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The Design-Resource-Opportunity Connection
of
Entrepreneurship

A thesis presented in partial fulfilment of the
requirements for the degree of

Doctor of Philosophy
in
Management

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Abstract

This study explored the relatively uncharted territory of entrepreneurship as a design process. It distilled the central components underlying this design process in terms of resource and opportunity connections. Adoption of an entrepreneurial capital framework was invaluable for gaining insight into the complex process of resource use and acquisition. An interpretive phenomenological approach was used to research the entrepreneur's actual lived experience of opportunity development and new venture creation. Findings were gleaned from fourteen entrepreneurs in the knowledge intensive technology sector in New Zealand. In-depth interviews enabled the participants to tell their stories of how they enacted opportunity.

Two metaphors were explored with each of the interviewees. The first metaphor was introduced in order to comprehend how opportunity was perceived: Was it perceived as a mountain waiting to be climbed – opportunity discovery? Or was it perceived as a mountain that needed to be built - a creation view of opportunity? In order to understand resource interactions and relationships, the second metaphor explored a concept dear to the New Zealand psyche; that of No. 8 wire ingenuity in adapting to circumstance. Resource use and development was also investigated within the construct of bricolage.

A key finding was that the design process of entrepreneurship involved the exercise of resources - those at hand in the inner resource domain of initial entrepreneurial capital and also augmented entrepreneurial capital accessed in the external resource domain. The centrality of human capital in the form of prior knowledge and industry experience that is embedded in the entrepreneur was highlighted. Learning by doing and knowledge development with customers, via a process of co-construction was significant. Entrepreneurs employed a number of strategies to overcome the liabilities of size and newness and importantly the generation of symbolic capital enabled establishment of legitimacy in the eyes of their stakeholders. Social and financial bricolage was practised by some entrepreneurs to 'make do' with their existing resources.

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There are a number of acknowledgements due. Without the stories that provide the backbone, there would be no thesis. As such I am indebted to fourteen entrepreneurs who gave, not only of their time, but also of themselves in order to recount individual perspectives of their venture experiences. The insights gleaned form the basis of my study and I am truly grateful for their contribution.

However it is my supervisor, Professor Anne de Bruin to whom I must express my utmost appreciation. Little did she know what she was letting herself in for when I walked into her office! I have considered her my wellspring of academic knowledge and advice. Her sagacity, unfailing support, unstinting generosity with time and appropriate 'kicks up the butt,' underpin her professional ethos and personal values. Anne: My deepest and most sincere thanks.

To my family I must also express appreciation for their tolerance, encouragement and love. The support of my two wonderful sons as I have navigated some difficult terrain over the final stages of my journey has been absolute. *Vi et animo.*

To my late father John Desmond Baeyertz, FRCOG, FNZCOG, MB, CHB (Otago), this is for you.

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Introduction

1.1 Scope of the study

The statement that the entrepreneur is “the single most important player in a modern economy” (Lazear, 2002, p. 1) acknowledges the significance of entrepreneurship as the engine of economic and social development. However, as Hébert and Link (2006, p. 261) note, entrepreneurship is an “ambiguous concept”. Mainstream economists view the entrepreneur as a rational actor uninfluenced by other actors, whereas a contrasting sociological view assumes that the entrepreneur is an actor linked with, and influenced by others (Smelser & Swedberg, 1994). That is to say, it is “much less an individual game than initially presumed, and much more a social one” (Samuelsson & Davidsson, 2009, p. 234) with the effect that entrepreneurship is “constructed in social interaction between individuals” (Lindgren & Packendorff, 2009, p. 26).

The socially constructed nature of entrepreneurship recognizes the embedded characteristics of entrepreneurial action which occurs “as a context-dependent social and economic process” (Thornton, 1999, p. 20). It is a complex and multidimensional phenomenon involving actions taken, or not taken, within environments that facilitate or constrain (Gartner, 1985) and is embedded in the local context of the entrepreneur’s social world (Audretsch, Keilbach, & Lehmann, 2006) .

Context is a “multi-layered concept” (de Bruin & Dupuis, 2003, p. 1) that can be thought of as the frame of reference in which entrepreneurial activity occurs. Entrepreneurs are influenced in what they do and how they do it, by the environment in which they operate. Policy initiatives coupled with a country’s cultural values and characteristics, together with the resource environment and industry dynamics, all influence the entrepreneur and the business opportunity.

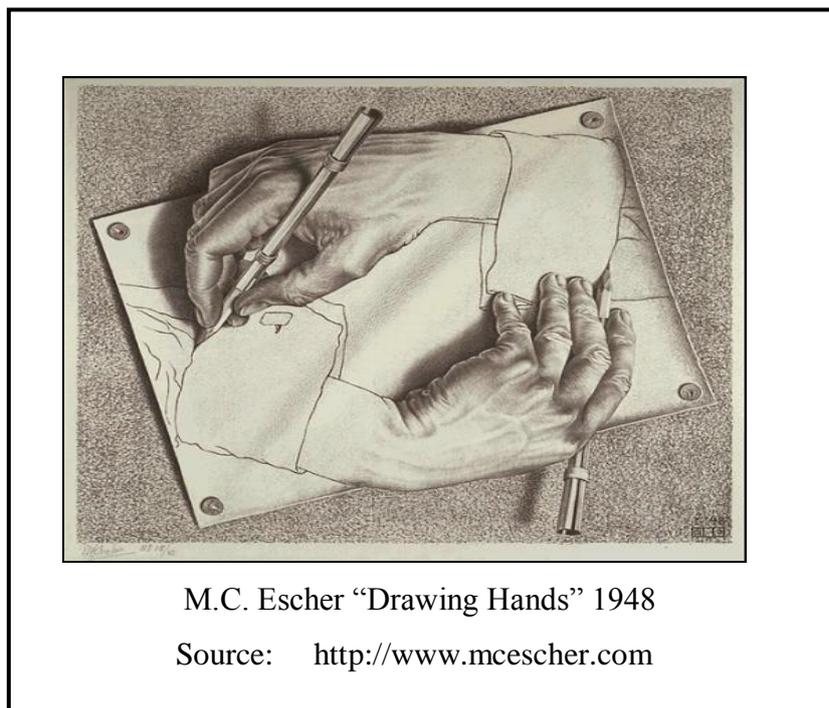
The variety and amount of financial and non-financial resources available to the entrepreneur's success in venture development is generally considered to be predicated on the resources that an entrepreneur can access (Brush, Greene, Hart, & Edelman, 1997). Initial resources are embedded in the entrepreneur as their entrepreneurial capital (Firkin, 2003; Shaw, Lam, & Carter, 2008, see section 3.4.3). How entrepreneurs create the capability to develop an opportunity is in turn predicated on their ability to generate value from their entrepreneurial capital. This value generation process, I encapsulate within a design process which "sits in the black box between input or initial conditions and performance outcomes" (Augier & Sarasvathy, 2004, p. 188). The aim of my study is to open up the black box and understand the design process of entrepreneurship. My study will cast some light on the design process by exploring how an entrepreneur with an existing resource set is able to link from a current situation to a preferred future state. This will provide a novel contribution to the existing body of entrepreneurship research and in particular new venture creation and opportunity enactment.

This study therefore delves into the design rubric of entrepreneurship. In the first instance it takes on board Sarasvathy's (2004b) suggestion that we can develop understanding as to how entrepreneurs "**design** adaptive and negotiated goals and strategies that shape both themselves and their environments over time" (Sarasvathy, 2004b, p. 714, my emphasis). This dynamic relationship between the entrepreneur and the environment is probed further by examining a set of specific interdependent relationships. Thus the design process is focused on in terms of the relationships between the entrepreneur and resources, and the relationships between the entrepreneur and opportunity.

In examining the design-resource-opportunity connection in New Zealand, I have been influenced by a further two facets of interest. The first facet draws upon the proposition that "opportunities take form as the entrepreneur defines them as such, and that through the process of defining and evaluating opportunities, the entrepreneurial process emerges" (Sarason, Dean, & Dillard, 2006, p. 293). This means that the opportunity is not separate from the entrepreneur and identifiable as existing 'out there'. Instead it is idiosyncratic to the entrepreneur in an interdependent relationship. This view embodies the essence of my conceptualization

that a corresponding interplay also occurs between the entrepreneur and resources. My interpretation is that the entrepreneur and the resources embedded within them in the form of entrepreneurial capital are similarly intertwined. The interdependency of this dynamic relationship, where neither would exist without the other, is succinctly portrayed in Figure 1.1.

Figure 1.1
A Visual Interdependency



The second facet of the design process is the concept of bricolage; a process of “making do by applying combinations of the resources at hand to new problems and opportunities” (Baker & Nelson, 2005, p. 333). Few new ventures can emerge with a fully developed set of resources (Brush, Greene, & Hart, 2001). Thus, a key challenge for a new venture is how to accomplish development despite the difficulties associated with resource scarcity; in particular where the initial resource base consists solely of the entrepreneur utilizing what is at hand or embedded locally. This thesis explores the idea that entrepreneurs practice a process of bricolage, or entrepreneurial resourcefulness, in applying available resources to craft, “create or enact” (Zahra, Sapienza, & Davidsson, 2006, p. 937) workable solutions to problems and opportunities. It has been suggested that the entrepreneur has “the ability to create

something from nothing” (Timmons, 1989, p. 1). Cast as operating within an environment characterized by severe resource constraints, usually financial, some entrepreneurs are seen to embrace and pursue such challenges “despite their inability or refusal to attract the new resources these challenges seem to demand (Baker & Nelson, 2005, p. 329). The ‘resourceful’ entrepreneur will “find a way” (Stevenson & Jarillo, 1990, p. 23) and “make it happen” (Sarasvathy, 2004a, p. 519).

