supply of labour at equal cost? Apparently none whatever. This is the great gap in the analysis so far. (Weber 1929:225)

In 1929 Hotelling presented a simple model that explained, at least in certain cases, why businesses cluster together.

Hotelling explains a hypothetical case in which two identical shops are located (as illustrated in Figure 2.1) on points A and B. This would result in each shop on average getting a half of all available customers. However, if shop A moved to the place C it would get all of its own customers plus some of B. Compelled by

the pressure shop B would also have to move to the point C. This model has subsequently become known as Hotelling Model.

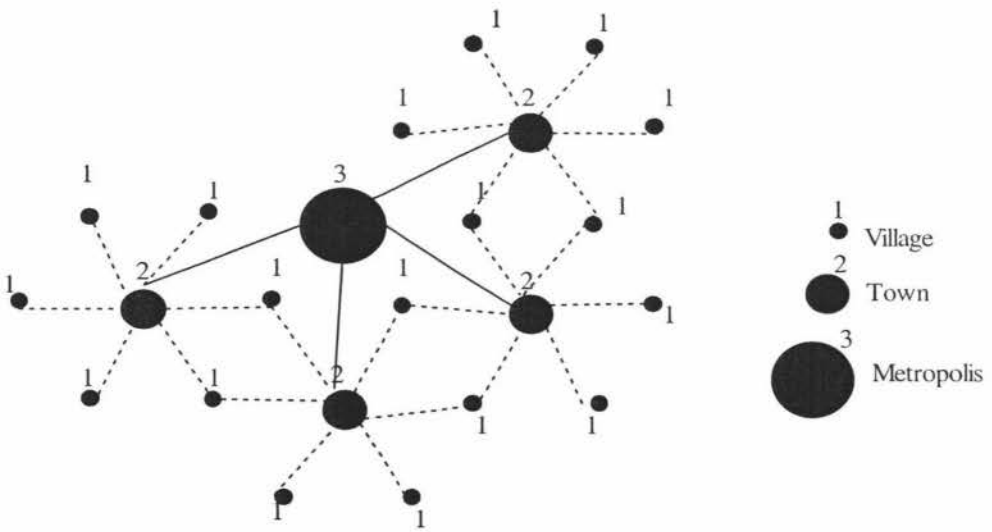
Figure 2: Hotelling model



Source: Illustrated from Hotelling (1929)

In 1933 German geographer Christaller published new *Central Place Theory* where he went a step further and included urbanization into the theory of localization. Christaller observed that many of German town were essentially equidistant. He argued that the main reason behind such a spatial distribution could be found in needs of population for goods and services.

Figure 3: Christaller model



Source: Illustrated from Christaller (1933)

In his view a price of any good or service had two parts, i.e. costs of product plus cost associated with traveling to the shop. Hence, most basic services were found in small cities and villages while services of the next level i.e. specialized and less frequently needed were located in bigger centers. Christaller even calculated the "threshold" or the minimum market size needed in order to sustain a new company or service. Likewise, Christaller defined the "range" or average minimum distance that people would be willing to travel for certain service or goods. These elements in his view determined not only where people lived but also where certain servicing companies would be located.

Losch, a German Economist extended this model (1940) and instead of small servicing centers introduced a notion of administrative and manufacturing centers.

However insightful, most of the ideas the first Economic Geographers presented were limited in their scope as they were based on idealistic assumptions or conditions that were peculiar to a specific location.

. In 1956 Isard published his seminal work *Location and Space – Economy* in an attempt to bridge and integrate different theories from both economy and economic geography ad in process set the grounding for Regional Science as a new discipline. Isard argued that theory of general equilibrium of perfect competition is not sufficient to explain phenomena and effects introduced by spatial and transport factors. Most importantly, Isard solidified the notions of location, space and economy as a part of an integrative whole that provided the context for all economic dynamics.

> In summary, the general theory of location and space-economy is conceived as embracing the total spatial array of economic activities with attention paid to the geographic distribution of inputs and outputs and the geographic variations in price and costs.
> (Isard, 1949: 505)

These ideas provided a solid research foundation for economic geographers interested in the phenomenon of agglomeration. It was soon discerned that there were indivisible bonds between people, residential location, plants and transportation i.e. "increasing returns" that govern internal

The choice of location and level of its desirability largely reflected interplay of personal preferences and perceptions or more precisely availability of information and the ability to process the information (Pred, 1967).

This finding helped explain why many companies choose sub-optimal locations. Tiebout (1956), on the other hand, noticed regularities between place amenities and migration. Tiebout argued that people "vote with their feet" when it comes to choosing place that offers optimal goods and services in relation to taxes paid. This hypothesis had serious further implications as it meant that local governments had to pay particular attention if they wanted to keep the entity that is otherwise very mobile in nature i.e. its people.

These first ideas that were put forward by economic geographers and regional scientists had largely one thing in common - they were essentially spatial analyses. This meant that human element was scaled down or considered only along the economic dimension. A change in approach began in 1970s with a number of scholars starting to incorporate new aspects to spatial analysis such as socio-spatial polarizations, social justice, socio-spatial division of labour and

inequality of development among the regions. (Hirschman, 1970; Harvey 1973; Coates, et al 1977; Massey, 1984)

As in the case of the purely economic thought, this shift in emphasis was seemingly largely driven by the failures of Fordism and awakening to the realization of complexities that permeate socio-economic dynamism of a place or a region. (Harvey, 1990)

These new insights opened the door to inclusion of human related considerations, which over the next twenty years have become an inseparable part of economic geography. (Harvey, 1989 and 1996; Massey, 1984; Soja, 1989 and 1996; Fine and Leopold 1993; Fine 1995; Miller 1995).

Nevertheless, this was also the time of more profound changes in business and entrepreneurial community in response to market uncertainties. Specifically, structural changes in companies facing vertical disintegration and geographical re-concentration of spin-off[15] subcontractors as well as subsequent increase in external transactions have been associated with geographic agglomeration and development of inter-firm networks (Holmes 1986; Scott 1988; Storper and Scott 1988).

These observations served as a basis of new type of modeling in Economic Geography i.e. 'new industrial spaces' that sought understanding of industrial place phenomenon through the interplay of disintegration-agglomeration forces.

More importantly, this model seemingly described well the evolution of places such as Silicon Valley and "Third Italy". However, criticisms have arisen with

[15] Silicon Valley is a primary example of such practices. Examples include likes of Fairchild spinning off from Shockley Semiconductors, National Semiconductors, Intel and AMD spinning off from Fairchild, etc.

regard to this approach and apparent simplicity of interpretations behind agglomeration phenomenon (Henry, 1992).

Henry pointed out that while externalization is possible response a firm can take in the time of uncertainty is not necessarily the way events will play out and nor is the incorporation of disintegration warranted. Henry's thesis has particular strength if one considers existence of giant conglomerates such as HP, Intel, IBM, Oracle and others. Clearly, while there might be a number of spin-off companies appearing in geographic vicinity it is certainly does not provide enough explanatory power for a holistic all-encompassing model that would explain agglomeration. Furthermore, recent times of uncertainty have seen an increased degree of integration whereby big conglomerates such as HP, IBM and others are buying small spin-off companies in order to give their customers integrated solution and diminish customers' need to cope with complexities of disjoint technologies.

While many theories attempted to frame realities into finite simple model their applicability and universality remains still very elusive. Moreover, most theorists have tendency to look into the phenomenon of agglomeration through the lenses of their particular discipline. Krugman on the other hand made attempt to understand agglomeration dynamics while bringing together knowledge of classical economics with findings of economic geography. While noting peculiar tendencies of specialization to occur in particular centers – e.g. financial services in New York – Krugman also notes imperfection of any model fully explaining why, for instance, all specialists of particular discipline are not located at the

same place, as it would be expected if one consider models proposed by both economists and economic geographers. For example, Krugman asks "Why don't all financial business concentrate in New York?" (Krugman, 1998: 4)

Krugman notes that in reality there are two types of forces he labels petal and fugal that are constantly tugging in opposite directions. Petal or centripetal forces, Krugman argues, are for example forward and backward linkages and increasing returns in transportation. In other words concentration enables easy access to both suppliers and buyers while enabling an industry to benefit from economies of scale and easier accessibility to specialized labour. On the other side are fugal or centrifugal forces that act as dispersion factors. Krugman identified different sorts of immobile factors that limit ability of companies to be stationed in only one place. For example, land, raw materials or particularly cheap key resources or work force are not necessarily located where industrial agglomerations are present. Hence, at least in some cases dispersion will be necessary. This thesis has particular merit in age of globalization where number of multinational companies have tendency to capitalize on unique characteristics of different places that add value to their business.

Accordingly, one can see both types of forces at play that determine how concentration and agglomeration would be played out.

However insightful, Krugman's theory still marginalizes the role played by people while concentrating mainly on needs of businesses as drivers of agglomeration. Experiences from both Silicon Valley and "Third Italy" suggest that roles played by human are in fact primary drivers of agglomeration (Piore and Sabel, 1984;

Putnam, 1993; Saxenian, 1994). Hence, people or 'soft' aspect of agglomeration deserves at least a thorough scrutiny.

2.4 Soft externalities

Summarizing rather eloquently the 'soft'[16] character of a specialized location Marshall wrote:

> ... so great are the advantages which *people* following the same skilled trade get from near neighborhood to one another. The mysteries of the trade become no mysteries; but are *as it were in the air*, and children learn many of them unconsciously. (Marshall, 1907: 271- italics added)

Perhaps due to its intangible, tacit and seemingly non-productive character this aspect of location took a long time to attract scholarly interest. In fact, apart from sporadic mentioning through economic and economic geography literature 'soft' aspects of location – social capital, culture, relationships and networks – were largely ignored by scholars researching locational phenomena for most of the 20th century. Of course, other disciplines like sociology, have long been interested in the subject while often labeling spatial dimension with names such as environment and community etc. (Ferguson, 1767; James 1890)

It is perhaps through the influences of Taylorism and Fordism that importance of 'soft' characteristic was not taken seriously. Principles of mass production that swept most of the developed world attempted not only to engineer production processes but people as well. In fact, as recently as 1990s there were renewed attempts to standardize and engineer corporations and to "mold" people into the system by the means of "new" methodology – Business Process Reengineering.

[16] Notion of 'soft externalities' borrowed from *Business Clusters in the UK – A first Assessment*

These frameworks, as it appears, neglected an important fact – people are primarily intellectual beings. Hence, artificial separation of intellectual and physical work would only meet resistance. Moreover, that resistance would only intensify, as people grew more educated. (Florida, 2002).

Back in 1890 psychologist James laid the foundation of what was to become known as "Social Cognitive Theory" in which he established the existence of connection between humans and the environment in which they exist. This view was subsequently taken up by Austrian psychologist Adler who proposed that people react to their environment holistically i.e. as a mind and body. Thus, environment is not a separate entity but rather the context that defines the characteristics people will develop. Further, Adler argued that people in this context are driven by values, ideas and goals rather than by instincts as proposed by Freud (Adler, 1928; 1964).

Behaviorists Miller and Dollard (1941) also showed that environment acts as a catalyst of observational learning where one person's action serves as a stimuli for other people responses.

This human-environment cohesion was further solidified through the Lewin's "field theory" (1951) that defined human actions as function of both environmental and personal characteristics.

These early theories confirmed not only the strength of the molding power of environments but more importantly the definition of human identity these environments seems to foster as well as the inseparability of the two. Such

findings had profound implications since they meant that people could be judged depending on the environment of which they were a part. (Putnam, 1993)

More importantly, these observations agreed with observations of other theories from economics and economic geography, which also suggested that people might actively seek out the environments they could identify with. (Tiebout, 1956; Myrdal, 1957; Saxenian, 1994)

Accordingly, it could be argued that an environment provides a psychological abstraction that defines the boundaries of one's identity and establishes the incubative setting for breeding of very specific endeavors. Such a contextual interdependence of people and environment has been researched in fields as diverse as anthropology, psychology and game theory. (Blau, 1964; Morris, 1994; Hirsch & O'Hanlon, 1995; Bernard & Page, 2000)

General consensus of these different disciplines, in effect, implied that the human-environment interactions were particularly relevant for the creation of local cultures. Moreover, these cultures had a tendency of spatial polarization, hence effectively creating 'enclaves' of localized value systems. (Hofstede 1984; Cronk, 1999)

With his book *Making Democracy Work* Putnam (1993) took this initial understanding to a new level. In 1970s Italian Federal government initiated regional change program that was to decentralize responsibilities to local governments of their 26 regions. This provided a good experimental ground for observation of the changes taking place in the society. Through detailed statistical and experimental observations Putnam and his associates noticed

peculiar regularities taking shape literally on the map of Italy. While all regions received the same funding and their local governments had the same authority their economies performed quite differently. Moreover, as Putnam found, this was only a part of the story as regularities in economic performance were also matched through corresponding performances on all other levels of local communities.

What was even more striking was that these differences quite literally followed geographical map of Italy essentially splitting it in two parts. While northern regions were progressively becoming more democratic and in the process richer their southern counterparts was consistently lagging behind. Putnam concluded that these differences could not be explained only in terms of economic performance, rather they had the roots in history of at least a 1000 years.

While northern Italy flourished under the multitude of city-states that promoted civic engagement its southern neighbor was ruled by the succession of client-patron style governments. As a consequence, differences in their respective histories created different psychological mindsets, different traditions and most importantly different attitudes toward everything from work to government. For example, the northern Italian history of artisanship and well-established work ethics opened the door for modern day entrepreneurship culture – an aspect largely absent in southern Italy.

Putnam found that there was in fact a significant correlation between the levels of region's economic and democratic advancement with another important factor – social capital[17].

Hence, in the case of Italy people in different environments developed quite differently testifying to the initial hypothesis that environments matter. However, as Putnam showed this interrelation was only a part of the story. In fact, as Putnam postulated, it was the level of social capital, civic engagement, networking, cooperation and ultimately the trust among the people in the environment that made the difference.

Putnam further expanded this idea of social capital through his book *Bowling Alone* (2001) that scrutinizes civic engagements of American society in their communities. Speaking of Silicon Valley Putnam writes:

> Another, slightly different "social-capital approach" is at the root of the economic miracle in California's Silicon Valley. Led by a small group of computer entrepreneurs, and aided by a resource-rich university community, Silicon Valley emerged as the world capital of high-tech development and manufacturing. The success is due largely to the horizontal networks of informal and formal cooperation that developed among fledgling companies in the area. Although normally competitors, these companies' leaders shared information, problem-solving techniques, and, perhaps just as important, beers after work. (Putnam, 2001: 324)

Putnam further explains that these networks include not only local companies, but also lawyers, venture capitalists, suppliers and many others. Such social capital Putnam argues is at the heart of the Silicon Valley story. Contrasting this success story to the situation when this type of social capital is largely absent Putnam writes:

> Silicon Valley's major U.S. competitor, the route 128 corridor outside Boston, did not develop such interfirm social capital. Rather it maintained

[17] Social networks and connectedness to other people

> traditional norms of corporate hierarchy, secrecy, self-sufficiency, and territoriality. Employees rarely went out after work with one another or with people from other firms. Route 128's "I'll succeed on my own" philosophy is largely responsible for its poor performance relative to Silicon Valley's according to the leading study of two high-tech centers. (Putnam, 2001: 324)

Presumably, this major study Putnam was referring to was one done by Saxenian. In 1994 Saxenian published the book *Regional Advantage – Culture and Competition in Silicon Valley and Route 128* that was a result of her long interest into the corresponding differences between the two regions.