Bricolage as a stand-alone construct has only recently become an object of organizational study (Baker, 2007) and this study extends current thought on bricolage by examining the practice within New Zealand. Bricolage is a concept that would seem to have particular resonance with the New Zealand context. As a geographically isolated small country, New Zealand offers considerable potential for entrepreneurs to be innovative with resources. Lévi-Strauss (1966) conceptualized this process of “bricolage” referring to a bricoleur as someone capable of improvisation because his tools and materials were always finite and could “be defined only by [their] potential use... they represent a set of actual and possible relations; they are ‘operators’ but they can be used for any operations of the same type” (Lévi-Strauss, 1966, p. 18).

In this way bricolage has potential to relate to a concept dear to the New Zealand psyche; that of Number 8 (No. 8) wire ingenuity which holds that anything can be made or fixed with basic or everyday materials, such as No. 8 fencing wire, the wire gauge that is used to fence New Zealand farm land. ‘No. 8 wire ingenuity’ has become an iconic, if metaphorical, description of Kiwi ingenuity and national character. Metaphors, where the characteristics of one thing are attributed creatively to another, have previously been shown to be a rich repository of socially constructed meanings (Anderson & Drakopolou Dodd, 2009; Nicholson & Anderson, 2005) and the No. 8 wire ingenuity metaphor has done much to construct how we New Zealanders see ourselves. In many ways ‘making do’ and No. 8 wire ingenuity seems to strike a chord with our innovativeness as a nation (Bridges & Downs, 2000). It also resonates with our culture, defined as “an interpretive framework through which individuals make sense of their own behaviour, as well as the behaviour of collectives in their society” (Lounsbury & Glynn, 2001, p. 546).

To better understand the design process I draw on empirical data from semi-structured interviews with fourteen entrepreneurs using a phenomenological perspective. I asked each entrepreneur to tell me about their opportunity and also used two “grand tour” questions (Taylor & Bogdan, 1998, p. 102), in this case phrased in metaphors, in order to draw rich descriptions of how each entrepreneur perceived their business opportunity and their resource use. The stories elicited provided a wealth of individual experience and also highlighted the varied nature of initial resource endowments in venture development. From these stories I was able to construct narratives and extract themes to show the intertwined relationships between the entrepreneur and resources, and the entrepreneur and opportunity. From these intertwined relationships, the nature of the design process was revealed.

This chapter is organised into seven sections. Following this section I trace the pathway I navigated to formulate the research questions, providing insight into how I approached the opportunity and resource connections within the rubric of design. Section 1.3 presents the research questions. Section 1.4 provides a brief overview of entrepreneurship within the context of New Zealand. The next section outlines the parameters of the four key definitions I have used in the study. Section 1.6 discusses the research approach I use. The concluding section outlines the structure of the thesis.

1.2 Navigating to the research questions

My initial interest behind this study stemmed from my desire to understand the process of entrepreneurship and how it can be better understood as a key component in society. In particular this arose from a keen personal interest in enterprise development and the role for the small entrepreneurial business in New Zealand’s economic development. Having commenced academic study with a view to completing a degree and starting my own business I found myself personally rewarded by academic development and keen to continue further scholarly pursuits in those subjects that had most sparked my interest.

My postgraduate research was centred around entrepreneurship and enterprise development and policy as I sought to establish whether government policies aimed at

‘picking winners’ in the small and medium enterprise (SME) sector actually delivered the growth outcomes desired (Baeyertz, 2004) and my interest has been maintained as I watch some of the entrepreneurs I interviewed succeed on national and international levels. I wanted to continue within the SME and economic development sphere for my doctoral research because New Zealand is a nation of small businesses with SMEs accounting for 97% of New Zealand businesses (Ministry of Economic Development, 2009)¹. Simultaneously, my interest in researching design was prompted by its incorporation into New Zealand government policy - the 2002 Growth and Innovation Framework (GIF).

1.2.1 Design as an enabler

The Growth and Innovation Framework vested design with being “a key enabler for added value across the creative industries and industry in general” (Ministry of Economic Development, 2003, p. 19). Design was promoted as a means of maximizing the impact of these industries across the economy with concomitant flow through to improved performance in the global marketplace. New Zealand’s need for economic transformation to a knowledge economy recognized that “increasingly, what’s in our heads is becoming as valuable as what is in our paddocks, our forests and oceans” (Bradford, 1999, p. 3) and the creative industries, of which design is a sub-sector, entered the discussion of economic development by virtue that “it may be the generator of innovation and hence the precursor of technological change” (Throsby, 2001). Design was declared “an enabler for business, driving innovation, creativity and efficiency” (New Zealand Trade and Enterprise, 2004/2005, p. 2).

A preliminary appraisal of the literature revealed that although there was considerable documentation of empirical research into design and its uptake within the product development arena, there did not seem to be any clear indication as to how design

¹¹ There is no universally accepted definition of an SME. New Zealand government agencies define an SME as having fewer than 19 employees. Of these organizations, 89% have 5 or fewer employees and 68% have no employees (Ministry of Economic Development, 2009). An alternative statistic is that used by the N.Z. Centre for SME Research. In this case those enterprises employing fewer than 5 Full Time Employees (FTEs) are termed micro enterprises. Small enterprises employ between 6-49 FTEs and medium enterprises between 50-99 FTEs (Cameron & Massey, 1999).

acted as a ‘key enabler’ (section 3.2. elaborates further). Enabling technologies were considered to be important factors in the economic growth equation, with the integrated circuit (microprocessor) appearing to head the list in the 20th century (DuPrau & Tyson, 1986). However, although design was deemed to be an essential element in lifting innovation and creativity there appeared to be no evidential linkage as to how design moved beyond being simply a factor in improved product development.

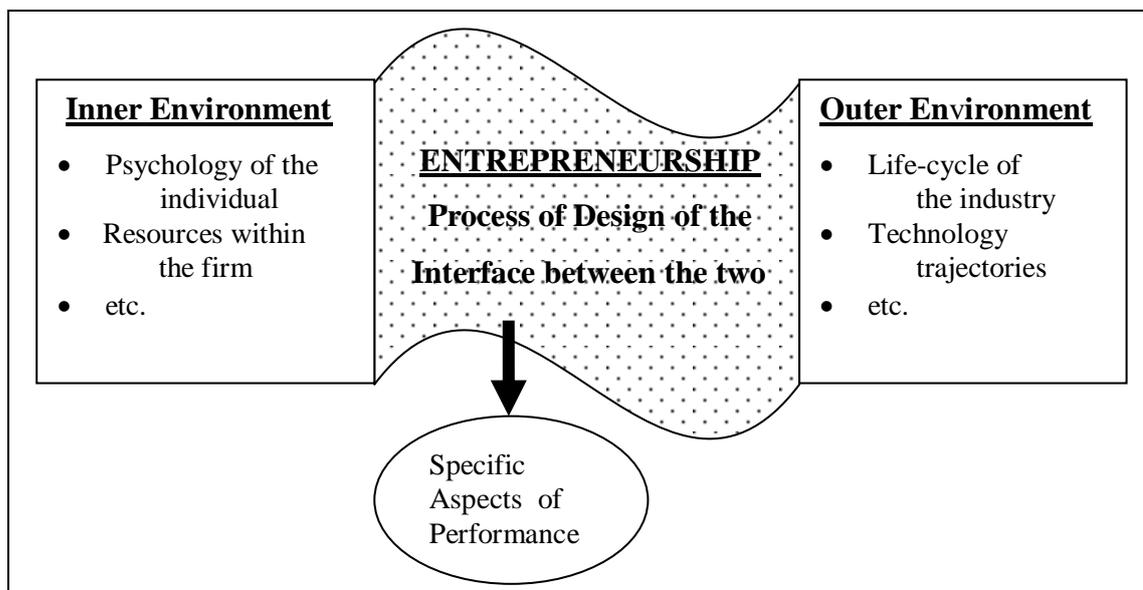
1.2.2 Design as a process

Further investigation of the design literature influenced consideration of design in a different light. My evolving perspective of design shifted from design as an enabler to design as a process. This happened as I came upon the work of Herbert Simon and his book *The Sciences of the Artificial* (1969). The enticing design proposition I found within its pages was that “everyone designs who devises courses of action aimed at changing existing situations into preferred ones” (Simon, 1969, p. 55). From there a cited reference search led me to the prolific work of one of his PhD students, Saras Sarasvathy and in particular her argument that entrepreneurship was both a science of the artificial (2003) and a design process (2004b). A framework developed by Sarasvathy (2004b) illustrates how entrepreneurship is a design process and is reproduced in Figure 1.2. I found the framework to be a useful tool in organizing my initial thoughts about the nature of the design process. Its depiction of entrepreneurship as a linking mechanism subsequently helped bring me to the overarching research objective of my study.

Figure 1.2 portrays entrepreneurship as integrally a design process linking the ‘inner environment’ with the contextual factors of the ‘outer environment’ which in turn has consequences for venture growth. Aspects of the inner environment include the entrepreneur’s “traits, tastes and abilities, the knowledge corridors they are in, and the social networks they are a part of” (Sarasvathy, 2003, p. 208). Sarasvathy (2004b) is not alone in drawing attention to the inner and outer environmental interface. For instance, Julien (1998) highlights the influence of the internal and external environment and the socially constructed nature of the entrepreneurial process when he comments that “small businesses exist in symbiosis with their *environment*, in a

system of complex interrelations formed by networks of all kinds and all levels that develop within and outside the region” (Julien, 1998, p. 18, original italics).

Figure 1.2
Entrepreneurship as a Process of Design



Source: Sarasvathy (2004b, p. 715)

At this stage, I separated out the two inner and outer elements to focus specifically on the inner. The various aspects of the inner environment I realized may be encompassed together as the aggregate of the existing resources on hand for the entrepreneur or, as Firkin (2003) would put it, the entrepreneur’s ‘entrepreneurial capital’. This then suggested to me that in effect, an entrepreneur’s exercising or leveraging of their resources is an integral part of the design process.

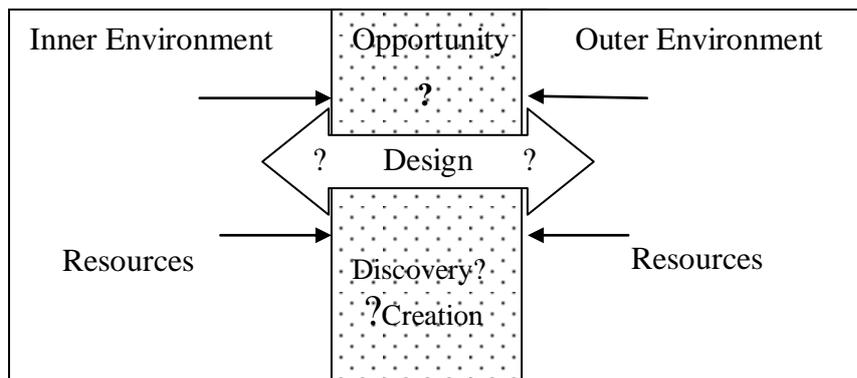
However, there still remained a niggling question at the back of my mind which related to the prominence of opportunity within the entrepreneurship literature. Opportunity is thought to be central to entrepreneurship (Shane & Venkataraman, 2000; Venkataraman, 1997) and this suggested to me that the design process could not be divorced from consideration of opportunity. Given that design is the interface of the inner and outer environment, the question I pondered then was: does ‘opportunity’ reside in the outer environment or is it in the inner environment? In

pondering this question, my thinking was influenced by the two strands emerging in recent opportunity literature – the contrasting discovery and creation views of opportunity (c.f. Alvarez & Barney, 2007). I began to believe there was a gap in the literature which explored the design process in relation to opportunity. This fuelled my imagination. From that point I realized that I had two parallel inquiries in my mind. Not only was I interested in design as a process in relation to resources, but I was simultaneously interested in differing conceptions of opportunity and whether it forms in the inner or outer environment. I had also moved on to consider the outer resource environment.

Figure 1.3 captures the essence of my questioning. It depicts two resource environments. The inner resource environment consists of those resources that form the entrepreneur’s initial entrepreneurial capital. The outer environment is where external resources can be accessed to augment and develop the entrepreneurial capital. I emphasise that this is a narrower interpretation than Sarasvathy’s (2004b) conceptualization, since my ‘outer environment’ is confined to the entrepreneur’s external resource domain.

Figure 1.3

The Design-Resource-Opportunity Connection: Asking the Questions



1.3 The research questions

In this way I had now navigated my way through some key literature, to an overarching research question which is also reflected in the title of my thesis:

What is the design-resource-opportunity connection?

Within this overarching question, I needed to understand the nature of two central relationships: the nature of the relationship between design and resources, and the nature of the relationship between design and opportunity. This led to separating out two main research questions:

1. *How does an entrepreneur exercise resources within the design process?*

2. *How is opportunity connected to the design process?*

Within each of these questions, sub-questions emerged.

First, in the resources domain, I had come upon the work of Baker and Nelson (2005) on bricolage. Additionally, Sarasvathy's earlier work on effectuation, had also implicitly encompassed a similar notion that an entrepreneur uses any and all means at hand to realise an opportunity (Sarasvathy, 2001a). For example, Sarasvathy (2001a, p. 259) posits that "any specific firm is only one of many possible viable and contingent combinations of a given set of means with which the entrepreneur begins". She argues that an effectuator is:

An imaginative actor who seizes contingent opportunities and exploits *any and all means at hand* to fulfil a plurality of current and future aspirations, many of which are shaped and created through the very process of economic decision making and are not given a priori. (Sarasvathy, 2001a, p. 262, added italics)

If realising an opportunity is contingent upon 'making do' with an existing resource base, or, as posited by a number of academics (e.g. Alvarez & Barney, 2007; Baker & Nelson, 2005; Sarasvathy, 2001a) even creating the opportunity by utilizing existing resources, I wished to investigate how this entrepreneurial process manifested itself. The proposition from Baker and Nelson (2005) is that entrepreneurs refuse to enact environmental limitations by making do with the resources at hand. They suggest bricolage might enable entrepreneurs to explore and exploit new opportunities that "might appear too expensive to pursue through other means" (Baker & Nelson, 2005, p. 357). This intriguing suggestion, and the concept of bricolage, had immense appeal to me as I felt it had particular relevance to New Zealand. It may be argued that New Zealanders see themselves as adept at making do with what is at hand, the

No. 8 wire approach, in effect “using tools that themselves were unexpected recombinations of existing repertoires” (Weick, 2003, p. 69). To me, the comment that as “New Zealanders, we have to make do, and we’re used to doing things on the smell of an oily rag” (Stuart, 2008, April 5), personifies the Kiwi way.

The concept of bricolage and its apparent fit within the New Zealand context thus brought me to the resource-related sub-question in this study:

1.2 Does an entrepreneur make do with existing resources by practising bricolage, or do they seek additional resources?

With the investigation of this sub-question, I also anticipated that I might find answers to two corollary questions.

1.2.1 Does Kiwi ingenuity (the No. 8 wire mentality) play a role in the process of bricolage?

1.2.2 Can bricolage be thought of as an entrepreneurial capability?

The two main questions of this study are of course not divorced from each other. I separated out the two strands in my overarching research question both for clarity and ease of understanding. In fact, interdependent relationships epitomise the very nature of my study. For instance, there are inter-connections not only between the entrepreneur and opportunity, as posited by Sarason et al. (2006), but also between the entrepreneur and resources. Each component is both the medium and the outcome of the relationship; effectively two sides of the same coin. Sarason, Dillard and Dean (2010; see also Gartner, 1989) illustrate the interdependent nature of the relationship between the entrepreneur and opportunity with the analogy from Yeat’s (1956) poem, and the question, how can we know the dancer from the dance? This question had in a round-about fashion, led me to the sub-question within the second main question of the study:

2.1 Does the opportunity exist prior to commencement of the design process, or is it a part and parcel of the design process?

1.4 The New Zealand entrepreneurial landscape

Make a list of “Kiwi traits”: We’re enterprising on the smell of an oily rag, twist that number eight wire into rockets if we have to, unfazeable, unflappable, funny. We tell ourselves this stuff often enough and then, gee, there are moments when national stereotypes really *do* step in to help propel creative New Zealanders to the top of their industry and the world. (Smith, 2006, p. 34)

My research questions, outlined in the previous section, were strongly influenced by the New Zealand context. The quotation at the commencement of this section aptly illustrates the cultural background that underpins Question 1.2.1 which linked bricolage to the perceived New Zealand psyche of Kiwi ingenuity.

Inclusion of New Zealand for the first time in the 2001 Global Entrepreneurship Monitor (GEM), was interestingly aimed at revealing the “nature of entrepreneurship as a social and economic phenomenon in the New Zealand context” (Frederick & Carswell, 2001, p. 16). The report confirmed that New Zealanders were highly entrepreneurial. New Zealand was one of the most entrepreneurial countries in the world, with the measure of early stage entrepreneurial activity - Total Entrepreneurial Activity (TEA) being 18.2 percent of the adult population². This snapshot revealed that as the least populated country participating in the GEM, New Zealand had the highest proportion, or 420,000 adult New Zealanders, who were trying to start a business. Of these, 82 per cent were ‘opportunity-entrepreneurs’ who identify and exploit opportunities against a figure of 55 per cent of entrepreneurs world-wide who fell into this category. By comparison, ‘necessity entrepreneurs’, those who start their own business in response to job loss or redundancy were a mere 17 percent, as against 42 per cent globally. The words of a sponsor of the first report are salient to my study: “... New Zealand entrepreneurs ... spot ideas that others miss. They’re blessed with energy, self-belief, and the No. 8 wire Kiwi ingenuity” (Lowndes, in

² The top five countries in 2001 in Total Entrepreneurial Activity (shown in percentage rates) were Mexico (18.74), New Zealand (18.2), Australia (16.21), South Korea (14.85) and Brazil (14.21) (Frederick & Carswell, 2001).

Frederick & Carswell, 2001, p. 5). Thus, innovation and ingenuity are considered an integral part of the Kiwi national culture.