Saxenian draws our attention to the fact that while both Silicon Valley and Route 128 had similar origins, early histories and research based foundations the two regions ultimately developed strikingly different ways of doing business. While her research is often quoted in relation to presence or absence of networking, this book demonstrated profoundly deeper differentiations of the two regions than networks alone can explain.

Saxenian argued that the value systems of the two regions were polarized on number of levels effectively encapsulating quite different definitions of success and failure. Thus, while Silicon Valley encouraged risk taking, experimentation, entrepreneurship, innovative self-expression and networking Route 128, was deeply rooted in New England's traditional values of job security, "do-it-yourself" self-sufficiency, clear definition of social classes, advancement through climbing the corporate ladders and vertical integration of companies. Such cultural differences have driven people in the two regions, Saxenian argues, to take quite

different routes when faced with similar problems. Summarizing these differences she writes:

> New England society in the middle of the twentieth century was characterized by conservative tradition that dated from the seventeenth century. The hierarchical and authoritarian ethic of Puritanism – in which identities were shaped largely by family and class background and by location in a well-defined social hierarchy – continued to influence the regional culture centuries after its arrival ... These longstanding ties to families, neighborhoods, and communities ensured strict separation between work and social life among engineers of Route 128. Silicon Valley's entrepreneurs, lacking local roots or family ties, developed shared identities around the project of advancing a new technology, barely distinguishing between their professional and social lives ... The blurring of social and professional identities and the practices of open exchange of information that distinguished Silicon Valley in the 1960s and 1970s never developed on Route 128. (Saxenian, 1994: 60, 61)

Saxenian also argued that the complex nature of high-tech business and constancy of change essentially necessitates collaborative networks, simply because there is a very limited span of expertise any company can effectively specialize in while remaining flexible to market changes. Nevertheless, Saxenian concludes that local culture of the place or environment in which people live and work will determine if they are going to follow a networking mentality.

Koepp (2002) went a step further by comparing Silicon Valley with another high-tech region – England's Cambridge also known as Silicon Fen.

Koepp recognized differences in leadership and management styles two respective regions were characterized by as defining factors of their respective successes. Koepp strongly argued against notion of sole network reliance in explanation of Silicon Valley's superior performance and instead proposed that

individual actions of key people propelled the region into the becoming the world leader of high-tech.

While somewhat critical of Saxenian's conclusions Koepp also postulated that those differences in management styles were deeply rooted in peculiarities of psyche that characterized the two regions. Koepp argued that Cambridge's sense of itself, i.e. psychological frame of mind of how people perceived themselves ultimately impacted their business performance.

A particular characteristic that Koepp identified was that while this region generated some of greatest scientific achievements in human history it didn't benefit much from commercialization of these ideas because of a preoccupation with research and a general disinterest in development. He further argues that Cambridge's misplaced sense of pride, self-praising myths[18] and general sense of self-satisfaction ultimately resulted in local entrepreneurs happily reaching a plateau of running only "lifestyle" companies. Moreover, deeply entrenched local attitudes of not-in-my-backyard antagonism to business development simply solidified this underperformance as a standard.

In his view, for Cambridge to achieve any kind or success that would resemble Silicon Valley would require abandoning these centuries old traits of contentment with status quo and embracing change.

[18] An often recited myth, Koepp argues, concerns Cambridge based Trinity College producing more Nobel Laureates than the nation of France. Koepp states that, not onli is this untrue but argues that the number of Nobel Laureates does not necessarily have a bearing on regional economic development. Yet, such myths, Koepp states are often recited by people of Cambridge, including some academics (Koepp, 2002: 236, 237)

Porter (1998a) also recognized the strength and importance of 'soft' characteristics of location and its culture. While calling a specialized location a cluster Porter writes:

> Each of the three broad influences of clusters on competition depended to some extent on personal relationships, face-to-face communication and interactions among networks of individuals and institutions ... Formal and informal organizing mechanisms and cultural norms often play a role in the development and functioning of clusters (Porter, 1998a: 313, 214)

A number of other scholars expanded on these views while enriching the picture of soft dynamics of location in terms of trust, social capital, relationships and knowledge spillovers. (Fukuyama, 1995; Shaw, 1997; Pennings, et al, 1998; Fountain, 1998; Malmberg et al, 1996; Maskell et al 1998; Maskell & Malberg, 1999)

Emerging picture is one of regions being profoundly shaped and defined by specific value systems. Accordingly, location provides people with not only jobs as many earlier theorists suggested but also with a space and place for expression and most importantly an identity.

2.5 Holistic approach

A century ago Marshall recognized that specialized locations were characterized by more than pure revenue making. These were also places where specialists could express themselves through their work. Moreover, their work served as a basis of new idea contributions by their peers. Such a place created an incubative environment that thrived on creativity and streamlined it for the purpose of propelling the business they were a part of.

> Good work is rightly appreciated, inventions and improvements in machinery, in processes and the general organization of the business have their merits promptly discussed: if one man starts a new idea, it is taken up by others and combined with suggestions of their own; and thus it becomes the source of further new ideas. (Marshall, 1907: 271)

Accordingly, the specialized districts referred to by Marshall were also innovative milieus with increased concentration of creative and innovative people.

Such milieus, Hall (1998) argues, existed throughout the history. In fact, Hall states, Athens, Florence, London, Paris and others were all such centers. Furthermore, these places had a degree of 'magnetism' that polarized their position and separated them as different and 'fresh' compared to the rest of the world within which they've existed. In his opus work *Cities in Civilization* Hall (1998) well describes the essence of uniqueness that personifies these places when he writes:

> They may be found everywhere, but they are much more likely to make their breakthroughs in certain kind of regions. These regions are characterized not by an abundance of fixed resources, but rather by a set of developed social and cultural structures favorable for conceptual advances. They may be old-established, cosmopolitan, liberal metropolitan cities, but are often emerging city regions which serve as entrepots between the already-developed world and a frontier region beyond it. Their economies are expanding rapidly through imports of goods from that developed world; and they have a high rate of immigration, predominantly of young people, who are highly experimental and untraditional in their outlook. They have strong but often very informal structures for the exchange of technical knowledge and conceptual ideas. Barriers to the diffusion of innovation are so low as to be almost non-existent; there is a constant search for the novel. Levels of synergy, not only between like-minded individuals but also between quite disparate socio-economic-cultural groups, are very high; this is the archetype of an open society. (Hall, 1998: 302)

Throughout the book and using historical examples Hall repeatedly identifies what a hundred years of research and enormous body of knowledge are

converging upon – these Silicon Valley type locations are centers that capitalize on human innate needs for creativity, expression and identity. These are seldom judgmental places with rigid hidden value system of "appropriateness" to which newcomer has to adhere before being accepted. Rather these are the places that thrive on diversity and places with maturity that enable them to capitalize on "anything goes" mentality. (Garner, 1999)

Consistent with these findings, Florida, as Jacobs (1961) before him, demonstrated through robust statistical analyses that talent has a strong tendency to concentrate on very specific and few geographic locations. Moreover, results of research also suggested that businesses have a tendency to follow the talent and station themselves at the same places (Florida, 2000, 2001, 2002a, 2002b).

These findings prompted Florida to pose a fundamental question: why do some places attract talented people while others do not?

Florida identifies a particular peculiarity of such talent-attracting locations – they provide an easy "plug-in" or acceptance atmosphere where anybody can "fit in". Florida demonstrated that most technically advanced places and leaders of their respective fields such as San Francisco, San Jose, Austin and others are also the places with highest concentration of diverse origins and lifestyles. This open-mindedness and comfortableness with diversity and subcultures creates bohemian environment that serves as a magnet for other talented and creative people to "join in" (Florida, 2001).

Florida also identified a strong correlation between bohemian concentration and concentration of technology (Florida, 2001).

Given the depth and consistent robustness of these statistical findings Florida concludes:

> In other words, talent does not simply show up in a region; rather certain regional factors appear to play a role in creating an environment or habitat that can attract and retain talent or human capital. Paramount among these factors, the findings suggest, is openness to diversity or low barriers to entry of talent. This in turn suggests that a more efficacious approach to regional development may be to emphasize policies and programs to attract human capital, as opposed to conventional approaches that focus on the attraction of firms and the formation of industrial clusters. Regions may have much to gain by investing in a "people climate" as a complement to their more traditional "business climate" strategies. (Florida, 2002)

In his book *Rise of Creative Class* Florida argues that reason why many places do not succeed is that they are trapped by their past. Reciting Olson's "institutional sclerosis" Florida shows how many regions are "trapped in the culture and attitudes of bygone organizational age". (Florida, 2002: 303)

Many of these regions had relative success in the past and are finding it rather hard to abandon these old norms, which prevents them from developing a new attitude of creative age. Such lack of flexibility and appreciation for creativity based industry drives their talented people elsewhere, which in turn Florida argues, removes much of impetus for change of the status quo.

Summarizing his findings Florida states that successful regions are marked by three fundamental characteristics – they have high concentration of talented people, they have access to needed technology and are tolerant and open societies.

2.6 Putting it all into perspective

Different schools of thoughts have emphasized different aspects of causes of agglomeration as well as why some of those agglomerations reach the status of Silicon Valley.

Economists emphasized market driven needs as factors propelling agglomeration. Over the years they enriched these views with inclusion of human or 'soft' variables, however even then it was mostly considered in economic context. While it is understandable that such views may appeal to certain groups of scholars, policy makers and business leaders, purely economic consideration is still characterized by marginalizing of roles played by human actors.

Economic Geographers on the other hand focused on identifying predominantly cost-reduction factors as a main thrust behind the agglomeration. Perhaps the greatest contribution of this discipline is that it directly linked agglomeration to the needs and wants of humans rather than impersonal market driven forces. Like Economists, Economic Geographers attempted to find strong mathematical explanations of realities and to control them through predictable and controllable models. Similarly, as in Economics, Economic Geography was over time progressively flavored with 'soft' variables associated with human behavior.

Sociologists, psychologist, anthropologists and others interested in human side of the story saw the world as direct interaction of humans and environment in which they existed. While sometimes neglecting economic needs and their

consequences 'soft'-oriented scholars demonstrated that complexities of the world or environment are directly linked to abstract, 'unspoken' sphere of human psyche. These scholars showed that people can shape and are being shaped by the environments. Moreover, this group of scholars demonstrated that the physical world is often an extension and reflection of both individual and collective frame of mind.

Finally, historians and regional development scholars interested in holistic understanding saw specialized places as creativity driven milieus. Particular contribution of this approach is that it attempts to devise a theory through balanced understanding of both economic and human factors. Such special places, they argue, are centers of creativity that capitalize on human innate needs for self-expression and identity

Clearly, places such as Silicon Valley are centers that can be understood through different lenses depending on the scholar's primary interest i.e. as economic engines driven by benefits of agglomeration economies, as places that provide better and cost-effective solutions unavailable outside their centers, as communities of specialists and entrepreneurs bound by common values or as creative and innovation generating milieus. Admittedly, each of the above characteristics partly describes realities. What is clear though is that business clustering[19] is only a part of the overall picture. Silicon Valley is a place that is characterized by not only linkages between businesses but by social networks and relationships that also translate into such linkages and increased business

[19] Although there are different definitions as to what constitutes a cluster as put forward by academic community, it is generally accepted that clusters imply collocation and interlinking of businesses.

alliances (Saxenian, 1994; Putnam, 2001). Similar story can also be told about "third Italy" where strong family ties provide a fruitful ground for social networking that translates into strong business partnerships (Piore and Sabel, 1984).

Nevertheless, such examples also pose the question as to what extent are cluster linkages applicable in regions that do not have a tradition of cooperation or wealth of social networks. Hence, a strong emphasis is also placed on internal culture that sets the prescribed tone of how business dealings are done.

Similarly, Silicon Valley is a strong economic engine that derives its power from constant innovation that stems not only from competition between companies (Porter, 1990, 1998a) but from individual inputs of creative people eager to express themselves through their work (Florida, 2002b; Koepp. 2002).

Likewise, Silicon Valley is the magnet for talented people. It is the place that provides not only an easy immersion culture that is open to diversity but also an environment that capitalizes on that diversity as a source of ideas and skills. Furthermore, there are also important logistical reasons why agglomeration of Silicon Valley type may partly occur. Certain places have advantage over others in terms of accessibility to premises and specialized infrastructure e.g. communication links and roads. Nevertheless, logistics alone does not fully explain why businesses prefer agglomerating at such places even after those perceived advantages are exhausted, as Saxenian[20] found out (Saxenian, 1998).

[20] In her Master thesis Saxenian stated that "housing and labor were too expensive and the roads were too congested" Hence, she concluded that Silicon Valley would stop growing back in 1979.

Apparently, Silicon Valley possesses both something that acts as binding glue that keeps companies together and a magnetism that keeps attracting new businesses, entrepreneurs and other specialists.

Literature review clearly points out that human factor plays a crucial role in the establishment of centers of excellence such as Silicon Valley. Clearly, this role does not end with availability of highly specialized and skilled labour i.e. place factor conditions. Rater, it can be argued that such places have an entire climate or a culture that is based on regional attitudes, opinions, aspirations and value systems that dictates the nature and the extent of business engagement as well as the extent of interfirm engagements in form of value chains relationships.

In the same vein, literature review points out that agglomeration of businesses may be caused by very diverse factors that can hardly be generalized. This is particularly visible through attempts and failures of economic geographers to devise a universally applicable model. Moreover, indications are that, at least in some instances, agglomeration of businesses and skilled people may be driven by concerns that hardly have anything to do with advantage place offer to business in term of factor conditions. For example, Florida (2001; 2002a; 2002b) demonstrated that people choose location with which they can identify and that best encapsulate their values and aspirations. Furthermore, Florida (2002b) also showed that location decision might be driven by companies' need to be close where talented people are[21]. Clearly, reasons for agglomeration are often specific to a particular industry or regional characteristics and can hardly be

[21] Such dynamics can clearly be observed in decisions of may American companies to shift many of their mission critical operations in Asian countries which is not only driven by cheap labour but rather by a growing pool of highly specialized and skilled workforce.

generalized. Hence, it is relevant for regional policy makers to clearly understand what stays behind the magnetism of their region as well as does that help their economic vision. More importantly, such insights should provide a basis for considering the cluster theory in a new light which suggest that agglomeration might not by driven exclusively by factor conditions or synergetic aspects of related and supporting industries concentrations.

Accordingly, this thesis investigates those two aspects – culture manifested through local attitudes and reasons behind agglomeration of ICT industry – that may potentially expand the understanding of business clustering phenomena.

Chapter III

Methodology

3.1 Introduction

The purpose of this study the exploration of whether the business clustering model provides enough of prescriptive strength for the successful replication and recreation of regions resembling Silicon Valley.

In order to make such assessment possible both qualitative and quantitative methods are being employed. Precisely, this research combines finding of survey of North Shore ICT[22] business community with those obtained through interviews with key actors[23] of North Shore City development.

3.2 Participants

As Porter suggested (1991, 1998) entrepreneurship is at the heart of national advantage and cluster development. Hence, entrepreneurs are primary carriers of cluster success (Saxenian, 1994; Koepp, 2002). Accordingly this research strives to draw an accurate picture of attitudes held by entrepreneurs themselves as well as by a number of players[24] who have experienced cluster implementation within North Shore ICT community.