The 2003/2004 GEM is the most recent³ with New Zealand data. This survey included new information on Firm-level Entrepreneurial Activity (FEA) and this indicator showed “when a firm is introducing innovative products and services into the market place and has expectations of firm growth” (Frederick, 2003-2004, p. 21). According to FEA, 16.82 per cent of existing New Zealand firms judged themselves to be high-growth potential entrepreneurial firms providing 17.3 percent of New Zealand’s employment. Once again New Zealand was within an upper quartile of entrepreneurial countries.

1.4.1 Historical background

New Zealand’s history of pioneering settlement is credited as being the reason for a high level of entrepreneurial behaviour. New Zealand is a nation of pioneers and the pioneer settler is “an enduring identity within the narratives of New Zealand’s national culture” (Jones & Boon, 2007, p. 12). Elizabeth (2006, p. 58) comments that our pioneering past is being cast as “the basis of New Zealand’s ingenuity and, just as importantly for the new innovative economy, New Zealander’s entrepreneurial spirit”. We like to think of ourselves as enterprising; a ‘doing-oriented’, ‘No. 8 wire’ ingenuity, ‘can do’ sort of country where building something out of nothing and making do with what we have is part of our nation’s DNA. Stirring stories abound about Kiwi ability to extricate themselves from seemingly impossible resource constraint with No. 8 wire type resourcefulness (Bridges & Downs, 2000).

Early European pioneers arriving on New Zealand’s shores were driven by a desire to build a better life, willing to act on their own resources and take charge of producing their own income via entrepreneurial activity, mainly agriculture related activity. New Zealand has an established reputation for inventive ingenuity. In 1900 the country had the highest number of patent applications in the world, and even by 2006 New

³ New Zealand ceased to participate in GEM after this.

Zealanders ranked fourth, in proportion to GDP,⁴ in filing patent applications. There are suggestions, however, that rather than being an enabling characteristic, Kiwi ingenuity may act as a constraint. For example, Jones (2001, p. 139) points out that such resourcefulness is “located in a nostalgic past of rural and engineering based industries”. Nevertheless its usefulness as a metaphor indicating a type of resourceful inventiveness continues to be prevalent in the media.

1.4.2 Incubators

In section 1.2.1 when I discussed design as an enabler, I mentioned it in relation to the 2002 Growth and Innovation Framework (GIF). Within GIF and its implementation, incubator networks have featured as a means of supporting high growth potential start-up businesses (Cunliffe, 2004). In New Zealand therefore, in parallel with many other countries⁵, business incubators have become an increasingly popular policy instrument for economic and employment development. Bergek and Norrman (2008, p. 21) suggest that an advantage of incubators is the use of a shared locality because “it provides opportunities for knowledge transfer and experience sharing between the incubatees”.

In New Zealand incubators fall under the jurisdiction of the Government’s economic development agency, NZ Trade and Enterprise. Prior to the introduction of the Incubator Support Program in 2001 only one tenanted incubator existed. Over the intervening period a number of other incubators have been established, disbanded, failed and/or been incorporated into existing models. The country currently has eight business incubators, of which seven receive funding from the Incubator Support Programme. The incubator that falls outside funding guidelines does not target high growth businesses. The Incubator Support Programme has two mechanisms with an overall objective of enhancing the survival and growth of early-stage businesses. The

⁴ <http://www.teara.govt.nz/en/inventions-patents-and-trademarks/1>.

⁵ For example, in North America the number of incubators have grown from twelve in 1980 to eleven hundred, twenty years later and the National Business Incubation Association (NBIA) based in America, reports that it represents 1900 members in over 60 nations (<http://www.nbia.org>).

first mechanism is a dedicated unit within the Ministry of Economic Development and the second is the establishment of Incubator Awards. These are merit-based financial incentives awarded to the incubators themselves to encourage the development of best practice processes and services. Between 2001 and 2008, 19 incubators received \$16.73 million in award funding.

Incubators in New Zealand are currently confined to five major centres and all have linkages with universities, either directly or through collaborative umbrella incubator arrangements. All seven of the incubators that receive award support are technology incubators, where technology is based on the practical application of science to industry. Three are sector specific, targeting information and communications technology (ICT), biotechnology or the creative industries. This is in line with sector targeting initiatives of the 2002 Growth and Innovation Framework.

Under the Incubator Support Programme incubators target start-up and early stage innovative companies with “high-growth international potential”. These residents are seen to have the potential to develop “unproven markets or technology” which means their “value proposition can be difficult to quantify...the market approach and the environment of entrepreneurship that is cultivated within an incubator help to reduce the system and market risks that affect these firms” (Ministry of Economic Development, 2008, p. 9). The Government believes that by association with universities, incubators increase the likelihood that their high growth technology residents are viewed as “good investment opportunities” (Ministry of Economic Development, 2008, p. 9). By implication, these investments then contribute to New Zealand’s economic transformation. However, the Ministry considers incubators in New Zealand have reached a critical mass and suggests there may be an end to Incubator Support Programme funding in 2015/2016.

This section has provided a brief overview of entrepreneurship chiefly within the context of Kiwi ingenuity and the historical background of early pioneering influences. Government policy with regard to the New Zealand incubator industry has also been highlighted mainly because the interviewees for this study, with the exception of a single entrepreneur, were associated with an incubator. Having briefly

set out the background to my research, I now move on to defining the key terms of relevance to my study.

1.5 Definitional signposting

In order to explore the design process by which an entrepreneur links resources and opportunity, it is necessary to establish the way I use the four core terms: the entrepreneur and the process of entrepreneurship; design; resources; and opportunity. Without some signposting the meanings of these words are somewhat equivocal and the need to define key terms is central to advancing academic debate (Bygrave & Hofer, 1991). This is a stance that is distinctly positivist requiring that *a priori* we must define what we are going to study as if there is an objective reality just waiting to be systematically operationalized. This study is not positivist but seeks to describe and understand and the definitions proposed take a constructivist stance. Therefore, the way I have chosen to define these core terms can be described as transitional; as a means to an end but not the end itself. In this way the definition becomes “a theoretical tool, or a construct according to the objectives pursued” (Bruyat & Julien, 2001, p. 167) rather than as a means of establishing positivist regularities.

1.5.1 *The Entrepreneur and Entrepreneurship*

Entrepreneurship remains an elusive concept, both a descriptor and an explanation for change and development and progress so that in a modernist sense tomorrow will be better than today (Anderson & Starnawska, 2008). As such the boundaries of entrepreneurship, as both practice and a research discipline are blurred (Grant & Perren, 2002). Low and Macmillan (1988) uncovered six differing specifications for entrepreneurship research and researchers continue to operationalize it in different ways contributing to the diversity of ways in which entrepreneurship is understood. Indeed it has been suggested that the only consensus is what entrepreneurship is **not**:

A static entity that is the preserve of elite individuals with specific personality traits or characteristics. Instead a multifaceted, dynamic understanding of entrepreneurship is emerging that presents challenges to research, breaks with functionalist positivism and calls

for constant review of epistemological and ontological presumptions.
(Parkinson & Howorth, 2008, p. 287)

This clearly makes it difficult for researchers who are required to define the subject being covered when after more than two decades of research no universally accepted definition of entrepreneurship exists.

Taking into account the inability of researchers to agree on a definition of an entrepreneur, Gartner's (1985) seminal contribution shifted focus from the entrepreneur to the phenomenon of new venture creation. Within the conceptualization were four elements: the individual, the organization they create, the environment in which they operate and the process by which the venture is created. Accordingly many researchers have turned their attention to the processes involved in entrepreneurship. For instance, Low and Abrahamson (1997, p. 437) define entrepreneurship as a "new venture creation process". There is agreement that this process includes "the behaviours of individuals as they identify and create opportunities leading to the emergence and growth of an organization, and encompasses industry emergence, new venture team formation, wealth creation, and organizational transformation" (Brush, Duhaime, Gartner, Stewart, Katz, Hitt, Alvarez, Meyer, & Venkataraman, 2003, p. 311). Kuratko and Audretsch (2009, p. 3) also believe that entrepreneurship is a process that includes: "initiative taking, the organizing or reorganizing of social economic mechanisms to turn resources and situations to practical account, and the acceptance of risk of failure". By bringing resources into the process we can also introduce aspects of Schumpeter's (1934) theory of economic development where the dynamic entrepreneur is the person who innovates; who makes "new combinations". Importantly, introducing new combinations of resources can be achieved in several ways. The newness might be in exploration of resources, in new ways of exploiting resources and in new combinations of what has already been used or done. Thus this newness in combining resources is argued to exist "in all entrepreneurial action and in this way, "the entrepreneur then becomes the medium by which the phenomenon is made visible" (Holmquist, 2003, p. 81). In this way, the 'who' is no longer the primary focus (Gartner, 1989). Instead the focus switches to the entrepreneurial actions implicit in the combination of resources that importantly, generate entrepreneurial outcomes (Mosakowski, 1998).