Initial intent was to obtain opinions of the companies located at the tree North Shore incubators/technology parks[25] as well as to acquire opinions of wider ICT

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[22] Information and Communication Technology companies

[23] Representatives of local government, local Economic Development Agency and New Zealand Trade and Enterprise.

[24] Representatives of local government, Economic Development Agency and managers of North Shore technology parks and incubators

[25] Smales Technology Park, Massey University's e-centre and AUT Technology Park

community on the North Shore. Unfortunately, only a third (35 percent) of contacted residents of these centers have responded to the invitation to participate. In addition to entrepreneurial community approach had been made to some of the key actors and implementers of North Shore City development. Thus, as Table 2 shows overall response rate varies across three different groups.

Table 2 Response Rates across different groups of participants

Local Technology Parks and incubators Response rate: 7/20 = 35 %	Local ICT community Response rate: 38/124 = 30.64 %	Local authorities Response rate: 6/7 = 85.71 %

No incentives were used either for survey or for interview participation. Hence, response rate was driven by respondents' own desire to contribute to this research with their insights and observations. Furthermore, no follow-up letters were sent to encourage greater response rate due to budget limitations.

Selection of different participants was driven according to very specific requirements. Interview participants from local bodies were ones who satisfied two basic criteria:

1. These were experts from either government or private agencies with working experience in either implementation or strategizing of North Shore as the future ICT center.
2. These were individuals who either closely work with different companies in implementation of cooperative networks or have first hand access to regional statistics and knowledge of regional dynamics.

The reason for these requirements was to obtain clear top-level view from key decision makers i.e. how local bodies perceive the situation in the region and in particular among ICT businesses.

Intent to interview residents of the three technology parks/incubators was driven by the desire to determine how these companies are experiencing artificial clustering environment and whether there is a tendency toward increased cooperation, knowledge sharing or servicing between resident companies. Moreover, the intent was to compare dynamics occurring inside of these communities with those in wider "uncontrolled" business community of ICT companies in North Shore City.

Selection of participants from wider North Shore City community of ICT companies was based on four major requirements:

1. These companies were to be the primary source and produces or goods or service rather than simply third party's agents or resellers. Essentially, companies selected were software development companies, electronic hardware producers, computer servicing companies, etc. with exclusion of retail shops selling software or electronic hardware goods. The reason behind this requirement was to ascertain opinions of the companies who can define the image of the region as in the case of companies such as Sun Microsystems, Oracle, HP that are defining the image in the case of Silicon Valley, i.e. these were to be potential future winners.
2. These companies were to be geographically located in North Shore City area.

3. These companies were to be high-tech oriented businesses, i.e. such businesses were listed with USB as technology and computer companies or listed with Yellow Pages as computer and electronic companies.
4. These companies were not to be parts of existing controlled or nurtured environment such as e-centre, Smales Farm or AUT Technology Park. The reason for this requirement was to obtain a picture of how companies in "uncontrolled" environment react to the idea of cooperation, idea sharing and interfirm servicing.

The intention behind obtaining opinions from different companies was to get a first hand assessment of receptiveness of industry toward interfirm cooperation and business relationship building.

2.3 Ethical Issues

Prior to the commencement of this research an application has been lodged with Massey University Human Ethics Committee (MUHEC) as required when research is dealing with human participants. In addition to the application, a checklist provided by MUHEC has been completed and all 23 questions have been selected as NO (see Appendix E). Subsequently, MUHEC has approved both the rationale and the method of investigation.

In accordance with clause number 16 of MUHEC checklist the best efforts have been undertaken to prevent the "Use of questionnaire or interview, irrespective of the recording of the individual's identity, which might reasonably be expected to

cause discomfort, embarrassment, or psychological or spiritual harm to the participants" (MUHEC).

All survey questions have been framed with strict purpose of answering the research question while avoiding any possible misunderstanding that might potentially cause embarrassment or emotional harm. (See Appendix A)

Furthermore, all survey participants were assured in cover letter accompanying survey questionnaire that all information provided by them will be held in strictest confidence and their identity kept anonymous. Hence, upon receipt of the response letters all data have been coded without indicating source or identity of participants and all questionnaire forms have subsequently been destroyed.

Similarly, interview participants were assured that their identity would not be disclosed under any circumstances and that their anonymity would be guaranteed. Accordingly, all names of participants have been coded i.e. interviewees from local and national authorities are referred to as A group participants plus a number that differentiates one respondent from the other while interviewees form local clusters of businesses have been referred as B group plus a number. Furthermore, because of possibility that some of those participants could be easily identified if indication is given what center they are from – Smales Farm, Massey e-canter or AUT Technology Park – their residence will be referred to as The Center.

3.4 Procedure

Gathering of primary data has been conducted through survey targeted at ICT businesses of North Shore and through semi-structured interviews of selected participants[26].

Survey method was chosen because of its ability to reach large audience in short period of time with relatively minor expenses.

Accordingly, the survey has been posted on 5th of September 2003 to 143 ICT companies located in North Shore. Each survey participant received a cover letter, survey questionnaire form and self-addressed envelope with paid return postage. Furthermore, each cover letter addressed a specific person, usually the owner or a major shareholder as they were identified from the Government's official online Companies Office database. Majority of respondents posted completed survey questionnaire within first two weeks. Precisely, 30 responses arrived in first two weeks, followed by 7 responses within next two weeks, and followed by 1 more response within another two weeks.

Most of the respondents have mailed back only questionnaire forms without cover letter or any other identification that may reveal their identity. Hence, by that very token most respondents are not identifiable. Six respondents have, however, sent cover letter along with the survey form and their identity will be concealed as described in Ethical Issues section.

Once received most responses have been coded using Likert scales and entered in SPSS statistical package as described further in Measures section.

[26] Both business participants and local and national authorities responsible for business clustering

Interviewing of chosen participants has started as soon as MUHEC approved the research method and rationale. Potential interviewees were contacted by both telephone and email correspondences. For examples[27] of email correspondences see Appendix E.

Majority of interview questions were defined before interviewing begun. Nevertheless, questions have undergone refinement during the interviews and have served as a basis for more precise questioning in future interview sessions. Precisely, Initial questions for business interview participants were focusing on interfirm and industry-university collaboration, networking and collocational benefits derived from business clustering i.e. constructs suggested by initially reviewed literature (McCracken, 1988). This approach was soon broadened to include the issues of place and why companies choose certain location. Reason for this shift was because results of interviews were suggesting that in majority of instances collaboration, networking and business clustering did not play a big role behind company's reason to locate in North Shore. Rather, indications were that some other factors were behind the agglomeration. Those findings also explain why this thesis includes place consideration in relation to business clustering and why the issue of place was also subsequently included in survey questionnaire.

Such kind of progressive and simultaneous improvement of data collection and development of theory is also in line with theoretical sampling method described by Glaser & Strauss (1967).

[27] A number of emails have followed exactly the same wording. Hence, only examples are shown.

> Theoretical sampling is the process of data collection for generating theory whereby the analyst jointly collects, codes and analyzes his data and decides what data to collect next and where to find them, in order to develop his theory as it emerges. (Glaser & Strauss, 1967: 45)

Furthermore, such an approach has added benefit of theory being directly derived from the data rather than constructing the framework first which might inadvertently encourage a researcher to look for the evidence that would support the theory.

> Generating a theory from data means that most hypotheses and concepts not only come from the data, but are systematically worked out in relation to the data during the course of the research. (Glaser & Strauss, 1967: 6)

In addition to the interviews there was no collection of companies' internal data in order to minimize intrusion effect. Moreover, interviews proved to be sufficient in obtaining a picture as to the extent of potential collaboration. Similarly, both networking and collaboration often involves relationships between companies. Hence, interviews often revealed if there are such relationships or whether companies were merely using each other services due to some urgent necessity.

3.5 Measures

The survey attempted to measure two main types of constructs i.e. degree of relationship or linkages between companies and force influencing agglomeration of companies in the North Shore City. In order to obtain as comprehensive understanding of relationships and linkages as possible survey measured several different aspects that may reveal existence or absence of such interfirm relationships.

Most of relationship measures were captured using seven-point Likert scale (Table 3). The reason behind using this scale was because of its ability to capture degrees of attitudes and agreeableness that may reveal existent or potential strength of relationships between collocated companies n North Shore City (Page & Meyer, 2000).

Table 3 Seven point Likert scale

Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
1	2	3	4	5	6	7

In addition to ability of this scale to measure degrees of agreeableness and attitudes it also provides ability for data to be easily coded into a statistical package and analyzed using ordinal statistics. Higher-level Likert scale was not used because as Dawes (2001) points out higher scale would produce the data that is essentially the same. The only thing that may increase would be overall spread.

Tow questions did not use seven-point scale because of the specificity of their nature, which is explained, in following sections.

3.5.1 Meeting Attendance

The first set of questions (see Appendix A) attempted to assess the degree of connectedness the business people had with their peers in local community and wider through attendance of business forums and meetings. One of the most recognizable characteristics of Silicon Valley business community is the connectedness among entrepreneurs and other specialists through local

business associations, clubs and a number of networks (Saxenian, 1994, 1999, 2002; Putnam, 1999).

Accordingly, the first set of questions measured how much business people meet with their peers in local community and wider. This group of questions has used seven point Likert scale. Furthermore, no reversed scores were used and higher score implies higher degree of meeting attendance and participation. The aim was not to derive a new variable through the combination of results but to capture subtleties of attendance of different meetings, which might potentially explain certain inclination rather than to obtain an overall score of how frequently business people meet their peers in the same industry.

3.5.2 Knowledge Sharing

The second set of questions attempted to assess a degree of knowledge sharing that is taking place among the business community or at least a readiness to share.

It could be argued that meeting attendance alone does not give the complete picture of the degree as to how much businesses cooperate or are connected because such meetings might not yet be well established on the North Shore. Accordingly, the second set of questions attempted to measure different aspects of knowledge sharing that might exist among the ICT business community.

Knowledge sharing questions also used seven point Likert scale in order to allow respondents to express varying degree of agreeableness and to capture nuances of engagement. Similarly, no reversed scores were used and higher the score

the higher ones agreeableness or receptiveness toward the idea of knowledge sharing. Moreover, as in the case of Meeting Attendance the aim was not to derive a new variable but to capture subtleties of readiness toward different areas of knowledge sharing.

3.5.3 Geographic Proximity

The third set of questions attempted to capture the degree of significance businesses associate with different aspects of being collocated with other similar businesses and related institutions.

While being ready to share knowledge might give some indication as to the overall attitude toward cooperation it could be argued that such a measure alone does not provide a complete picture as to the extent to which it is really relevant for businesses to be part of clustered community of peers.

Accordingly, this set of questions attempted to measure the strength of ties ICT businesses have with each other and with other related institutions in the local community.

Geographic Proximity questions also use seven point Likert scales. Likewise, the higher score implies higher importance respondents attribute to geographic proximity. Similarly, with regards to the importance of Industry-University cooperation question higher score implies higher agreeableness with its importance.

3.5.4 Potential Business Linkages

The forth question category sought to capture the degree of openness toward business linkages and associations.

As Porter (1990) argued, clusters might be found through identifying the value chain of companies doing services for each other. Nevertheless, for the comprehensive value chain to exist companies must be ready to call on the experts in needed field of expertise when required.

In order to measure the strength of potential linkages this question was formulated as a hypothetical case that measured whether companies would rather call on the experts or attempted to deal with a largely unfamiliar problem themselves.

The classification of responses was graded according to three point nominal scales. Nevertheless, the most important two responses were 1 (do-it-yourself) and 2 (call-the-experts) while the third category left the space for other responses that provided opportunity for respondents to be more expressive about their opinion.

3.5.5 Peer Recognition

The fifth question category attempted to measure how strongly entrepreneurs felt about the need to be recognized as experts among their peers locally and in the wider community. The rationale behind this question was that the more strongly respondents expressed the need to be recognized as experts among their peers the more they are connected to their peers.

Peer Recognition question uses five-point Likert scale (1 = not important, 2 = not particularly important, 3 = don't know/no opinion, 4 = somewhat important, 5 = very important) that classifies responses according to general attitude and feeling of importance of being recognized as experts.

3.5.6 Location decisions

The last question attempted to capture the reasons of why entrepreneurs locate their businesses in North Shore City. Possible responses were divided into eight main categories plus one category for other options not covered by provided answer options. Respondents were asked to choose up to three main reasons that were behind the decision for locating their businesses on the North Shore. The rationale behind giving multi-choice option was the assumption that most people would choose any given location for several reasons and not only one. Moreover, several possible answers gave respondents chance to be more expansive.

Each category was subsequently coded as nominal variable and only nominal statistics were later used in assessing the responses. However, due to the assumption that nominal responses are mutually exclusive to that end it might be considered a violation that respondents were given the chance to chose up to three possible options (Page & Meyer, 2001).

Nevertheless, assignment of numerical values to different options was clearly for labeling purposes only and as such responses do not assume any arithmetical

values. Considering those facts it was decided that only nominal statistics could be applied as a vehicle of summarizing obtained responses.

3.6 Data Analysis

This research uses dual data collection methods that complement each other findings, i.e. it uses triangulation of survey and interview results. Such cross-validation was chosen because of its ability to provide convergent evidence, which strengthen the presented arguments (Page & Meyer, 2001).

3.6.1 Survey

While survey provides flexibility and ease of reaching large number of respondents it also gives an opportunity to assess what opinions are held by wider populations through responses of limited sample size.

> A survey enables a researcher to study a population in order to infer characteristics of a population (generalized finings). Surveys are not only the best way to collect a large amount of data from many respondents – if they are conducted properly – but they are also the route to one of the most rigorous forms of non-experimental research. (Page & Meyer, 2001: 114).

Accordingly, this research also involved mailing of survey questionnaire to selected population sample and subsequent assessment of what opinions are held by larger population of ICT businesses and entrepreneurs.

Survey forms were returned to the researcher's temporary Private Bag address. Upon receipt responses were processed, coded and entered into SPSS. Once all data had been entered into SPSS and verified for accuracy all returned survey

forms were destroyed by the means of shredding machine as promised to survey participants in the covering letter. (see Appendix A)

Because of the specific nature[28] of this survey all of the survey responses have been coded as either ordinal or nominal variables.

As Page & Meyer (2001) point out "ordinal scales provide some order to the intensity/values/levels of the variable being measure" (Page & Meyer, 2001: 73).

Page & Meyer (2001) further state that Likert scale is clearly an ordinal scale. However, they point out that a caution has to be applied when arithmetical analysis is employed in order not to violate assumptions behind ordinal variables. Hence in relation to respondents' attitudes or levels of agreeableness according to ordinal scale Page and Meyer write:

> Each person will have his or her own interpretation of the difference between these levels ... It therefore makes more sense to call these levels 'categories' and to provide them with some order that is meaningful to the population who is to receive the survey. Strictly speaking, arithmetic operations should not be conducted on ordinal scales. (Page & Meyer, 2001: 73)

They also point out what kind of arithmetic operation may be considered as allowable when applied to ordinal scales.

> ... it is generally accepted that it is reasonable to use arithmetically derived averages to describe and manipulate the data. As long as using these averages is not an extreme violation of mathematical rules and assumptions – otherwise the information will be meaningless -we may proceed with caution. (Page & Meyer, 2001: 73)

Similarly, for nominal variables Page & Meyer (2001) write that assigning of numbers is meaningful only in context of differentiating different categories and that those numbers are arbitrary and have no arithmetical meaning.

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[28] This survey primarily sought to assess respondents attitudes and degree of agreeableness

Accordingly, only statistics that are appropriate for nominal and ordinal data have been performed. Ordinal data have been examined using statistics such as median, mode, interquartile range, percentile, skewness and Spearman's rho correlation while nominal data have been examined using frequency, percentages and mode (Macky, 2002a, 2002b).

3.6.2 Interviews

Page & Meyer (2001) state that qualitative approach is used when "quality of human experience is of as much concern as, or of more concern than quantifying how many are experiencing an event, or to what extent numerically" (Page & Meyer, 2001: 18)

Accordingly, they define the meaning of qualitative approach when they write:

> ... the qualitative approach can be conceptualized as a focus on words and feelings – the quality of an event or experience. As a general rule of thumb, the more people oriented the research, the more qualitative the approach. (Page & Meyer, 2001: 18)

Appropriately, this research also involved interviewing as a major component and vehicle of obtaining responses from the sample pool of respondents.

Each interview has been approached with least possible preconceptions about what responses might be given or bias on the part of interviewer that could affect interviewee's subconscious inclination toward a particular answer. The objective of interviews was to capture respondents' own experiences as well as to ascertain interpretative weightings they associate with different level of phenomena being researched. Accordingly, as Hunter (2002) points out

interviewees are no longer participants but co-researchers in the project. The reason behind this method was to understand not only what events were taking place but also to ascertain how these events influence the way in which different interviewees see phenomenon of business clustering and how does that affect their decision-making in terms of cooperation (in case of business interviewees) or policy planning (in the case of local authorities).

Furthermore, all interviews were semi-structured allowing a free expression by participants without giving any impression as to how or what answers should be given (McCracken, 1988).

For example, at the beginning of each interview with business participants interviewees were asked about their experiences in terms of cooperation with collocated companies and local universities. Supplemental questions were of "why", "how" and "can you elaborate" probing format. Reason behind such structure was to minimize input from the researcher while maximizing responses from an interviewee.

No tape recording has been used during the interviewing and summary of each interview has been transcribed shortly after the interviews have been completed.

Chapter IV

Results

4.1 Findings

The results of this research are presented in two major sections. First section brings the results of different aspects of survey through statistical analyses introduced in Methodology chapter. Second section presents findings derived from interviews with business and regional development authorities.

4.2 Survey – Meeting Attendance

First set of questions attempted to measure the level of entrepreneurs' engagement in local business community, i.e. how much are they connected to each other through attendance at business related meetings and forums. Table 4 shows that majority of respondents, that is, those whose answers fell between 25th and 75th percentiles[29] had no strong habits of attending local business meetings or forums (M[30] = 3).

This is also confirmed by slightly positive skewness[31] (Sk = 0.323), which indicated that the bulk of responses favored negatively worded attitudes as they are represented in Figure 4.1.

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[29] Percentile are measured as 25 percent of data falling on either side of median

[30] Median

[31] In the perfectly symmetrical distribution the value of skewness is equal zero and in general its value ought to fall between –3 and 3 (Freund & Simon, 1997). Hence, skewness indicates leaning of bulk of data with its median toward either end of the data distribution and corresponding skewness or thinning of the curve in opposite direction.

Table 4 Meeting Attendance Statistics

		I often attend business gatherings/ forums in my local community	I often attend business gatherings /forums in the wider Auckland area	I often attend national business gatherings /forums	I would describe business forums as very usefull	I actively participate in business forum discussions	I regularly meet with other business people in an informal, non-work related setting (e.g. golf club, rotary club, cosmopolitan club, etc.)
N	Valid	38	38	38	38	38	38
	Missing	0	0	0	0	0	0
Median		3.00	3.00	2.00	4.00	3.00	5.00
Mode		2	2[a]	2	4	2	6
Skewness		.323	.294	.641	-.183	.385	-.829
Std. Error of Skewness		.383	.383	.383	.383	.383	.383
Range		6	6	5	6	5	6
Percentiles	25	2.00	2.00	2.00	3.00	2.00	3.75
	50	3.00	3.00	2.00	4.00	3.00	5.00
	75	5.00	5.25	4.00	6.00	5.00	6.00

a. Multiple modes exist. The smallest value is shown

In fact, the attendance of business meetings/forums was not better even when significance of these gatherings increases i.e. Auckland (M = 3, Sk = 0.293) or national level meetings (M = 2, Sk = 0.641). Similarly, participation in meeting discussions follows the same pattern (M = 3, Sk = 0.385), which might be attributed to the fact that majority of respondents, have rather weak habits of attending. Hence, there are no strong needs to participate as indicated by a strong correlations between attendance of local meetings and participation (r = 0.808), attendance of Auckland wide meetings and participation (r = 0.853) and attendance of national meetings and participation (r = 0.711). The perception of meeting usefulness has received somewhat greater score (M = 4). While this results is mainly driven by favorable rating of subgroup that does attend the meetings several of non-attendees has expressed that they neither agreed nor disagreed with attributing any value derived from such meetings i.e. not having a

strong opinion and rating it as 4. Hence, in process seemingly busting the overall rating of this category.

Contrary to relative weakness of business meeting/forum attendance a greater number of participants indicated they do meet with business people in non-business related setting (M = 5). This apparent preference of non-business or social setting is also confirmed by the high degree of skewness (Sk = -0.829), which was also the largest value in this group of questions suggesting that most respondents have a clear preference toward meeting activities that are placed in lifestyle and social context.

Table 5 also shows that there is some, although not strong, correlation between attendance of the three types of business meetings/forums and attendance of non-work related meetings/gatherings (r = 0.316, r = 0.315 and r = 0.114 respectively). Nevertheless, such correlation suggests only that some business people who attend non-work related meetings also attend local business meetings. Perhaps more interesting is the absence of any strong correlation that would indicate that business people also use social setting for promotion of their business relationships.

Table 5a Correlation Statistics

			I often attend business gatherings/forums in my local community	I often attend business gatherings/forums in the wider Auckland area	I often attend national business gatherings/forums	I would describe business forums as very usefull	I actively participate in business forum discussions	I regularly meet with other business people in an informal, non-work related setting (e.g. golf club, rotary club, cosmopolitan club, etc.)
Spearman's rho	I often attend business gatherings/forums in my local community	Correlation Coefficient	1.000	.814**	.771**	.590**	.806**	.316
		Sig. (2-tailed)	.	.000	.000	.000	.000	.054
	I often attend business gatherings/forums in the wider Auckland area	Correlation Coefficient	.814**	1.000	.703**	.564**	.853**	.315
		Sig. (2-tailed)	.000	.	.000	.000	.000	.054
	I often attend national business	Correlation Coefficient	.771**	.703**	1.000	.523**	.711**	.114
		Sig. (2-tailed)	.000	.000	.	.001	.000	.497
	I would describe business forums as	Correlation Coefficient	.590**	.564**	.523**	1.000	.711**	.386*
		Sig. (2-tailed)	.000	.000	.001	.	.000	.017
	I actively participate in business forum	Correlation Coefficient	.806**	.853**	.711**	.711**	1.000	.294
		Sig. (2-tailed)	.000	.000	.000	.000	.	.073
	I regularly meet with other business people	Correlation Coefficient	.316	.315	.114	.386*	.294	1.000
		Sig. (2-tailed)	.054	.054	.497	.017	.073	.

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

Table 5b Correlation Statistics

			I would readily share "know-how" or thechnical knowledge with businesses in local community who are not my direct competitors but are in related field of operation	I would share business knowledge with other businesses in my local community	I would share knowledge about potential markets with businesses in local community who are not my direct competitors but are in a related field of operation	People in our company consult with other companies in neighborhood when certain technical issues arise	It is important for our company to know what potential business partners are located nearby
Spearman's rho	I would readily share "know-how" or thechnical knowledge with businesses in local community who are not my direct competitors but are in related field of operation	Correlation Coefficient	1.000	.901**	.809**	.606**	.071
		Sig. (2-tailed)	.	.000	.000	.000	.673
	I would share business knowledge with other businesses in my local community	Correlation Coefficient	.901**	1.000	.757**	.489**	.092
		Sig. (2-tailed)	.000	.	.000	.002	.585
	I would share knowledge about potential markets	Correlation Coefficient	.809**	.757**	1.000	.522**	-.030
		Sig. (2-tailed)	.000	.000	.	.001	.859
	People in our company consult with other	Correlation Coefficient	.606**	.489**	.522**	1.000	-.032
		Sig. (2-tailed)	.000	.002	.001	.	.849
	It is important for our company to know what	Correlation Coefficient	.071	.092	-.030	-.032	1.000
		Sig. (2-tailed)	.673	.585	.859	.849	.

**. Correlation is significant at the .01 level (2-tailed).

For the complete table of correlations see Appendix C.

4.3 Survey – Knowledge Sharing

Table 6 shows a degree of readiness to share knowledge with other businesses in community. Similar results were obtained in all three categories i.e. sharing of technical knowledge (M = 5, Sk = -0.953), sharing of business knowledge (M = 5, Sk = -0.751) and sharing of knowledge about potential markets (M = 6, Sk = -1.551).

In fact, as the Table 6 shows majority of responses, that is ones between 25th and 75th percentiles, were located between 4 (neither agree nor disagree) and 6 (agree), suggesting that generally speaking IT business community in North Shore is open toward the idea of cooperation. Nevertheless, a point has to be made that questions of sharing knowledge were worded with respect to respondent' readiness to share knowledge with other businesses *who were not perceived as direct competitors.*

Table 6 Knowledge Sharing Statistics

		I would readily share "know-how" or thechnical knowledge with businesses in local community who are not my direct competitors but are in related field of operation (e.g. you are both software companies but offer different services)	I would share business knowledge with other businesses in my local community (e.g. sharing information on best business practices)	I would share knowledge about potential markets with businesses in local community who are not my direct competitors but are in a related field of operation	I would consider every business in related field as potential competitor	I would consider every business in related field as potential partner	People in our company consult with other companies in neighborhood when certain technical issues arise (e.g. simple technical tip for no charge)
N	Valid	38	38	38	38	38	38
	Missing	0	0	0	0	0	0
Median		5.00	5.00	6.00	4.00	4.00	4.50
Mode		6	6	6	4	4	5
Skewness		-.953	-.751	-1.551	.346	-.509	-.248
Std. Error of Skewness		.383	.383	.383	.383	.383	.383
Range		6	6	6	6	6	6
Percentiles	25	4.00	4.00	4.75	2.00	4.00	3.00
	50	5.00	5.00	6.00	4.00	4.00	4.50
	75	6.00	6.00	6.00	5.00	5.25	5.25

On the question of whether they would consider every business as potential competitor, survey participants gave a wide range of responses, as indicated by the spread between 25th and 75th percentiles, i.e. between 2 (disagree) and 5 (somewhat agree). Nevertheless, as skewness coefficient (Sk = 0.346) and corresponding median (M = 4) indicate respondents generally didn't feel the greater pressure of competition in local community.

The opposite question of whether they are considering every business as a potential partner generated a highly concentric response with median (M = 4) indicating an unenthusiastic attitude. In fact, 25th and 75th percentiles lay between 4 and 5.25 suggests that the idea of seeking partners is not deeply rooted. This conclusion is also supported by somewhat negative skewness (SK = -0.509) in this data.

Results also show that a number of respondents did consult with other businesses in neighborhood when faced with certain issues. Nevertheless, this was not a highly prominent activity as indicated by median (M = 4.50) and range between 25th and 75th percentile spanning from 3 (somewhat disagree) to 5.25 (somewhat agree). Interestingly though, Table 5b shows that there is a correlation between those that would share technical knowledge and those who have asked for "free tip" assistance (r = 0.606). Considering this correlation it could be speculated that personality traits and/or personal relationships open to collaboration drives actual knowledge sharing.

4.4 Survey – Geographic Proximity

Although results show that there was a certain degree of openness toward cooperation and relative engagement in terms of seeking advice from neighboring companies, the findings indicate that companies do not consider it particularly important to be located close to other similar or related businesses.

Table 7 Geographic Proximity Statistics

		It is important for our company to be geographically close to other companies in our field of expertise	It is important for our company to know what potential business partners are located nearby	We have a pretty good idea about what other businesses, in our wider neighborhood, could offer us in terms of technical or business expertise	We often compare our services to those of other companies on the Shore that are in related field	We would like to explore possibility of having closer ties with local universities (e.g. Massey University)	We have a pretty good idea of how Massey University presence on North Shore could help our business
N	Valid	38	38	37	38	38	38
	Missing	0	0	1	0	0	0
Median		2.00	4.00	4.00	2.50	5.00	3.00
Mode		2	2[a]	5	2	5	2
Skewness		1.235	.305	.025	.490	-.653	.646
Std. Error of Skewness		.383	.383	.388	.383	.383	.383
Range		6	6	5	5	6	6
Percentiles	25	2.00	2.00	3.00	2.00	4.00	2.00
	50	2.00	4.00	4.00	2.50	5.00	3.00
	75	4.00	5.00	5.00	5.00	6.00	4.00

a. Multiple modes exist. The smallest value is shown

The table above shows that the importance of being geographically close to other similar businesses has been rated as very low (M = 2). Similarly, the 25th and 75th percentiles located at 2 and 4 respectively show a tendency to consider this aspect as not important. Moreover, large positive skewness (Sk = 1.235) indicates that most respondents did not consider geographic proximity to be of any particular importance.

Some survey participant did feel that it was important to them to know what potential business partners were located nearby as indicated by the results obtained for second statement in Table 7. Nevertheless, this was not a

unanimous attitude as shown by the spread (25^{th} percentile = 2, M = 4, 75^{th} percentile = 5). The value of correlation between importance of geographic proximity and importance of knowing what potential partners are located nearby (r = 0.552) suggest that this interest is perhaps only characteristic of a few isolated companies.

Overall however, geographic proximity is not perceived as particularly important nor do the North Shore companies derive much benefit from being collocated. Two particular aspects that would be characteristic of a well-established clustering environment are familiarity with what other businesses are doing and the practice of comparing one's services to that of other companies. Yet, neither of these aspects has received a very high rating as is shown in Table 7. Results show that most respondents have at best a vague idea (M = 4) of what potential services are available to them from neighboring and related companies. This lack of familiarity is also confirmed by the values of percentiles (25^{th} = 3, 75^{th} = 5), which indicates that knowing what neighboring companies are up to is not high on the list of priorities.

Cluster theory would suggest that geographically collocated companies in the same industry would generally feel the pressure of competition that would compel them to be very much interested in what neighbors are doing. Such mentality is apparently largely absent among the North Shore ICT companies. Moreover, as the results from the statement of comparing services to that of other companies suggest most respondents do not compare their services with other related companies (M = 2.5), which suggests that most companies do not

feel large pressure of competition that would compel them to innovate as suggested by the Porter's cluster theory (1998a).

Lack of interfirm connectedness is not only confined to the marginal appreciation of factors brought about by geographic closeness. The survey presented a hypothetical case that attempted to measure whether companies would rather attempt tackling a largely unfamiliar problem themselves or whether they would call on the experts. While a large percentage (42.1%) stated that they would rather call on an expert, a surprisingly large percentage indicated that they would rather try doing it themselves (39.5 %). Moreover, even though participants were also given a third ('Other') option that they were to describe, most of the responses included a variant of do-it-yourself, as it is visible from the Table 8.