Anderson and Starnawska (2008) argue that there has been a move towards conceptualizing entrepreneurship rather than defining it. For example, Low and Abrahamson (1997, p. 437) assert that the entrepreneurial process is underpinned by two central assumptions; firstly it is a social process because it “takes place over time, involves multiple parties whose behaviour has to change in some manner for the organization to emerge, and that it is fundamentally a process of enactment”. The second assumption is that this social process varies by context because of the nature of the enactment process. This is because what is perceived by one entrepreneur may not be perceived by another entrepreneur, and also because what works in one situation or context may not work elsewhere. Thus, it is context dependent. Johannisson (2002) alludes to entrepreneurship resulting from an interaction between internal and external forces whereas Steyaert (1997, p. 22) suggests an entrepreneur is the “creator of new realities walking on the boundary between destabilizing existing situations and actualizing implicit possibilities into new contexts”. In other words, the essence of entrepreneurship is about enacting new realities, “transforming ideas into new ventures, and transposing old ideas into new situations” (Anderson, 2005, p. 154).

My decision to focus on the entrepreneur rather than the organization created has been motivated by Sarasvathy’s (2004a, p. 522) contention that existing theories of the firm that focus on survival and performance are framed within dialogues of market forces, industry dynamics or population ecology, with the entrepreneur simply an instrument that “delivers preconceived outcomes”. Her suggestion to counteract this prevalent view is to place the entrepreneur centre stage which allows the firm to become “an instrument in the toolkit of the entrepreneur, rather than casting the entrepreneur as always in the service of firm survival” (Sarasvathy, 2004a, p. 522). Additionally, instead of an entrepreneur being “a describable species that one might find a picture of in a field guide” (Gartner, 1989, p. 48), this perspective focuses attention on what an entrepreneur actually does.

For operational purposes the entrepreneur will be defined here as the *founder* or *creator* of a new venture. From a conceptual point of view, this thesis views entrepreneurship as the *design process* by which an entrepreneur interacts with the environment linking resources and opportunity together in new venture creation.

1.5.2 Design

Design terminology is somewhat complicated by the fact that *'design'* can be both a verb and a noun, therefore referring to either the process or the end product. This leads to a situation where the terms are diluted to the point where “they potentially include so much that they no longer clearly define anything” (Love, 2002, p. 355). The Oxford English Dictionary (1989) explains that *'design'* originates from 16th century Latin, from *dēsīgnāre* to mark out, trace out, or denote. The verb in the 16th century was used in the sense “to designe, contriue, plot, purpose, intend; also to draw, paint, embroither, modle, outrary” and the English word for design has come to combine all these senses. Thus, a definition in the hard copy of the Collins Concise Dictionary (1999) of the verb *'design'* is: “1) to work out the structure or form of (something), as by making a sketch or plans; 2) to plan and make (something) artistically or skilfully; 3) to invent; 4) to intend, as for a specific purpose, plan”. The Merriam-Webster Online Dictionary (2008) has an extended conception of the verb *'design'*: “1) to create, fashion, execute or construct according to plan [devise, contrive]; 2a) to conceive and plan out in the mind, b) to have as a purpose [intend], c) to devise for a specific function or end; 3) to indicate with a distinctive mark, sign or name; 4a) to make a drawing, pattern or sketch of, b) to draw the plans for”.

From these various definitions of the verb one can surmise that design is a human endeavour comprising a number of constituents: It has an inherent purposefulness; it is anticipatory and oriented towards the future; and it would seem to demand a certain level of proficiency in order to get it done (Lyytinen, 2004). This concept of design as forward looking with an underlying thread of change is a key strand identified by Herbert Simon (1969, p. 55) who argued that “everyone designs who devises courses of actions aimed at changing existing situations into preferred ones”. In my view this situates design as a human activity; a linking process between the here and now and there; some point in the future. For the purposes of this thesis, I use the term *'design'* to describe this linking process. Entrepreneurs exercise or practice this *'design process'* in an attempt to “respond to, and thereby change, a set of circumstances (perceived in a positive or negative light) with a view to creating a desired outcome” (Chell, 2000, p. 71). The literature on design is reviewed in chapter three.

1.5.3 Resources

The third signpost sets the boundaries for how I use the word resources. Although the resource literature will be reviewed in section 2.3, this particular segment explains my own use of 'resources' for the purposes of this study. The Oxford English Dictionary (1989) variously defines resource (usually plural) as "a stock or supply of money, materials, staff, and other assets that can be drawn on by a person or organization in order to function effectively; the means available to achieve an end, fulfil a function, etc. a stock or supply that can be drawn on". Resources are typically broken into two fundamental categories: tangible and intangible resources. Whereas tangible resources might be found on a balance sheet in the form of financial and physical assets (Grant, 1991), following Hall (1992), intangible resources range "from the intellectual property rights of patents, trademarks, copyright and registered design; through contracts; trade secrets; public knowledge such as scientific works; to the people dependent, or subjective resources of know-how; networks; organizational culture, and the reputation of product and company" (Hall, 1992, p. 135). We can therefore consider the entrepreneur as a key resource; embedded with resources in the form of entrepreneurial capital.

Bourdieu (1986) classified individuals as possessing four forms of capital: economic, social, cultural and symbolic. Building upon this conceptualization, Firkin (2003) developed a model of entrepreneurial capital which comprised five resource components: economic, human, social, cultural and physical resources. More recently, papers by Shaw, Lam and Carter (2008) and Stringfellow and Shaw (2009) have highlighted the importance of symbolic capital to venture founders. I draw upon their valuable contribution and incorporate symbolic capital into my conceptualization of entrepreneurial capital, together with organizational and technological capital. Entrepreneurial capital is reviewed within the literature in chapter 3, section 2.3.3.

For the purposes of this thesis, resources are those tangible and intangible resources that I incorporate into the construct of entrepreneurial capital. This acknowledges that a lack of resources may be a weakness or a constraint and sits well with the notion of bricolage. How an entrepreneur overcomes resource constraints by making

do, or bringing together and assembling new combinations (Schumpeter, 1934) of resources is part of the design process I am exploring.

1.5.4 Opportunity

Opportunity as the fourth signpost is fraught with challenge, but largely from a disciplinary standpoint at the ontological and epistemological level. Those from a positivist standpoint have an ontological assumption that views reality as external and objective; and secondly an epistemological assumption that knowledge is only significant if it is based on observations of this external reality. For example, Shane and Venkataraman (2000) argue that a general theory of entrepreneurship should encapsulate the discovery, evaluation and exploitation of opportunities. This standpoint reflects a view that opportunities exist in the world in some objective sense waiting to be recognised. It is a view that hinges on the view of an entrepreneur “not as a source of innovative ideas *ex nihilo*, but as being alert to the opportunities that exist already and are waiting to be noticed” (Kirzner, 1973, p. 74). In this context Venkataraman’s (1997) seminal article on entrepreneurship has been influential because he argues that “there is always a supply of lucrative opportunities to enhance personal wealth, and a continuous supply of enterprising individuals seeking such opportunities” (Venkataraman, 1997, p. 121). This continues to imply that opportunity exists independently from the entrepreneur, who simply needs to sequentially identify and exploit the said opportunity.

An alternative standpoint is that reality is not objective and exterior but is socially constructed and given meaning by people. Therefore opportunities do not exist as independent entities but are created, endogenously, “by the actions, reactions, and enactments of entrepreneurs exploring ways to produce new products or services” (Alvarez & Barney, 2007, p. 15). Their view posits that opportunity does not evolve out of pre-existing industries or markets, but that the actions of an entrepreneur are the “essential source” of these opportunities. That is to say, opportunities do not exist before they are created and “cannot be understood until they exist” (Alvarez & Barney, 2007, p. 15). I will explore these philosophically divergent views of opportunity further in section 2.4 but for my purposes, which is to explore and develop understanding of how opportunity development is actually experienced in the

“liveliness of everyday life” (Steyaert, 2007, p. 461), opportunity will be defined as “a future situation which is deemed desirable and feasible” (Stevenson & Jarillo, 1990, p. 23). It is therefore a concept that finds its meaning in the context of human action (McMullen, Plummer, & Acs, 2007).

1.6 Research approach: Towards *Verstehen*

The entrepreneurship literature is dominated by the positivist empirical inquiry. My research approach “rejects the view that the world of human affairs can be studied in the manner of the natural sciences” (Burrell & Morgan, 1979, p. 253) and operates from an assumption that knowledge can only be created and understood from the point of view of the individual, in this case both the entrepreneur and myself as the researcher. The theoretical perspective of interpretivism suggests that the study of human sciences should therefore be concerned with *Verstehen*. This German word signifies “understanding” and “interpretation” of human action and behaviour and is “essential to the generation of an adequate interpretation of a given social phenomenon ... and thus requires a distinctive epistemological and methodological approach” (Steyaert, 1997, pp. 26-27). Essentially it is concerned with the nature of reality in the social world where, in contrast to the natural world, human ‘subjects’ of the social world “possess the ability to think for themselves, comprehend their own behaviour and have an opinion about the social world of which they are a part” (Shaw, 1999, p. 60). This *Verstehen* approach therefore accepts that human and social science require different methods to those of the natural sciences which has led to the advocacy of qualitative methods of inquiry which are “uniquely suited to uncovering the unexpected and exploring new avenues” (Marshall & Rossman, 2006, p. 38). This research explores such an avenue.