Table 8 Potential Connectedness Statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	do-it-yourself	15	39.5	39.5	39.5
	leave-it-to-experts	16	42.1	42.1	81.6
	other	7	18.4	18.4	100.0
	Total	38	100.0	100.0	

Table 9 Responses for "Other" option

[1] Internal staff to work alongside experts to attain understanding. We balance cost against having a professional job alongside future use of knowledge attained.
[2] Depends on the nature of the problem and the likely cost of using other company and availability of specific help
[3] Neither option 1 or 2 is "Real-World". A Preferable half-way solution is having the internal person trained-up or brought to speed so as to be able to oversee work by a contractor
[4] Would depend on our own work load: if we have bored people - let them try; if we're all busy get help.
[5] Query the email grouping of similar companies for help/advice
[6] Contact national or international experts (Vendors/Partners)

4.5 Survey – Peer Recognition

The survey also attempted to measure how strongly businesses felt about the importance of being recognized among their peers as experts. The purpose of this question was to determine existence of this kind of relationship among the ICT community. Florida (2002) suggested that creative class, of which IT specialists are big component, are characterized by strong need for peer recognition. Both Raymond (1999) and Von Krogh (2003) describe such strong peer recognition or meritocracy based relationships as an integral part of tight knit open source community. Moreover, Porter (1998b) highlighted importance of peer pressure as a motivating force behind community's competitive spirit.

> Local rivalry is highly motivating. Peer pressure amplifies competitive pressure within a cluster, even among noncompeting or indirectly competing companies. Pride and the desire to look good in the local community spur executives to attempt to outdo one another (Porter, 1998b: 83)

Accordingly, the assumption behind this question is that the more strongly respondents felt about the need to be recognized as experts by their peers the more tightly they were connected to those peers.

The survey showed that for 28.9 % of respondents being recognized as experts was very important. However, most respondents rated it as only somewhat important (39.8 %). The remaining survey participants either did not have any particular opinion or considered it as not particularly important (31.6 %).

In fact, if responses were divided into only two categories i.e. ones that rated peer recognition as very important on one side and the reminder of the responses on the other side, picture that emerges is one of largely unenthusiastic

opinion about the importance of peer recognition. Such findings further suggest that links among North Shore ICT community are not particularly strong.

Table 10 Peer Recognition Statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not particularly important	8	21.1	21.1	21.1
	Don't know/ don't care /no opinion	4	10.5	10.5	31.6
	Somewhat important	15	39.5	39.5	71.1
	Very important	11	28.9	28.9	100.0
	Total	38	100.0	100.0	

4.6 Survey – Relationships with Universities

The importance of university – industry relations has been recognized in the case of many successful regions around the world and particularly in the case of Silicon Valley and nearby Stanford University. (Saxenian, 1994) Accordingly, it was appropriate to assess the strength of receptiveness of such idea among North Shore ICT business community.

As the results from the survey (Table 7) suggest that there is indeed a substantial degree of interest into the possibility of exploring of such relationships with local universities (M = 5, Sk = -0.653). Very few respondents expressed any objection toward furthering of such ties (25^{th} perc[32]. = 4, 75^{th} perc.= 6). Furthermore, the desirability of exploring such a relationship has also been reiterated by a number of interview participants, discussed later, suggesting a strong overall receptiveness of the idea. However, most respondents did not see any significant connection between their business needs and what Massey University has to offer (M = 3, Sk = 0.646).

[32] Percentile

4.7 Survey – Location Decisions

Both literature review and interview results suggested the importance of location in relation to agglomeration of businesses (Marshall, 1907; Weber, 1909; Myrdal, 1957; Kotler et al, 1993; Putnam, 1993; Hall, 1998). McKendrick, et al, (2000) likewise place particular emphasis on needs of businesses as the main driver behind agglomeration rather than externalities of business clustering. Accordingly, this survey also maps what stays behind location decision making of North Shore ICT businesses, i.e. why do businesses locate on the North Shore.

The survey provided eight options to choose from plus an optional "Other" category. Participants were asked to choose up to three main categories. Nevertheless, most survey participants chose only one category, although several chose two categories while very few have selected three categories. The table below details these results.

Table 11 Location Decisions Statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	To be close to our customers	4	6.7	6.7	6.7
	To be close to other simialr busineses	2	3.3	3.3	10.0
	To be close to local university	1	1.7	1.7	11.7
	To be close to the pool of potential workers and expertise	4	6.7	6.7	18.3
	Because founders/owners live(d) here	28	46.7	46.7	65.0
	Because of overall quality of life	16	26.7	26.7	91.7
	Other	5	8.3	8.3	100.0
	Total	60	100.0	100.0	

As the Table 11 shows most of the businesses were located in North Shore primarily because the owners already lived here (46.7 %). In fact most people who chose two or three categories also chose this particular category suggesting that this was one of the fundamental reasons for ICT businesses to locate on the North Shore. The second most important category was the overall quality of life (26.7 %). While survey did not seek to answer the question of why people who run ICT businesses choose to live on the North Shore this simple statistics suggests that there might be a connection between the two.

Other categories recorded a substantially lower level of importance as shown in Table 11. Several, respondents who selected the "Other" category indicated the importance of issues such as "good parking", "availability of office space" and "telecommunication infrastructure".

Only 6.7 % of survey respondents indicated that they have chosen North Shore because of greater accessibility to a pool of potential workers. Such a low response might be attributed to the fact that most of North Shore ICT companies are small or medium businesses, and hence do not have a strong desire to increase their work force. This conclusion can also be drawn from responses gained in interviews where bigger companies emphasized importance of availability of such a pool while smaller businesses commented on being content with slower pace of employment.

Similarly, only 6.7 % of survey respondents indicated that they have chosen North Shore because of being closer to their customers. Given that most of the surveyed companies were software developers and IT service providers it can be

deduced that the majority of their services can be transferred electronically. Moreover, even if some of their products were to be encoded on lightweight CD/DVD this would not pose a greater problem in terms of shipment. Another equally plausible explanation is that many of these companies supply their services predominantly to oversees buyers. Hence, location of their business operation is driven by other factors like infrastructure, expertise, place amenities, etc, rather than by geographic proximity to customers who are likely to change from project to project.

Geographic proximity to other businesses (3.3 %) and proximity to a local university (1.7 %) were apparently the least important reason for companies to locate their operations in North Shore. These findings strongly reaffirm results obtained from earlier questions that suggested the existence of very weak or completely absent ties among local companies or between companies and universities. Such results question whether businesses derive any synergy from geographic proximity to their peer companies. More importantly, results also call into the question the adequacy of a regional development model solely based on business clustering.

4.2 Interviews

Interviews have been conducted with some of the residents of North Shore technology parks/incubators as well as with regional and national authorities of regional development. All participants are only referred to by their code names as described in methodology chapter.

As the survey section, interviews have focused on mapping collaboration or linkages dynamics and forces influencing the choice of the North Shore as a business location.

4.2.1 Connectedness and collaboration

The importance of business networks, relationships and collaboration have been reiterated throughout the academic literature (Marshall, 1907; Putnam, 1993; Saxenian, 1994; Koepp, 2002).

Interestingly, all of the interview participants identified importance of collaboration between businesses. The idea of collaboration was highlighted as particularly important in relation to building of networks, business clusters, and technology parks. Nevertheless, interviewees also raised a number of concerns that can be characterize as stumbling blocks to furthering such business models in North Shore City.

Interviewee A1 noted that most businesses are too preoccupied with perusing the 'bottom line' to be able to engage in the idea of 'potential' benefit derived from belonging to a cluster or a network. The same interviewee further described some examples of attempts to bring local businesses together into

clusters, which were characterized as still heavily dependent of local EDA[33] where businesses were usually waiting for EDA to organize local contacts[34] for them rather than organize such contacts themselves. A1 pointed out that businesses were generally somewhat interested into the idea of clustering but were very cautious and unwilling to invest much effort into organizing themselves. Instead they preferred EDA to organize local contacts and establish contact with the local university for them. Interviewee A1 states that particular weakness of new clusters has been that their members have not yet experienced large-scale benefits from belonging. Hence, the prevalent atmosphere is one of caution and distrust toward other members' intentions.

Interviewee A2 stated that overall climate of secrecy and culture not prone to collaboration was to blame for difficulties associated with implementing business clustering among North Shore businesses. Furthermore, A2 highlighted that this secretive climate is being amplified by fear of piracy of intellectual property that was proving to be the primary stumbling block for any deeper collaboration between businesses.

Interviewee A1 saw the roots of such a culture in New Zealand's early pioneering history. This interviewee pointed out that most early settlers and farmers had to be self-reliant in order to be able to sustain themselves and their families since any potential help was often many miles away. Accordingly, this created largely self-reliant culture with a do-it-yourself mindset. Such a mentality was identified by the interviewee as a clear inhibitor to furthering any cooperation or

[33] Economic Development Agency
[34] Contacts with other companies and local universities

networking. Accordingly, interviewee A1 also noted, most North Shore businesses could be seen as cooperating only at the time of two extremes, i.e. at the time of a perceived crisis or at a time of exceptional and proven growth.

Interviewees A3 and A4 gave similar descriptions while going a step further in identifying the absence of not only collaboration but an entrepreneurial culture itself. A3 identified a lack of business appreciation in local community, which translates into companies largely keeping a low profile, i.e. not expanding and not taking chances, which also might explain why more advanced concepts such as business clustering do not take a hold. Interviewee A4 stated that the roots of such attitudes could also be found in failures of local secondary schools to teach the values of business and entrepreneurship. Interviewee A3 added that most local teachers are seemingly only interested in academic achievements that have as a consequence young people looking for employment rather than trying to establish a business themselves. Such mentality of local schools was identified by both A3 and A4 as only proliferating the absence of entrepreneurial culture, which they've agreed, had deeper roots in New Zealand pioneering ancestry. Interestingly, those observations are consistent with a recent Trade and Enterprise New Zealand survey that points toward a significant absence of business appreciation and an entrepreneurial culture in New Zealand.

> When New Zealanders do take an interest in business, they frequently do so with a negative attitude ... many appeared to believe that business could be better if it was more socially-oriented ... A substantial proportion of New Zealanders appeared to have little idea as to what would bring about economic success (Industry NZ, 2002: 7)

Interviewees A5 and A6 were less critical and pointed out that they could observe readiness of businesses and people in general to collaborate at least in certain instances. Nevertheless, these are instances such as collective action to prevent unfavorable premises expansion of a particular business (an example given by A5), which could be characterized as collaboration in the time of crises as highlighted by interviewee A1. A6, on the other hand pointed out that business clustering does not have to be the ultimate panacea for regional development and that in time businesses will organize themselves by accepting ideas and models that are acceptable to them and reject the others. Accordingly, A6 states, models such as clusters might be accepted or rejected and that essentially forces comparable to natural selection will ultimately determine success or failure of any model.

Responses from A group provide valuable insights as to how they perceive and understand local business dynamics particularly because such understanding might provide insight as to the possible emphasis of future regional development policies. Nevertheless, it is valuable to understand opinions of entrepreneurs themselves and to probe for details not visible in A group's view. Particularly, useful opinions are from entrepreneurs and businesses that have participated in some kind of cluster or network building which might provide insight into possible hurdles to the implementation of these models.

Interviewee B1 stated that collaboration and business networking are crucially important for their business. These networks, B1 stated, expand contacts and enhance visibility of their business. However, when asked about collaboration

with collocated companies at The Center B1 characterized collaboration as non-existent except for one company with whom they "get along with well", emphasizing social relationships. The only reason they were located at the premises of The Center, B1 states, was because of their close collaboration with the local university.

Interviewee B2 stated that the only reason for locating at The Center was availability of office space. When asked if it makes any difference for their company to have office space at the center B2 responded that it did not. However, B2 stated that there were some albeit weak relationships with collocated companies in terms of advice or consultancy. Similarly, B2 stated that relationships with the local university were not very strong. In fact these linkages were stronger for this company with some other universities elsewhere in New Zealand. Nonetheless, B2 praised the vibrancy and entrepreneurial atmosphere that was clearly a result of many young people at The Center eagerly pursuing their businesses. Such vibrancy B2 states give the place a special 'feel' even though collaboration with local companies was negligible.

B3 stated that availability of premises was the main reason for choosing to locate at The Center and that apart from that fact it made no difference for them that they were a part of this business community. However, B3 was keen to explore having even closer ties with local university for the purpose of both upskilling their staff and benefiting from University based research. Similarly, B3 also stated that they would be open to the idea of having closer ties with businesses in local community.

B4 stated that the main reason for being located at The Center was availability of office and parking space as well as the flexibility and convenience The Center offers. B6 stated that if their company were to find similar advantages in CBD Auckland it would have represented a 'logistical nightmare'. The Center, B4 states, provides convenience of being close to the city and main road while giving them plentiful office space and a corporate image. B4 also stated that their company had close ties with one of the other collocated companies at The Center as well as that they would be ready to help any new resident company to, for example, add their order for office supplies to B6 order and thereby benefit from discounts available only to large companies. In the same vein, B4's stated that they are very keen to explore any possibility of having closer ties with local universities.

B5 on the other hand stated that their company does not have any particular relationships with any of the collocated companies and that in fact there is a sense of secrecy that permeate any correspondence with local companies. As did B6, B5 identified availability of office space and in particular the corporate image such premises convey as the primary reason for moving into the center.

B1 further made a comment about the seemingly standard practice of signing a confidentiality agreement as a sign of lack of trust between businesses but has added that in their experience once such agreements were in place there was increased tendency toward more open collaboration and knowledge sharing between businesses. Similar comments were made by B2 who suggested that

confidentiality agreement are the way of establishing closer ties between the businesses in local business community and wider.

4.2.2 North Shore as a Location for Business

B7 commented that the main reason for locating their business on the North Shore was because of overall standard of living and access to the potential pool of skilled labour. B1 didn't see any particular advantage of North Shore as a place and in fact criticized the region for its poor roading network. The only reason their business was located on the North Shore according to B1 was because of their close ties with local university as well as availability of office space.

B2 stated that there is a particular vibrancy that characterizes North Shore City and Auckland in general. This vibrancy, B2 stated, is probably less pronounced in other parts of New Zealand. B4 and B5 characterized North Shore as a place that offers great logistical advantages such as closeness to Auckland city center and availability of land at much cheaper rate than in CBD Auckland. B3 on the other hand stated that they chose Auckland and North Shore because of the size of its population and cultural diversity.

Chapter V

Discussion

5.1 Introduction

Porter's cluster theory (1990, 1998) has proven to be very influential with a number of governments and regions rushing to implement it. Nevertheless, the questions of its universal applicability as well as doubts of its academic rigor have been just as vocal (Davies and Ellis, 2000; McKendrick, et al, 2000; Martin and Sunley, 2002).

The applicability of this model is particularly important for regions counting on the idea or recreating their own version of Silicon Valley, i.e. a high-tech, innovation driven milieu.

Accordingly, this thesis investigated the extent of cluster-mindedness of local ICT business community, i.e. it's overall attitudes toward collaboration and networking. Moreover, the thesis went a step further in pinpointing the forces behind the agglomeration of local ICT businesses in North Shoe and comparing it with Porter's (1990, 1998a, 1998b) ideas of what causes agglomeration of specialized companies in a region.