Boosted by arguments that suggest we utilize less “accepted” methods of research to broaden our knowledge on entrepreneurship (de Bruin, Brush, & Welter, 2007) I draw upon the phenomenological tradition to explore how entrepreneurs talk about their opportunities and their resources. Cope (2005) raised interest in adopting a phenomenological approach for entrepreneurship research. He explains that instead of being located within the scientific method’s ‘context of justification’ a key differentiating aspect is its location within the ‘context of discovery’, whereby

theoretical propositions emerge from the descriptions of experience given by those individuals under investigation. Phenomenological methods are ideally suited to “capture and communicate the meaning of entrepreneurs’ experiences in everyday life” (Berglund, 2007b, p. 80). Phenomenological interviews and Interpretive Phenomenological Analysis (IPA) have been used as methods by Cope (2001) and Berglund (2005) in their doctoral theses. Interpretive Phenomenological Analysis is a specific analytic method which involves detailed examination of the entrepreneur’s “life world” with no attempt to test a predetermined hypothesis but rather a flexible exploration on the area of concern (Smith & Osborn, 2003). In this way the experiential expert, in this case the entrepreneur who has experienced the founding of a new business venture, can be given the maximum opportunity to “tell their own story” (Smith & Osborn, 2003, p. 57). This approach should help plug gaps in existing knowledge about the entrepreneur, opportunity and resources and the links or connections between them. The research approach I have adopted is detailed further in Chapter three.

1.7 Structure of the thesis

This thesis is structured as follows. Chapter one discusses the scope and aim of the study, the background to the research and the research questions, the need for the study and the research approach I have used. It also briefly overviews the New Zealand entrepreneurial landscape with respect to our pioneering past and how these past influences are encapsulated within our perceived ‘Kiwi ingenuity, No. 8 wire’ psyche. Mention is also made of the role of incubators within the New Zealand enterprise policy context.

Chapter two addresses the literature within the three major streams of the thesis; design, resources and opportunity. The links between design and economic performance are touched upon. In addition the literature that has influenced the uptake of design in the thesis is introduced. The resources stream of the literature develops two strands that are central to the thesis. The first strand is entrepreneurial capital and the section explores the literature on the various forms of capital in relation to the process of entrepreneurship. The second strand of bricolage is also covered. Within the final opportunity stream of literature lie the discovery and

opportunity creation views, together with the literature on structuration theory and its incorporation into opportunity research.

Chapter three details the methodological pathway and research approach I have taken. It describes and justifies the qualitative approach adopted to guide the exploratory study into the design process by which an entrepreneur links resources and opportunity together in new venture creation. The chapter opens arguing for an interpretive phenomenological approach as being an appropriate method with which to research the entrepreneur's actual lived experience of opportunity development and new venture creation. The sampling criteria, ethical issues and data collection and analysis are introduced.

Chapter four presents opportunity and resource narratives drawn from the interviews and weaves them into a rich tapestry of lived experience. It also presents visual resource relationship maps to portray the dynamic processes involved in building entrepreneurial capital. The chapter is brought to a close with two tables which capture the essence of the two metaphor linked questions explored in the interviews.

Chapter five introduces the broad themes that arose from the Interpretive Phenomenological Analysis to capture the meaning of the entrepreneurs' experience in opportunity and resource development. Quotations from the interview transcripts are used throughout the themes where pertinent. It also introduces two figures to portray the design-resource connection and the design-resource-opportunity connection, followed by concluding remarks.

The concluding chapter presents an overview of the thesis and its key findings. Contributions to the body of entrepreneurship knowledge are highlighted in terms of these findings. Additionally the limitations of the research are stated, suggestions for future research are outlined and concluding comment is provided.

Streams in the Literature

2.1 Introduction

The purpose of this chapter is to review the literature on the three streams significant to my thesis: design, opportunity and resources. First, within the design literature there are two strands of literature that are explored. One of these explores the link between design and economic policy. The global and New Zealand contexts are reviewed as design has been adopted by policy makers as an enabler of economic growth and innovation. The other strand of design literature has major significance as it follows the path design has taken to become a science of the artificial and its conceptualization as a design process within entrepreneurship. The second stream of literature reviews the opportunity literature to address the discovery and creation views of entrepreneurial opportunity. It also straddles the divide between these two views by incorporating the literature on structuration theory as a lens through which to view opportunity. The third literature stream reviews the relevant literature with regard to resources and the new venture creation process. There are two significant strands within the resource literature which are elaborated upon: the concepts of entrepreneurial capital and bricolage.

2.2 Design

My interest in anchoring this thesis within the rubric of design was outlined in chapter one. I explore two strands of literature on design. In the first strand I background how design has entered the rhetoric as an enabler of economic performance on the global stage and also within New Zealand's economic transformation programme. I then move on to the second strand to pick up the science of design conversation ignited by Herbert Simon (1969) and subsequently developed by Sarasvathy (2003; 2004a).

2.2.1 The global rise of design

The ascendance of the design industry commenced following the Wall Street crash in 1929. In an effort to stimulate the American economy, what was in effect ‘planned obsolescence’ was introduced as a “potent means of shortening the cycle of consumption through its emphasis on the fashionability and ephemerality of every days goods” (Woodham, 1997, p. 37). At this time differentiation between mass production models became important to consumers. As Sparke (1987, p. 13) observes “adjustments to design, like adjustments to price, were part of the successful business man’s constant effort to trim his sails to meet the slightest variations in the winds of change”. A number of notable figures re-invented themselves as industrial designers, to churn out designer goods and cater to the consumer and his aesthetic and symbolic needs. Good design contributing to improved sales figures (Woodham, 1997, p. 68). The automobile industry was responsible for the rise of these ‘consultant’ industrial designers as they sought to differentiate by introducing an aesthetic component into their mass-produced automobiles. These American consultant designers were treated as media celebrities and such was the power of the ‘signature-designers’ that the application of their names to the design of product “immediately imbued those artefacts with a level of “added-value”” (Sparke, 2004, p. 69).

The consultant design model was soon emulated by other countries as they sought to stimulate consumer appetites and, by 1939, the professional designer for industry had emerged. The closing stages of World War II saw the potential of design as a means of “gaining market edge” (Woodham, 1997, p. 171) and, as importantly, ensuring that manufacturers stayed in business. This prompted the governments of Britain, Poland, West Germany, Ireland, Japan, Sweden, Denmark, Korean and Singapore to establish official design bodies. In this way design had become a tool “available for use both by private enterprises and nations to persuade others either to consume their goods or to recognise their authority” (Sparke, 2004, p. 114). The Council of Industrial Design was established in London in 1944 “to promote by all practicable means the improvement in the products of British industry (Sparke, 1986, p. 56). This was, because manufacturers had decided “it was design itself that they were trading” (Sparke, 1986, p. 179). Illustratively, a design consultant comments:

We are entering an epoch in which only those corporations making highly competitive products will survive. This means, in the longer term, that products from major companies around the world will become increasingly similar. Inevitably, this means that the whole of a company's personality, its identity, will become the most significant factor in making a choice between one company and its products and another. (Olins, 1989, p. 9)

Thus, amidst the challenge of globalisation, branding has also become a key function of design as companies and countries seek to carve out distinctive identities for themselves and boost their economic performances.

2.2.2 Design within New Zealand's economic policy

Since the 1980s, New Zealand's economic performance has ranked below the Organization for Economic Development (OECD) average and is a far cry from the 1950s when it was estimated to have been one of the richest countries in the world (Skilling & Boven, 2005). The latest Gross Domestic Product (GDP) rankings place New Zealand 22nd out of 30 countries (OECD, 2009). As a country, New Zealand needs to improve its economic performance. The question is how?

Successive New Zealand governments have attempted to answer the 'how' question. One initiative was an extensive research project by Harvard Professors Michael Porter and Michael Enright. Utilizing the methodology employed by Porter in his *Competitive Advantage of Nations* (1985), what came to be known as The Porter Project depicted New Zealand's economic performance in light of globalization, providing evidence that the "increasing integration of the global economy, along with the rapid advances in technology have rendered standard paradigms of trade and economic success obsolete" (Crocombe, Enright, & Porter, 1991, p. 12).

The recipe for success was to move beyond exploiting our mainly agricultural resources to develop competitive advantage instead in advanced industries and industry segments where success hinges on the ability to develop and deploy technology and skills. Essentially New Zealanders were tasked to "broaden our notion of innovation to encompass not only innovation in primary production, but

also in new products, processes, marketing and logistics” (Crocombe, et al., 1991, p. 160).

In 1999, the Minister of Finance, Michael Cullen announced the government’s commitment to ‘economic transformation’ to move “from our current over-reliance on commodity production to the knowledge-intensive industries of the future... adding intelligence, creativity and technological sophistication to our production and export base” (New Zealand Treasury, 2000, p. 13). A Science and Innovation Advisory Council formed at Prime Minister Helen Clark’s bequest began to investigate how New Zealand could lift its game. The council sought input from government, business and community sectors to assist in formulation of a blueprint which would enable New Zealand to “harness our full innovation potential in bringing about a change of direction” where innovation is “about making ourselves more visible in a crowded world” (Science and Innovation Advisory Council, August 2001, Foreword).

The subsequent reports from these sectors, together with initiatives traversed in the 2001 Knowledge Wave conference, culminated in the publication of the Ministry of Economic Development (MED)’s Growth and Innovation Framework (GIF) (Ministry of Economic Development, 2002)⁶. Titled “*Growing an Innovative New Zealand*” the GIF set the direction for New Zealand’s economic transformation within a framework of economic, cultural and social strategy.

Four sector taskforces were established in the Information and Communication Technology (ICT), Biotechnology, Screen Production and Design industries. Development of these sectors was given priority because of their potential to have a material impact on New Zealand’s economic growth and because they were consistent with the vision of “a global, innovative New Zealand economy, the ‘New Zealand brand’” (Ministry of Economic Development, 2002, p. 51). The rationale being that design is “increasingly playing a significant role merging creativity and

⁶ The Ministry of Economic Development (MED) is tasked with fostering economic development and prosperity for all New Zealanders and provides advice and implements policy for the Government in relation to a wide range of economic issues (<http://www.med.govt.nz>).

innovation with products and services across a wide range of industries” (Ministry of Economic Development, 2003, p. 57). Creativity, design and innovation were accorded a role aligned with a report released in 2002 showing that top countries for design are also top countries for global competitiveness (World Economic Forum, 2002).

The Growth and Innovation Framework identified that New Zealand must “increase the value of our commodity and manufactured exports by applying more world class knowledge and innovation, and appropriate branding” (Ministry of Economic Development, 2002, p. 32). Ensuing Design Taskforce initiatives focused attention on educating and encouraging New Zealand businesses to understand and incorporate design as a competitive business strategy with branding being seen as a key differentiator in the global marketplace. Substantial government funding was invested into this design strategy which had a vision of “New Zealand design moving the world” (New Zealand Government, 2005, p. 4).

The Design Taskforce concentrated on design as a process believing it to be “an integrated process...a methodology which guides the synthesis of creativity, technology, scientific and commercial disciplines to produce unique (and superior) products, services, and communications” (Design Taskforce, 2003, p. 18). The taskforce acknowledged that “if the design industry is to progress, it needs to understand how to sell design to potential clients and how to keep them coming back for more” (Innovation & Systems, 2002, p. 5). *Integrate! A critical look at the interface between business and design* had as its brief the proposition “that design-led businesses in New Zealand add more value to the benefit of their stakeholders than businesses operating in similar spheres that are not design led” (Innovation & Systems, 2002, p. 5). Thus, good design is good business. The New Zealand Institute for Economic Research (NZIER)⁷, for example, purports that there is a “wealth of anecdotal evidence that supports the use of design as a tool for maximising business

⁷ The NZIER is a non-profit society that undertakes independent economic research in the interests of the New Zealand public, with the concomitant aim of encouraging debate on economic issues affecting the country (<http://nzier.org.nz>).

and economic performance” (New Zealand Institute of Economic Research, 2003, p. iii).

In New Zealand, ‘economic transformation’ as a political agenda has been archived following a change in Government in 2008⁸. Design lives on in the Better by Design programme, a New Zealand Trade and Industry (NZTE)⁹ initiative that developed from Design Task force recommendations. The Better by Design website states that “with so much choice available to customers, companies must ensure their products and services are meaningful and relevant. Design unlocks better business – better thinking, better approaches, and better customer connections” (New Zealand Trade and Enterprise, 2008). The Better by Design programme is overseen by ‘design-led’ experts who are tasked with assisting exporters to achieve increased growth and competitive advantage. Firms who meet the criteria can qualify for funding assistance to help with design projects. However, with one criteria being annual turnover exceeding \$20million, it is not a programme aimed at New Zealand’s dominant SME sector. Nevertheless, New Zealand’s larger brands are providing anecdotal evidence of the benefits of well designed products on the global stage to join the Apples, Nikes and Nokias of this world who have created their wealth “through design-led thinking” (New Zealand Trade and Enterprise, 2008).

This section has explored design’s rising influence as an enabler of economic performance. In the next section I move on to the second strand of the design literature to explore ‘design-led thinking’ within the science of design conversation ignited by Herbert Simon (1969) and subsequently developed by Sarasvathy (2003; 2004a).

⁸ After nine years (three Parliamentary terms) in office, Helen Clark’s Labour Party was replaced by the National Party, headed by John Key, who formed a National -led government with confidence – and-supply support from three minor parties; ACT, United Future and Māori parties.

⁹ NZTE is the Government’s dedicated economic development agency. Its role is to support and promote economic policy in order to deliver greater prosperity, security and opportunities for all New Zealanders (<http://www.nzte.govt.nz>).

2.2.3 The science of design

Herbert Simon's (1969) book, *The Sciences of the Artificial* contains a chapter from which I have borrowed this section heading and from which I draw my conception of design as those "courses of actions aimed at changing existing situations into preferred ones" (Simon, 1969, p. 55). He was intent on developing a theory of administration and it is his earlier works that set the tenor of his theory of managing as designing. His work on decision making, in particular, was situated in a time of relative management stability where feasible alternatives were well known and a "decision attitude" (Boland Jr. & Collopy, 2004, p. 4) and the analytic tools to support it were the focus of the mathematical and scientific direction of management research. This decision attitude started with the assumption that alternative courses of action were ready at hand and implicitly that the best course of action is able to be forecast. Simon's concept of decision making as a "boundedly rational process converging sequentially from the stage of problem definition towards that of final choice" has been the underlying view for subsequent empirical research (Langley, Mintzberg, Pitcher, Posada, & Saint-Macary, 1995, p. 262). However, he came to believe the neoclassical theory of analysing decisions as a process of choosing among alternatives that are known in advance to be a "wholly unsatisfactory framework" (Simon, 1993, p. 134). He was keenly interested in the new technology offered by computers which enabled him to expand his theories of decision making, noting that "as the complexity of the environment increases, or its speed of change, we need to know more and more about the mechanisms and processes that economic man uses to relate himself to that environment and achieve his goals" (Simon, 1959, p. 279). He maintained that the search for new alternatives is more commonly "a problem-solving process that seeks to discover, invent, design or assemble new products or courses of action, taking as raw materials already available principles or components" (Simon, 1993, p. 137) rather than a choice between already available alternatives. This type of problem solving process requires a "design attitude" (Boland Jr. & Collopy, 2004, p. 3).

Boland Jr. and Collopy (2004, p. 6) comment that adoption of a design attitude is "concerned with finding the best answer possible, given the skills, time, and resources of the team, and takes for granted that it will require the invention of new

alternatives”. As such, a design attitude deals with what does not yet exist. This explains Simon’s (1969) visualization of the manager as a professional whose training should follow that of an engineer or an architect in an applied science. To him, goal achievement was a contingent process concerned “not with how things are but how they might be - in short, with design” (Simon, 1969, p. xi).

Simon (1969, p. 3) explains that although today’s world is largely man-made or artificial where “almost every element in our environment shows evidence of man’s (sic) artifice”, it still exists within the laws of the natural world. Importantly these artefacts are adapted to our goals and purposes which means they must actually perform in order for us to fulfil our goals. Therefore, artificial things can be characterized in terms of function, goals and adaptation, where fulfilment of a purpose, or adaptation to a goal, requires a relationship between the purposes or goal, the character of the artefact and the environment in which the artefact performs. However, both the structure of the artefact and the environment in which it performs are influenced by natural science. For example, whether a knife will cut depends on what it is made of and what it is cutting (Simon, 1969). From this, Simon argues that the artefact is actually a meeting point, “an interface” between an “inner environment” (the structure and substance of the artefact) and an “outer environment” (the surroundings in which the artefact functions). Thus, “if the inner environment is appropriate to the outer environment, or vice versa, the artefact will serve its intended purpose” (Simon, 1969, p. 7). Extrapolating from this scenario the artefacts in entrepreneurship are the entrepreneur, representing an interface between their cognitive or mental ‘inner’ and their ‘outer’, where ‘outer’ is the rest of the world and his or her firm and the ‘inner’ constituency are the employees and owners (Ucbasaran, 2008).

Picking up this particular thread, Sarasvathy (2003) contends that the link between entrepreneurship and the sciences of the artificial necessitates design-oriented questions based on *how* new goals eventuate and *how* particular strategies shape those inner and outer environments; how they mediate the interface. To this end, Sarasvathy (2003) outlines four key ideas that are encapsulated within the sciences of the artificial within her design rubric. The first is that the natural laws constrain but “do not dictate our designs”. That is, we should focus on what we can achieve not

what we ought to achieve because there is nothing inevitable about what we do; our designs are “contingent upon our imagination” (Sarasvathy, 2003, p. 218). The second idea hinges on the notion that we should avoid any form of prediction in design. Her underlying rationale being that with no end goal to conform to it is possible to choose alternative routes that prove more judicious. Thirdly, “locality and contingency govern the sciences of the artificial” (Sarasvathy, 2003, p. 218). This means that “contingencies can be viewed as opportunities to be exploited rather than as misfortunes to be avoided” and importantly, given the contextual backdrop of entrepreneurship, “successes and failures are always local” (Sarasvathy, 2003, p. 218). The fourth key idea outlined relates to the concept of “near decomposability” whereby what constitutes a good design for a component is independent of the designs of other components. “Nearly decomposable systems are very good at exploiting both locality (necessitated by the limitations of the inner environment) and contingency (necessitated by the changing complexities of the outer environment)” (Sarasvathy, 2003, p. 213). Her central message is captured in the following passage:

The point I am trying to bring home is simple but stark. Designers of organizations design the environments we live in; and in the process they re-build the very coordinates of our existence – who we are and who we can become; what we know and what we can learn; whom we interact with and whom we can find no time for. The fallacy of an environment impervious to the designer or a world unperturbed by artefacts is often bolstered by the comforting myth of the ‘market’ that is ‘out there’ – capable of wisely sorting out wheat from chaff from the outputs of seemingly ‘intentional’ but actually ‘random’ or ‘structured’ human endeavours. (Sarasvathy, 2008, p. 168)

The next section explores the resource literature with a specific focus on resources and their deployment in opportunity development.