5.2 Collaboration in Business Community

Combined finding of survey and interviews suggest the existence of capacity among North Shore ICT businesses to collaborate. Survey shows that most respondents were open toward the idea of knowledge sharing, which was obvious by both highly skewed responses and median values, e.g. question of

whether respondents would share technical "know-how" received a median of 5 and skewness of –0.953. Similarly, some interviewees also indicated that they would be open toward the exploring ideas of more concrete collaborative ties with businesses in a local community.

However, at the same time results are pointing toward inhibitive factors that prevent collaboration from developing or take deeper roots. Most important of those factors, interview results suggest, is the culture of holding back i.e. not engaging in collaboration due to fears such as piracy of intellectual property as well as fears of unknowns such as the lack of overall experience of proven financial benefits derived from collaboration. Some survey participants also felt compelled to describe these inhibitive factors through additional letters, which were posted along with returned survey questionnaire. (see Appendix B)

Hence, collaborative capacity remains largely untapped resource or mere *potential* as described by Porter (1998a).

Similarly, preoccupation with pursuing 'bottom-line' only through companies' own effort is seemingly deeply rooted in cultural background that encourages self-sufficiency, DIY and keeping of low entrepreneurial profile, which only perpetuates absence of collaboration. As most of the interviewees from regional development authorities suggested such cultural mindset is deeply imprinted in local business community and more importantly it dictates the extent of collaborative business engagements. The end effect is one of collocated businesses that largely do not benefit from each other's expertise and do not form any comprehensive value chain. Such culture of holding back may also

explain why majority of survey respondents reported of having only vague idea about what other businesses in neighborhood are doing or are able to offer, which in itself suggests very weak linkages among this sector of business community.

For example, in response to the statement of being well informed about what other businesses in neighborhood are able to offer most respondents rated their knowledge between 3 (somewhat disagree) and 5 (somewhat agree) with median of 4 (nor agree nor disagree).

Overall weakness of linkages is also visible in businesses having no sense of belonging to a community of similar collocated companies. In response to the statement of how important it is for them to be geographically close to other similar companies overwhelming majority of survey respondents stated that this was unimportant as it seen by the median result of 2. Absence of binding ties in North Shore ICT business community is also visible in majority of survey respondents having no strong opinion that it is important for them to be recognized as experts by their peers in local community. While this result may be due to the fact that respondents either do not have any particular opinion of other peers' services or have a low opinion of these peers' services, hence no need to be recognized by such peers as experts, this at the same time testified about very weak linkages among those peer businesses. That these ties are weak is also visible in great percentage of survey respondents reporting that they would rather attempt solving largely unfamiliar problem themselves than call on

the experts from neighboring companies, which also confirms results of interviews that suggested the existence of such attitudes.

Accordingly, it could be postulated that low attendance of business meetings and forums, as seen in survey results, also has its roots in this culture of holding back and non-engaging in collective action for business purposes, which only perpetuates secretive and non-collaborative attitudes that were reported by some interview participants.

There are, however, sporadic instances of collaboration that are, as results of interviews with business participants suggest, largely driven by limited social contacts that provided favorable ground for some sort of collaborative engagements. Nevertheless, there are no indications that such engagements are widespread particularly because, as survey results suggest, businesses have only limited interest in knowing what potential business partners are located nearby, i.e. on the statement of importance what potential partners are located nearby most survey result ranged between 2 (disagree) and 5 (somewhat agree) with median of 4 (neither agree nor disagree).

Clearly, results are pointing toward overall lack of "social glue" (Porter, 1998a: 225), "social capital" (Putnam, 2001: 324) and "social networks" (Saxenian, 1994: 2) or in other words manifestations of collaborative culture that would compel companies to engage into value chain business arrangements. Without such culture North Shore businesses are not forming strong linkages or in the case of artificially created clusters are seen as waiting for responsible authorities or regional bodies to establish such linkages and contacts for them.

However, desire to collaborate with local universities has received almost unanimous support. This is visible both through overall survey results and conducted interviews, suggesting that there is a favorable ground for taking root of this sort of collaborative engagement. For example, most of survey respondent rated desirability of such engagement between 4(nether agree nor disagree) and 6 (agree) with median of 5 (somewhat agree). Similarly, a number of business interview participants stated that they would be ready to explore possibility of having closer ties with local university. Most importantly, results do not suggest the existence of cultural or other biases that would become stumbling blocks for more comprehensive collaboration with local universities.

5.3 Agglomeration of ICT businesses

Converging evidence of both survey and interview results suggest that a number of different factors have and still are influencing agglomeration of ICT businesses in North Shore. However, two most prominent reasons behind agglomeration appear to be subjected to lifestyle driven concerns such as business owners' decision to live in North Shore or because of overall quality of life. Other reasons predominantly include availability of infrastructure and business premises or availability of skilled labour. Similarly, results from interviews also suggested that most businesses were attracted to North Shore by availability of appropriate office space and supporting infrastructure.

Interestingly, synergistic aspects of business clustering – geographic proximity to related and supporting industries – appear to have very little effect on location

decision-making. In fact, overall lack of collaborative culture and resulting business linkages also suggests that business clustering has very little magnetic appeal.

5.4 Implications for Cluster Theory

Literature and local findings strongly suggest that local culture which manifests itself through local preferences, local ways of doing things, social networks and overall entrepreneurial spirit influences the propensity of a region to develop clusters. In other words if such a receptive culture does not exist clusters are highly unlikely to develop or succeed if imposed artificially. Cases of both Silicon Valley and "The Third Italy" suggest the existence of social relationships and social networks whether through peers, family or otherwise which created a receptive climate for collaboration, value chain relationships or collective action. Once in place those social ties translated themselves into fruitful business relationships when parties decided to venture into business dealings. Of course, this is not to suggest that people within those regions must be known to each other before any such dealings are possible. Rather there must be a core of businesses, that is, a synergetic critical mass of like-minded and business-minded individuals that will set the standards or cultural norms, which will be compelling enough for everybody, including newcomers, to follow.

Porter admitted that such relationships are crucial for the existence of a cluster when he wrote:

> While the existence of a cluster makes such relationships more likely to develop and more effective once in place the process is far from automatic. Formal and informal organizing mechanisms and cultural

> norms often play a role in the development and functioning of clusters (Porter, 1998a: 214)

However, it could be argued that this statement does not present a full picture of true background dynamics behind cluster creation. Porter states that the "existence of a cluster makes such relationships more likely to develop". It can be argued that clusters exist as result of such relationships rather than causing them. Of course, clusters may also promote relationship building to certain extent. Thus the effect could be thought of as circular rather than linear.

Nevertheless, it is arguable how strong a cluster would really be if such relationships did not exist in the first place. For example, experiences from North Shore centers/incubators suggest that businesses generally do not collaborate or if they do it is because of social ties and relationships with businesses "they could get along with". Hence, the importance of cultural norms and their social manifestations determine if clusters will succeed if implemented.

Experiences from North Shore ITC business community suggest that businesses work in isolation rather than in collaboration as part of a value chain. This is visible not only from the fact that most businesses do not have any closer ties with each other but also in the scale of duplication of services whereby many companies are offering very similar services. In fact, a casual look on web sites of many of North Shore ITC companies reveals a substantial degree of same or similar services. While this situation may be explained through smallness of market size, hence businesses are being compelled to increase service range at the price of specialization, it also suggests that businesses are not forming a value chain. Rather, companies are often scrambling for revenue while being

completely unaware of what services are offered by other similar businesses in the community.

While this situation may not be typical of other regions or indeed other sectors of business in North Shore the study indicates that cluster creation requires strong culture to exist that encourages social networks and entrepreneurial spirit.

Similarly, as results strongly suggest agglomeration of specialized businesses does not necessarily have to imply existence of the cluster relationships among the collocated businesses. Moreover, agglomeration of such businesses may also have nothing to do with decisions of new companies to locate there. Rather as McKendrick et al (2000) pointed out companies may merely have same or similar needs. In the case of North Shore two most important needs appear to be lifestyle driven. Hence, agglomeration of ICT businesses on the North Shore does not follow Porter diamond model or at least it does not follow it fully. Results or survey suggest that agglomeration is largely not influenced by local demand conditions as only 6.7 % of respondents replied that they chose North Shore in order to be close to their customers. Furthermore, factor conditions such as availability of skilled labour and infrastructure had only marginally influenced choice of North Shore as a place of many ICT companies as it is seen from survey statistics i.e. only 6.7 % of respondents stated that they chose North Shore in order to be close to the pool of potential skilled labour and 8.3 % stated other factors that mainly involved infrastructural concerns. In fact, infrastructural concerns were mainly cited by interviewed businesses i.e. residents of North Shore industrial parks/incubators.

Survey results also indicate that there is no strong sense of rivalry among North Shore ICT companies nor do businesses compare much their services to those of other companies. Moreover, as it has already been indicated presence of related and supporting industries has almost no effect on agglomeration of ICT companies in the North Shore. Hence, it can be argued that diamond model does not fully describe the reasons and the nature of agglomeration with regards to ICT business community of the North Shore.

Rather, as it can be deduced from the research of economic geographers, reasons for agglomeration of businesses are seemingly specific to the particular place and can hardly be generalized and applied elsewhere. Moreover, reasons for agglomeration appear to be as equally driven by business concern as by cultural, social and lifestyle concerns (Florida, 2002a). Furthermore, as both Florida (2002b) and Hall (2001) have shown characteristics of 'soft' externalities are often primary drivers behind agglomeration of talented people in a given place. While, it is true that Porter (1998a) have made some references to the importance of 'soft' externalities these have received only a sporadic attention, which may leave an impression of marginal importance.

Indeed as literature review have shown scholars are often sharply divided in emphasis when considering agglomeration and what causes it, often promoting ideas peculiar to their own field of expertise. Despite that, there is also a growing recognition of 'soft' or people related concerns suggesting that consideration of this particular dimension should receive more prominent emphasis in cluster theory. Likewise these 'soft' concerns mostly manifested through local culture

also appear to be determining factors behind the level of collaboration, networking and overall connectedness of local business community, hence the strength of local value chains.

While this thesis does not attempt to generalize these findings or make them sound prescriptive for other settings, they nevertheless cast a shadow of doubt as to the universal applicability of Porter's model. Two main concerns appear to be cultural foundations of a region and understanding of specific factors influencing actual agglomeration. Suggestion is that these two fundamental aspects must be clearly understood before applicability of cluster model can be applied to a particular region. Most importantly, such factors must be understood before regions embark on expensive voyage of replicating place such as Silicon Valley using diamond model as a blueprint.

5.5 Conclusion

Cultural foundations appear to have a strong influence on geographical clustering and its value chain formation. Similarly, intrinsic needs of residents and businesses in a region are apparently influencing choice of location. These needs are not necessarily driven by presence of similar businesses. Rather, indications are that agglomerated enterprises may simply have the same needs e.g. availability of suitable premises. Furthermore, many of those needs may have also nothing to do with enhancement of business related advantages but may be purely driven lifestyle concerns of residents themselves.

5.6 Suggestion for further research

This thesis investigated local condition and factors influencing agglomeration of ICT businesses in North Shore City – Auckland, New Zealand. Hence, it does not claim universal applicability. However, both local findings and literature suggest a strong influence of cultural foundations on cluster formation. Similarly, agglomeration of businesses and reasons of why businesses concentrate in any given region appears to be influenced by specifics of business needs and intrinsic needs or residents in region i.e. in the case of North Shore these appear to be lifestyle concerns.

More, research needs to be done in those two aspects across different regions and industries before a comprehensive understanding can be deduced as to the universal applicability of diamond model. Most importantly, cultural foundations and their implications must be understood in relation to how they influence value chain formation in any given region.

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Appendix A – Cover letter and Survey Questionnaire

Massey University
COLLEGE OF BUSINESS
Kaupapa Whai Pakihi

DEPARTMENT OF MANAGEMENT AND INTERNATIONAL BUSINESS - ALBANY CAMPUS
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North Shore Mail Centre
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T 64 9 441 8115
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www.massey.ac.nz

Address

Date 10.09. 2003

Dear .....,

You have been selected to participate in this important research project. It is being undertaken as a part of my Master thesis research into the **Replicability of the Silicon Valley in the North Shore City context**. The results of this research will also help in gaining a clearer picture as to the needs and opinions of local IT industry as well as what needs to be done in order to recreate Silicon Valley success in the North Shore City.

Hence, In order to acquire the necessary data I would be grateful if you tool a short time for the completion of the survey questions.

In order to shorten the time necessary for the completion, questions have been scaled down to a bare minimum. Accordingly I estimate that the survey can be completed during an ordinary coffee break.

Please be assured that the information you provide will be held in the strictest confidence and your identity kept anonymous. Similarly, all the data collected will be used only for the purpose of this research and will not be passed on to any third party. Upon analysis all collected survey forms will be destroyed.

If you have any questions regarding this research project, please to not hesitate to contact either my research supervisor Ms. Coral Ingley at Massey University (phone 443 9799 ext. 9572) or myself [redacted]

Yours Sincerely,

Researcher:
Zlatko Simicic

Survey on replicability of Silicon Valley in the North Shore

Please circle the answer that is closest your situation. Please note that there are no right or wrong answers but only ones that are descriptive of your preferences and/or situation.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree

Some business people find value in networking with other businesses. Please Tell us how much you agree or disagree with each statement by circling the number to the right of each statement that most closely corresponds to your answer. The meaning of the numbers is shown in the scale above.

1. I often attend business gatherings/forums in my local community. 1 2 3 4 5 6 7
2. I often attend business gatherings/forums in the wider Auckland area. 1 2 3 4 5 6 7
3. I often attend national business gatherings/forums. 1 2 3 4 5 6 7
4. I would describe business forums as very useful. 1 2 3 4 5 6 7
5. I actively participate in business forum discussions. 1 2 3 4 5 6 7
6. I regularly meet with other business people in an informal, non-work related setting 1 2 3 4 5 6 7
   (e.g. golf club,tennis club, rotary club, cosmopolitan club, etc.)

Silicon Valley is known for its strong networking character. However, the question is how much is this replicable elsewhere. Please tell us how much you agree or disagree with each statement using scale at the top of the page.

1. I would readily share "know-how" or technical knowledge with businesses in local community who are not my direct competitors but are in related field of operations 1 2 3 4 5 6 7
   (e.g. you are both software companies but offer different services)
2. I would share business knowledge with other businesses in my local community 1 2 3 4 5 6 7
   (e.g. sharing information on best business practices)
3. I would share knowledge about potential markets with businesses in local community who are not my direct competitors but are in a related field of operation 1 2 3 4 5 6 7
4. I would consider every business in related field as potential competitor. 1 2 3 4 5 6 7
   potential competitor.
5. I would consider every business in related field as potential partner. 1 2 3 4 5 6 7
6. People in our company consult with other companies in neighborhood when certain technical issues arise. 1 2 3 4 5 6 7
   (e.g. simple technical tip for no charge)

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree

Another important characteristic of Silicon Valley is geographic proximity of businesses and benefits derived from it. The question is however, how much is this important to North Shore technology companies. Please tell us how much you agree or disagree with each statement using scale at the top of the page.

1. It is important for our company to be geographically close to other companies in our field of expertise. 1 2 3 4 5 6 7
2. It is important for our company to know what potential business partners are located nearby. 1 2 3 4 5 6 7
3. We have a pretty good idea about what other businesses in our wider neighborhood could offer us in terms of technical or business expertise. 1 2 3 4 5 6 7
4. We often compare our services to those of other companies on the Shore that are in related field. 1 2 3 4 5 6 7
5. We would like to explore possibility of having closer ties with local universities. (e.g. Massey University) 1 2 3 4 5 6 7
6. We have a pretty good idea of how Massey University presence on North Shore could help our business. 1 2 3 4 5 6 7

This is a hypothetical case: Your company has a problem or business need that is beyond its immediate expertise. However, you think that there is a remote chance that somebody in your company could possibly meet that need. You would do one of the following. *(Please circle one number on the left that closest describes your situation)*

1. We would try doing it ourselves. "the aim is to do internally whatever we need to cut the cost. After all we believe in Do-It-Yourself."
2. Call the experts from other company. "Better leave the job to people who have specialized expertise regardless of the cost."
3. Other. (Please Specify): _____

_____

_____

One of the strongest movements in IT industry to date is certainly "open source". It appears that the two most important characteristics of this community are the **peer recognition** and the challenge. Would you say that being recognized as experts among your peers in local community and wider is important for your business.
(please note, this does not mean being recognized as such by your customers but specifically by the people in your field of expertise)

1. Not important
2. Not particularly important
3. Don't know / don't care / no opinion
4. Somewhat important
5. Very important

Your can make any additional comment if you like: _____

_____

_____

_____

People choose location for their business due to various reasons, nevertheless, it appears that location matters. Could you tell us what were the main reasons for locating you business in the North Shore City. *(Please choose up to three main points)*

1. To be close to our customers
2. To be close to other similar businesses (i.e. to harness benefits of synergy)
3. To be close to our supplier
4. To be close to local university
5. To be close to the pool of potential workers and expertise
6. Because founders/owners live(d) here.
7. Because of overall quality of life
8. No particular reason
9. Other. (Please Specify):_____

_____

We would like to hear your thoughts on anything else you would like to add about business networking, collaboration, knowledge sharing or things you think should be relevant in this research. Please, feel free to use below space for your thoughts and suggestion.

Thank you very much for taking the time and effort to participate in this survey

Appendix B
Letters and additional though received with returned survey forms

Letter 1

Unfortunately, in New Zealand, we suffer from ideas-poachers. It seems to be the norm, for people to find out how to accomplish a task without having the expert knowledge and without having to part with any money. I have been in the position many times, where people only want information so that they can accomplish the task themselves or get someone else to do it for free. Often the thing sought is the expertise, whereas their services are not. Quotes are often asked for so the problem is solved, but services are not carried out by the person with the knowledge. This is the reason that so many reputable companies require payment for a quote that is redeemable if the quote is accepted. This is intended to stop the casual knowledge-seeker.

On a business level, there are many small businesses that leech of the experts to fulfill their own selfish desires. This has become apparent when some small businesses undercut the large businesses but still get the information from them; basically this constitutes knowledge theft – making a gain from another without acknowledging the fact of remunerating the source.

Due to the way businesses are poached for information, information that nowadays costs thousands to obtain; many are shying away from giving away hard-earned expertise. On the other hand, when studying, one needs assistance, of which I, and I would suspect anyone else, has no objection to giving, provided some recompense is given, that is, knowledge and experience are gained from a reciprocal arrangement – come and learn for yourself by doing these jobs for use, we then enjoy helping those who show their appreciation by fulfilling a few tasks for us.

Networking, is often a useful feature, it gives all opportunity to know what other experts are doing and allow opportunity to find experts from areas we ourselves are not skilled at, we can therefore, utilize these experts, after having a little insight and foreknowledge of them and their skills. A healthy respect is often gained by all, since they now become allies, not sources of information.
For all businesses to be successful, everyone needs to realize that experts only come after hefty resources are input, this often means financially. This in itself places businesses in a situation where they need to offset training costs against what they charge a client. If smaller businesses are always driving profits down, which generally tends to happen, especially in New Zealand over the past twenty years, expertise will dwindle thereby we as a country will have no world-class experts, because no-one can afford to be trained. A 'fair price for a fair job' needs to be every business's maxim.

Letter 2
The NZ market is small and my Substantial business cannot really consider the North Shore as a market in its own right. The primary concern is credibility amongst customers that the location we choose is the right place for us to operate firm. This is about infrastructure, services and access not about other technology business being here.

Letter 3
The Internet opens up huge communication options for our company. We survive more from this sort of connectivity & networking than physical location-based networking.
Silicon Valley, I believe, was a bubble – a phenomenon that experts believe will not happen again.
That said, I believe somewhere like the North Shore, Auckland, has potential as a location for offering IT related services such as data banks, back-up, disaster recovery services & the like.

Letter 4
1. NZ is too small for networking to be constrained by geography/proximity.
2. Networking is facilitated (for software developers) by the internet & telephone
3. Face to face meetings are valuable but not essential

Letter 5
My value as a IT professional is the knowledge I gain by applying software and hardware technologies to real life business problems. This [is] my value, this [is] my edge, this is my point of this is how I make living.
All the information and all the communities (cyber) that you can imagine are already available via the Internet.

Letter 6
I don't really like business things. I feel [unclear], would rather just be home
Besides I would rather just get on with the job. You meet people without trying

Appendix C Correlation Statistics

			I often attend business gatherings/f orums in my local community	I often attend business gathering s/forums in the wider Auckland area	I often attend national business gathering s/forums	I would describe business forums as very usefull	I actively participat e in business forum discussi ons	I regularly meet with other busines s people in an informal, non-work related setting (e.g. golf club, rotary club, cosmopl olitan club, etc.)	I would readily share "know-how" or thechnical knowledge with businesse s in local community who are not my direct competitor s but are in related field of operation (e.g. you are both software companies but offer different services)	I would share business knowledge with other businesses in my local community (e.g. sharing information on best business practices)	I would share knowledge about potential markets with businesse s in local community who are not my direct competitor s but are in a related field of operation	I would consider every business in related field as potential competitor	I would consider every business in related field as potential partner	People in our compan y consult with other compani es in neighbor hood when certain technica l issues arise (e.g. simple technica l tip for no charge)	It is important for our company to be geographi cally close to other companie s in our field of expertise	It is important for our company to know what potential business partners are located nearby	We have a pretty good idea about what other business es, in our wider neighborh ood, could offer us in terms of technicol or business expertise	We often compa re our servic es to those of other compa nies on the Shore that are in related field	We would like to explore possibil ity of having closer ties with local universi ties (e.g. Massey Universi ty)	We have a pretty good idea of how Massey Universit y presence on North Shore could help our business
Spearman's rho	I often attend business gatherings/forums in my local community	Correlation Coefficient	1.000	.814**	.771**	.590**	.806**	.316	.283	.301	-.009	.116	.116	.213	.355*	.280	.285	.298	.327*	.444**
		Sig. (2-tailed)		.000	.000	.000	.000	.054	.086	.066	.957	.489	.488	.200	.029	.115	.087	.069	.045	.005
		N	38	38	38	38	38	38	38	38	38	38	38	38	38	38	37	38	38	38
	I often attend business gatherings/forums in the wider Auckland area	Correlation Coefficient	.814**	1.000	.703**	.564**	.853**	.315	.340*	.346*	.178	-.041	.162	.122	.158	.288	.408*	.131	.388*	.377*
		Sig. (2-tailed)	.000		.000	.000	.000	.054	.037	.033	.286	.807	.332	.467	.342	.080	.012	.433	.016	.019
		N	38	38	38	38	38	38	38	38	38	38	38	38	38	38	37	38	38	38
	I often attend national business gatherings/forums	Correlation Coefficient	.771**	.703**	1.000	.523**	.711**	.114	.160	.288	.019	-.052	.371*	-.103	.172	.159	.054	.102	.378*	.335*
		Sig. (2-tailed)	.000	.000		.001	.000	.497	.339	.079	.909	.755	.022	.537	.303	.341	.751	.541	.019	.040
		N	38	38	38	38	38	38	38	38	38	38	38	38	38	38	37	38	38	38
	I would describe business forums as very usefull	Correlation Coefficient	.590**	.564**	.523**	1.000	.711**	.386*	.331*	.434**	.035	.144	.247	-.020	.225	.302	.215	.238	.384*	.432**
		Sig. (2-tailed)	.000	.000	.001		.000	.017	.042	.006	.836	.390	.136	.904	.174	.065	.200	.150	.017	.007
		N	38	38	38	38	38	38	38	38	38	38	38	38	38	38	37	38	38	38
	I actively participate in business forum discussions	Correlation Coefficient	.806**	.853**	.711**	.711**	1.000	.294	.375*	.412*	.072	-.001	-.040	.097	.186	.217	.179	.257	.382*	.327*
		Sig. (2-tailed)	.000	.000	.000	.000		.073	.021	.010	.668	.995	.810	.564	.263	.191	.290	.119	.026	.045
		N	38	38	38	38	38	38	38	38	38	38	38	38	38	38	37	38	38	38
	I regularly meet with other business people in an informal, non-work related setting (e.g. golf club, rotary club, cosmopolitan club, etc.)	Correlation Coefficient	.316	.315	.114	.386*	.294	1.000	.197	.291	.194	-.006	.049	.279	.030	.134	.407*	-.106	.006	.220
		Sig. (2-tailed)	.054	.054	.497	.017	.073		.235	.076	.242	.973	.769	.090	.857	.421	.012	.525	.970	.184
		N	38	38	38	38	38	38	38	38	38	38	38	38	38	38	37	38	38	38
	I would readily share "know-how" or thechnical knowledge with businesses in local community who are not my direct competitors but are in related field of	Correlation Coefficient	.283	.340*	.160	.331*	.375*	.197	1.000	.901**	.809**	-.110	-.018	.606**	.150	.071	.121	-.101	-.051	.103
		Sig. (2-tailed)	.086	.037	.339	.042	.021	.235		.000	.000	.511	.918	.000	.369	.673	.475	.546	.761	.539
		N	38	38	38	38	38	38	38	38	38	38	38	38	38	38	37	38	38	38
	I would share business knowledge with other businesses in my local community (e.g. sharing information on best business practices)	Correlation Coefficient	.301	.346*	.288	.434**	.412*	.291	.901**	1.000	.757**	-.206	.036	.489**	.123	.092	.128	-.026	-.046	.175
		Sig. (2-tailed)	.066	.033	.079	.006	.010	.078	.000		.000	.214	.828	.002	.463	.585	.450	.879	.784	.293
		N	38	38	38	38	38	38	38	38	38	38	38	38	38	38	37	38	38	38
	I would share knowledge about potential markets with businesses in local community who are not my direct competitors but are in a related field of	Correlation Coefficient	-.009	.178	.019	.035	.072	.194	.809**	.757**	1.000	-.253	.114	.522**	-.086	-.030	.119	-.247	-.125	.041
		Sig. (2-tailed)	.957	.286	.908	.838	.668	.242	.000	.000		.125	.494	.001	.609	.859	.485	.134	.456	.806
		N	38	38	38	38	38	38	38	38	38	38	38	38	38	38	37	38	38	38
	I would consider every business in related field as potential competitor	Correlation Coefficient	.116	-.041	-.052	.144	-.001	-.006	-.110	-.206	-.253	1.000	-.087	-.033	.359*	-.016	-.038	.208	.104	.042
		Sig. (2-tailed)	.489	.807	.755	.390	.995	.973	.511	.214	.125		.606	.843	.027	.923	.822	.210	.536	.801
		N	38	38	38	38	38	38	38	38	38	38	38	38	38	38	37	38	38	38
	I would consider every business in related field as potential partner	Correlation Coefficient	.116	.162	.371*	.247	-.040	.049	-.018	.036	.114	-.087	1.000	-.263	-.029	.071	.073	-.154	.072	.222
		Sig. (2-tailed)	.488	.332	.022	.136	.810	.769	.916	.828	.494	.606		.110	.865	.671	.667	.356	.669	.181
		N	38	38	38	38	38	38	38	38	38	38	38	38	38	38	37	38	38	38
	People in our company consult with other companies in neighborhood when certain technical issues arise (e.g. simple technical tip for no charge)	Correlation Coefficient	.213	.122	-.103	-.020	.087	.279	.606**	.489**	.522**	-.033	-.263	1.000	.212	-.032	.085	-.207	-.136	.079
		Sig. (2-tailed)	.200	.467	.537	.904	.564	.090	.000	.002	.001	.843	.110		.202	.849	.619	.212	.414	.638
		N	38	38	38	38	38	38	38	38	38	38	38	38	38	38	37	38	38	38
	It is important for our company to be geographically close to other companies in our field of expertise	Correlation Coefficient	.355*	.158	.172	.225	.188	.030	.150	.123	-.066	.359*	-.029	.212	1.000	.552**	.197	.289	.256	.252
		Sig. (2-tailed)	.029	.342	.303	.174	.263	.857	.369	.463	.609	.027	.865	.202		.000	.243	.102	.120	.127
		N	38	38	38	38	38	38	38	38	38	38	38	38	38	38	37	38	38	38
	It is important for our company to know what potential business partners are located nearby	Correlation Coefficient	.280	.288	.159	.302	.217	.134	.071	.092	-.030	-.016	.071	-.032	.552**	1.000	.532**	.463**	.240	.532**
		Sig. (2-tailed)	.115	.080	.341	.065	.191	.421	.673	.585	.859	.923	.671	.849	.000		.001	.003	.147	.001
		N	38	38	38	38	38	38	38	38	38	38	38	38	38	38	37	38	38	38
	We have a pretty good idea about what other businesses, in our wider neighborhood, could offer us in terms of technical or business expertise	Correlation Coefficient	.285	.408*	.054	.215	.179	.407*	.121	.128	.119	-.038	.073	.085	.197	.532**	1.000	.240	.322	.567**
		Sig. (2-tailed)	.087	.012	.751	.200	.290	.012	.475	.450	.485	.822	.667	.619	.243	.001		.153	.052	.000
		N	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37
	We often compare our services to those of other companies on the Shore that are in related field	Correlation Coefficient	.298	.131	.102	.238	.257	-.106	-.101	-.026	-.247	.208	-.154	-.207	.289	.463**	.240	1.000	.094	.371*
		Sig. (2-tailed)	.069	.433	.541	.150	.119	.525	.546	.879	.134	.210	.356	.212	.102	.003	.153		.573	.022
		N	38	38	38	38	38	38	38	38	38	38	38	38	38	38	37	38	38	38
	We would like to explore possibility of having closer ties with local universities (e.g. Massey University)	Correlation Coefficient	.327*	.388*	.378*	.384*	.382*	.006	-.051	-.048	-.125	.104	.072	-.136	.256	.240	.322	.094	1.000	.474**
		Sig. (2-tailed)	.045	.016	.019	.017	.026	.970	.761	.784	.456	.536	.669	.414	.120	.147	.052	.573		.003
		N	38	38	38	38	38	38	38	38	38	38	38	38	38	38	37	38	38	38
	We have a pretty good idea of how Massey University presence on North Shore could help our business	Correlation Coefficient	.444**	.377*	.335*	.432**	.327*	.220	.103	.175	.041	.042	.222	.079	.252	.532**	.567**	.371*	.474**	1.000
		Sig. (2-tailed)	.005	.019	.040	.007	.045	.184	.539	.293	.806	.801	.181	.638	.127	.001	.000	.022	.003	
		N	38	38	38	38	38	38	38	38	38	38	38	38	38	38	37	38	38	38

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

Appendix D
Email correspondence

Email 1

Dear ……,

Thank you very much for expressing your interest into my research. As Ms. Ingley might have told you, my research topic is "Replicability of the Silicon Valley in the North Shore city context". My primary concern is that only following professor Michael Porter's model will not necessarily produce a cluster of Silicon Valley calibre or resemblance.

While not wanting to refute his contribution, my research is focused on finding a balanced view of cluster success and how it can be successfully applied in New Zealand.

I am sending you a copy of my research framework and I just want to say that I will definitely appreciate your thoughts, feedback and suggestions.

Looking forward to meeting you on Monday,

Kind Regards,

Email 2

Dear …..,

My name is Zlatko Simicic, I am doing my master thesis research here at Massey University under the supervision of Ms Coral Ingley. My research topic is "Replicability of the Silicon Valley in the North Shore City context". My primary concern is that only following professor Michael Porter's model will not necessarily produce a cluster of Silicon Valley calibre or resemblance.

While not wanting to refute his contribution, my research is focused on finding a balanced view of cluster success and how it can be successfully applied in New Zealand.

Given your expertise in the subject I would definitely like to hear your opinions and insights pertaining to industrial clusters and regional development particularly with the view of replicating Silicon Valley's success.

For that reason I am sending you a short version of my research framework that will give you a perspective of my research focus.

Looking forward to hearing form you

Kind Regards,

Email 3

Dear .....,

My name is Zlatko Simcic, I am doing my master thesis research here at Massey University under the supervision of Ms Coral Ingley. My research topic is "Replicability of the Silicon Valley in the North Shore City context". Naturally, that leads me to e-centre as the first place to look for local experiences and opinions.

As you are one of the residents of the e-centre I would like to ask you for a short interview which would focus on your personal observations and/or experiences as well as opinions as to the level of replicability that can be applied in terms of mimicking success Silicon Valley has mastered.

Your participation will be tremendously valued and it will enlighten understanding of local experiences, strengths and concerns. I appreciate that you have very busy schedule. Hence, I would be happy to come any time that best suits you.

Kind Regards,

Email 4

Dear ....

My name is Zlatko Simcic, I am doing my master thesis research here at Massey University under the supervision of Ms Coral Ingley. My research topic is "Replicability of the Silicon Valley in the North Shore City context". Naturally, that leads me to e-centre as the first place to look for local experiences and opinions.

As you are one of the residents of the e-centre I would like to ask you for a short interview which would focus on your personal observations and/or experiences as well as opinions as to the level of replicability that can be applied in terms of mimicking success Silicon Valley has mastered.

Your participation will be tremendously valued and it will enlighten understanding of local experiences, strengths and concerns. I appreciate that you have very busy schedule. Hence, I would be happy to come any time that best suits you.

Kind Regards,

Email 5

Dear .....,

My name is Zlatko Simcic, I am currently doing my Master thesis research (Massey University) under the supervision of Ms. Coral Ingley. Primary focus of my research is "Replicability of the Silicon Valley in the North Shore City context" Hence, I am looking for local experiences and impressions of people such as yourself who have first hand expertise in congregating businesses together. I would really like to meet you to hear your opinions and impressions, so I was wondering if you would agree for a short interview/meeting at the time that best suites you.

Kind Regards,

Email 6

Dear .....,

My name is Zlatko Simcic, I am doing my master thesis research here at Massey University under the supervision of Ms. Coral Ingley. My research topic is "Replicability of the Silicon Valley in the North Shore City context". Naturally, that leads me to e-centre as the first place to look for local experiences and opinions.

As you are one of the residents of the e-centre I would like to ask you for a short interview which would focus on your personal observations and/or experiences as well as opinions as to the level of replicability that can be applied in terms of mimicking success Silicon Valley has mastered.

Your participation will be tremendously valued and it will enlighten understanding of local experiences, strengths and concerns. I appreciate that you have very busy schedule. Hence, I would be happy to come any time that best suits you.

Kind Regards,

Email 7

Dear ....,

My name is Zlatko Simcic, I am doing my master thesis research here at Massey University under the supervision of Ms. Coral Ingley. My research topic is "Replicability of the Silicon Valley in the North Shore City context". Naturally, that leads me to e-centre as the first place to look for local experiences and opinions.

As you are one of the residents of the e-centre I would like to ask you for a short interview which would focus on your personal observations and/or experiences as well as opinions as to the level of replicability that can be applied in terms of mimicking success Silicon Valley has mastered.

Your participation will be tremendously valued and it will enlighten understanding of local experiences, strengths and concerns. I appreciate that you have very busy schedule. Hence, I would be happy to come any time that best suits you.

Kind Regards,

Email 8

Dear ...,

I am a postgraduate student here at Massey University where I am working on my master thesis "Replicability of the Silicon Valley in the North Shore City context" This work is being done under the supervision of Massey's Lecturer, Ms.Coral Ingley.

Silicon Valley and its replicability is something I have a great passion for, which is also the reason for choosing this very topic. Through my research I have found that North Shore City indeed does have the aspiration to create a high-tech "Silicon Valley" corridor.
http://www.enterprisens.org.nz/publications/2001/sept01/pm_launch.htm (where you were quoted as pronouncing this very vision)

I would very much like an opportunity to talk to you (as a part of my research) about your views, vision and opinions of the North Shore City as the future "Silicon Valley". I was wondering if there is any time in your busy schedule when I could come to see you for a short interview/discussion.

Kind Regards,

Email 9

I am a postgraduate student here at Massey University (Albany), where I am in process of doing my master thesis research on **"Replicability of the Silicon Valley in the North Shore City"** This research is being undertaken under the supervision of Massey's lecturer Ms.Coral Ingley.

The aim of the research is to answer the question of what are the best networking, collocation and collaboration practices (main characteristics of Silicon Valley) for New Zealand business context or in this case North Shore City. Hence, I would definitely like to have an opportunity to talk to you in person to find out more about your experiences and opinions. So I am wondering if you would agree for a short meeting/interview at the time that best suits you.

I've attached a list of question that are of the most interest to this research. You may or may not have all of the answers but it will give you some indication as to what this research is trying to find out.

I also want to let you know that this research has a full approval of Massey University Ethics Committee and that your anonymity will be preserved at all times.

Looking forward to your reply

Regards,

Email 10

I am a postgraduate student here at Massey University where I am in process of completing my Master thesis research on "Replicability of the Silicon Valley in the North Shore City" This Research is being undertaken under the supervision of Ms. Coral Ingley (Department of International Business and Management)

As this research includes experiences of companies who participate in transformation of North Shore in a future centre of knowledge and technology and in particular because of the standing of your company and its meaning to North Shore City I would be tremendously appreciative if I could have opportunity to have an interview either with yourself or with somebody who you think is appropriate and can add a valuable insight with their observations and expertise.

This interview does not have to be long and I would be ready to come at the time that best suits your schedule.

I also want to emphasize that this research has a full approval of Massey University Ethics Committee and that everybody's anonymity is guaranteed. Furthermore, if you have any additional questions you are also free to contact my research supervisor Ms. Coral Ingley at 443 9700 ext. 9572

Looking forward to your reply,

Regards,

Email 11

Dear ...,
I am a postgraduate student here at Massey University where I am in process of completing my Master thesis research on "Replicability of the Silicon Valley in the North Shore City" This Research is being undertaken under the supervision of Ms. Coral Ingley (Department of International Business and Management)

As this research includes experiences of companies who participate in transformation of North Shore into a future centre of knowledge and technology and in particular because of the standing of your company and its meaning to North Shore City I would be tremendously appreciative if I could have opportunity to have an interview with yourself.

This interview would not have to be long and I would be ready to come at the time that best suits your schedule.

I also want to emphasize that this research has a full approval of Massey University Ethics Committee and that everybody's anonymity is guaranteed. Furthermore, if you have any additional questions you are also free to contact my research supervisor Ms. Coral Ingley at 443 9700 ext. 9572

Looking forward to your reply,

Regards,

Email 12

Dear ...,
I am a postgraduate student here at Massey University where I am in process of completing my Master thesis research on "Replicability of the Silicon Valley in the North Shore City" This Research is being undertaken under the supervision of Ms. Coral Ingley (Department of International Business and Management)

As this research includes experiences of companies who participate in transformation of North Shore into a future centre of knowledge and technology and in particular because of the standing of your company and its meaning to North Shore City I would be tremendously appreciative if I could have opportunity to have an interview either with yourself or with somebody who you think is appropriate and can add a valuable insight with their observations and expertise.

This interview would not have to be long and I would be ready to come at the time that best suits your schedule.

I also want to emphasize that this research has a full approval of Massey University Ethics Committee and that everybody's anonymity is guaranteed. Furthermore, if you have any additional questions you are also free to contact my research supervisor Ms. Coral Ingley at 443 9700 ext. 9572

Looking forward to your reply,

Regards,

Appendix E – MUHEC Checklist

MASSEY UNIVERSITY HUMAN ETHICS COMMITTEE CHECKLIST FOR RESEARCH, TEACHING AND EVALUATIONS INVOLVING HUMAN PARTICIPANTS

To be completed by all persons undertaking activities as specified in the Code of Ethical Conduct for Research, Teaching and Evaluations involving Human Participants (Section 1).

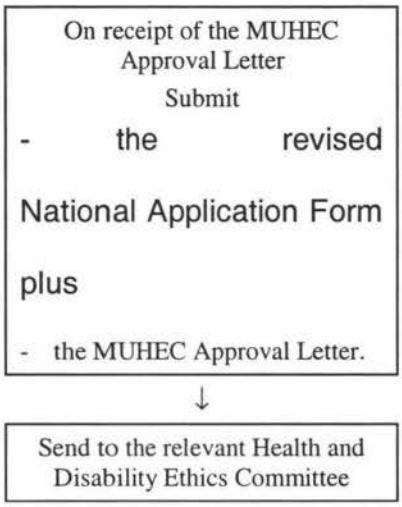
After reading the Code of Ethical Conduct for Research, Teaching and Evaluations involving Human Participants, discussing the project with your peers/supervisor/manager, and participating in any formal peer review mechanism your Dept/School/Institute/Section or College may have, complete this checklist before proceeding where necessary to a Massey University Human Ethics Committee Application Form.
All questions must be answered. Please circle either YES or NO for each question.

↓

If you answer YES to any of the questions 6-23.	If you answer YES to questions 1, 2, 3, 4 or 5.	If you answer NO to all of the questions.
↓	↓	↓
Prepare an application using the MUHEC Application Form.	Prepare an application using the National Application Form and complete Section A only of the MUHEC Application Form.	Complete Section A only of the MUHEC Application Form.
↓	↓	↓
Submit: - the MUHEC Checklist plus - *the MUHEC Application Form.* Note that thirteen (13) copies of all documents are required for review at a MUHEC meeting.	Submit - the MUHEC Checklist plus - Section A only of the MUHEC Application Form plus - the National Application Form. Note that thirteen (13) copies of all documents are required for review at a MUHEC meeting.	Submit - the MUHEC Checklist plus - Section A only of the MUHEC Application Form for noting. Note that only one (1) copy of all documents is required for noting. A letter of acknowledgement will be sent.
↓	↓	↓
Send to the Secretary, Massey University Campus Human Ethics Committee at Albany or Palmerston North or Wellington	Send to the Secretary, Massey University Campus Human Ethics Committee at Albany or Palmerston North or Wellington	Send to the Secretary, Massey University Human Ethics Committee located at Palmerston North

↓

Continued next page ...



Applicants are referred to the Massey University Code of Ethical Conduct for Research, Teaching and Evaluations involving Human Participants and the Massey University Human Ethics Committee Application Form from the Massey University Human Ethics Committee website: http://www.massey.ac.nz/~muhec and the National Application Form from the Health Research Council website: http://www.hrc.govt.nz

Does this Project involve any of the following:

1. The use of: District Health Board facilities or staff or support, direct or indirect in full or in part by District Health Board funds? *If yes refer to the Code of Ethical Conduct for Teaching, Research and Evaluations involving Human Participants, Approval by a Health and Disability Ethics Committee (Section 5.3).*	YES	NO
2. Participants who are patients/clients of, or health information about an identifiable individual held by an organisation providing health services (for example, general practice, physiotherapy, occupational therapy, sports medicine), disability services, or institutionalised care. *If yes refer to the Code of Ethical Conduct for Teaching, Research and Evaluations involving Human Participants, Approval by a Health and Disability Ethics Committee (Section 5.3).*	YES	NO
3. Requirement for ethical approval to access health information about an identifiable individual held by the Ministry of Health or any other non-health-providing body. *If yes refer to the Code of Ethical Conduct for Teaching, Research and Evaluations involving Human Participants, Approval by a Health and Disability Ethics Committee (Section 5.3).*	YES	NO
4. A clinical trial which: requires the approval of the Standing Committee on Therapeutic Trials; requires the approval of the Gene Technology Advisory Committee; is sponsored by and/or for the benefit of the manufacturer or supplier of a drug or device. *If yes refer to the Code of Ethical Conduct for Teaching, Research and Evaluations involving Human Participants, Approval by a Health and Disability Ethics Committee (Section 5.3).*	YES	NO
5. Research in categories 1-4 involving New Zealand agencies, researchers or funds and undertaken outside New Zealand.	YES	NO
6. Any form of physically invasive procedure on volunteer Participants such as the collection of blood, body fluid or tissue samples, exercise regimes or physical examination?	YES	NO
7. The administration of any form of drug, medicine (other than in the course of standard medical procedure), placebo?	YES	NO
8. Physical pain, beyond mild discomfort?	YES	NO
9. The participation of minors (seven (7) years old or younger)?	YES	NO
10. Participants who are in a dependent situation, such as people with a disability, or residents of a hospital, nursing home or prison or patients highly dependent on medical care?	YES	NO
11. Participants who are unable to give informed consent?	YES	NO
12. The intentional recruitment of a specific cultural or minority group?	YES	NO

13. Processes that are potentially disadvantageous to a person or group, such as the collection of information which may expose the person/group to discrimination?	YES	NO
14. Conflict of interest situation for the researcher?	YES	NO
15. Participants who are staff or students of Massey University?	YES	NO
16. Use of questionnaire or interview, irrespective of the recording of the individual's identity, which might reasonably be expected to cause discomfort, embarrassment, or psychological or spiritual harm to the participants?	YES	NO
17. Payments or other financial inducements (other than reasonable reimbursement of travel expenses or time) to participants?	YES	NO
18. Deception of the participants, including concealment and covert observations?	YES	NO
19. Research to be carried out overseas?	YES	NO
20. Collection of information of illegal behaviour(s) gained during the research which could place the participants at risk of criminal or civil liability or be damaging to their financial standing, employability, professional or personal relationships?	YES	NO
21. A requirement by an outside organisation for Massey University Human Ethics Committee approval?	YES	NO
22. Any teaching which involves the participation of students for the demonstration of procedures or phenomena which have a potential for harm?	YES	NO
23. Any evaluation of university services or organisational practices where information of a personal nature may be collected or where participants may be identified? (evaluations of teaching programmes are excluded).	YES	NO