2.3 Resources

This section reviews the resources stream of the literature. It provides an overview of the resource-based view before exploring two strands which have significance to my thesis. The first strand explored is bricolage, the entrepreneurial process of making do with whatever is at hand, which might also be thought of as a value generating capability. The second strand is entrepreneurial capital, those initial resource stocks

that are embedded in the entrepreneur. How entrepreneurs create the capability to develop an opportunity is in turn predicated on their ability to generate value from their entrepreneurial capital. This may require practicing bricolage. Firstly, however I turn to the literature on the resource based view and its relationship with entrepreneurship.

2.3.1 The resource based view

In the literature the resource based view (RBV) of the firm developed as a counter to the prevailing strategy literature which argued that opportunities and threats could be exploited solely by the positioning of the firm in the external environment (Lockett, O'Shea, & Wright, 2008). The RBV focuses instead on the internal environment and links performance to a firm's internal characteristics. According to the RBV firms are seen as 'bundles of resources', which are defined as both tangible and intangible assets that are tied to the firm in a relatively permanent fashion (Penrose, 1959; Wernerfelt, 1984) and are seen to confer competitive advantages in and of themselves (Amit & Schoemaker, 1993; Barney, 1991).

The actual composition of these resources is not clear-cut in the literature. Various definitions are given, such as "anything that might be thought of as a strength or weakness of a given firm" (Wernerfelt, 1984, p. 84), or even as "all assets, capabilities, organizational processes, firm attributes, information, knowledge etc controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness" (Barney, 1991, p. 101). A simple definition put forward by Lichtenstein and Brush (2001, p. 37) suggests that resources are "all tangible and intangible assets that are tied to the firm in a relatively permanent fashion", or an even broader definition is proffered by Dollinger (2003, p. 26) who suggests that a resource is any "thing or quality that is useful". There is also some ambiguity as to whether capabilities should be considered as a firm resource. Although Dollinger (2003), for example, uses the terms 'resource', 'capital', and 'asset' interchangeably, resources by his definition include skills and capabilities. Amit and Schoemaker (1993, p. 35) opt to define a capability as "a firm's capacity to deploy resources, usually in combination, using organizational processes, to effect a desired end" thus

suggesting a link between the internal resources and some form of 'desired' advantage.

Wernerfelt's (1984) contention was that a firm's unique resource endowments provided greater strategic advantage. The attractiveness of an industry was instead influenced by the strengths of the firm residing in its idiosyncratic resource base. This built on the seminal work of Penrose (1959) who argued that firms with very similar sets of resources may present different offerings. In other words, resources are idiosyncratic to the uses they are put to. She clarifies that:

A firm is more than an administrative unit; it is also a collection of productive resources the disposal of which between different uses and over time is determined by administrative decision. When we regard the function of the private business firm from this point of view, the size of the firm is best gauged by some measure of the productive resources it employs. (Penrose, 1959, p. 24)

Following her argument, it is managerial decisions over the coordination of resources that provides the difference between firms, and provides the unique advantage of one firm over another. She frames the internal resources of a firm within the context of their productive services by making the distinction that it is not actually the resources *per se* but what can be done with them; in other words the services to which they can be put to use. Thus, "what an entrepreneur sees in his environment, and his ability to take advantage of what he sees, are conditioned by the types and amounts of productive services existing in the firm" (Penrose, 1995, p. 215). In addition, the environment determines its opportunities, for it must take its resources as a given "in the sense that it must recognize the limitations on what it can acquire with what it has" (Penrose, 1995, p. 217). She states, in the foreword to the third edition of her pioneering work, that "the environment is not something 'out there', fixed and immutable, but can itself be manipulated by the firm to suit its own purposes" (Penrose, 1995, p. xiii). Implicit within this is the suggestion that an entrepreneur might view the environment as containing additional resources. Thus, an entrepreneur, when faced with 'inherited' resources treats the environment as an 'image' of "possibilities and restrictions with which he is confronted, for it is, after all, such an 'image' which in fact determines a man's behaviour" (Penrose, 1995, p. 5). In other words, the RBV principally theorises that internal, idiosyncratic

resources explain the variation in success among firms competing within the same industry (Barney, 1991; Peteraf, 1993; Wernerfelt, 1984).

Penrose's (1959) work into the nature of firm's resource environments also argues that firm differences are attributable to resource use or combination. Firms with very similar sets of resources may present different offerings, in other words, resources are idiosyncratic to the uses they are put to. She writes that "firms not only alter the environment conditions necessary for the success of their actions, but, even more important, they know that they can alter them and that the environment is not independent of their own activities" (Penrose, 1995, p. 42). Denrell, Fang and Winter (2003) argue that a lack of resources necessitates the development of a set of "idiosyncratic" resources which "although not very valuable by themselves could be used profitably in combination with other resources" (Denrell, et al., 2003, p. 986). In a similar vein, Earl (2003) synthesises ideas from personal construct psychology and systems-based evolutionary economics to recast the entrepreneur as someone who makes connections. Viewing the world as a system of systems he claims that entrepreneurial behaviour "entails the construction of new systems by forming combinations that have not previously existed" (Earl, 2003, p. 114). Sarasvathy (2001b) found evidence of this when she discovered that entrepreneurs with a given set of means [resources] investigated the possible market opportunities that could be created with those means rather than first identifying the market. This is counter to Kirzner's (1973) view of the entrepreneur as a co-ordinator and decision maker whereby "he sees unutilized possibilities in the market and coordinates the internal resources of the firm to utilize these possibilities" (Sundbo, 2001, p. 12).

In a recent interview Wernerfelt stated that he believed the RBV was in its maturity stage but that there were still a number of research opportunities within it. Firstly, the origins of firm heterogeneity: "I tend to ask foundational questions, so I think the unfinished agenda of the resource based view is where do these differences come from?" (Lockett, et al., 2008, p. 1133). Secondly, the need to better understand the "nature of different resources rather than their effects" (Lockett, et al., 2008, p. 1134). The third research opportunity relates to the context and methodological approach where he thinks smaller firms with fewer resources present that are more transparent in nature would be more advantageous to study. My research addresses itself to this

latter opportunity as it explores the nature of the design process by which entrepreneurs link opportunity and resources.

A resource lens is increasingly used within entrepreneurship studies (e.g. Alvarez & Busenitz, 2001; Brush, et al., 2001; Hanlon & Saunders, 2007; Hart, Greene, & Brush, 1997) in acknowledgment of the link between entrepreneurial activity and resource mobilization. One central view of the entrepreneur has as its premise the ability to combine resources in new ways. Schumpeter (1934) described the entrepreneur as the one who combined productive factors in some new way; for example, a new product, production method or a new market. He further maintained that innovation was driven by the entrepreneur and not consumer driven. He suggested five situations where the bundling of resources by entrepreneurs to produce new resources occurs. The entrepreneur “reforms or revolutionizes the pattern of production by exploiting an invention or an untried technology for producing a new commodity or producing an old one in a new way, by opening up a new source of supply of materials, or a new outlet for products, or by reorganizing an industry” (Schumpeter, 1934, p. 132). However, this may not take into account the availability of resources to the entrepreneur with which to bring about such “creative destruction” (Schumpeter, 1942). Because new ventures, almost by definition, start from a position of few resources it is the actions taken by an entrepreneur in determining and acquiring resources that one would imagine are central to venture development and subsequent success. In this context, the practice of bricolage is suggested as an entrepreneurial capability of doing more with less.

2.3.2 Bricolage

Bricolage has been adopted in the entrepreneurship literature courtesy of Lévi-Strauss’s (1966) image of a bricoleur as someone who makes do with “whatever is at hand”. The literature on entrepreneurial bricolage is spearheaded by the work of Baker, Miner and Easley (2003) and Baker and Nelson (2005) who define bricolage as “making do by applying combinations of the resources at hand to new problems and opportunities” (Baker & Nelson, 2005, p. 333). They use the concept to refer to an entrepreneur who seemingly has the ability to create something from nothing (Timmons, 1989) and in so doing “defy conventional assumptions about the role of

the environment in determining the success or failure of organizations” (Phillips & Tracey, 2007, p. 317).

Suggestions that the essence of entrepreneurship is “the willingness to pursue opportunity, regardless of the resources under control” (Stevenson & Jarillo, 1990, p. 23) are reinforced by Morris (1998, p. 7) who comments that entrepreneurs are “opportunity-driven, not resource driven...they go after their dream by leveraging resources – by borrowing, begging, partnering, sharing, leasing and recycling resources”. Timmons (2002, p. 322) describes this as “using other people’s resources”. Bhidé (1992, p. 110) writes that “for the great majority of would-be founders, the biggest challenge is not raising money but having the wits and hustle to do without it”. Echoing this, Morris argues that although the “natural tendency is to assume that the principal resource required for any entrepreneurial event is money, the critical resources are typically non-financial (1998, p. 32).

Extant literature concentrates on entrepreneurial responses to insufficient resources in a number of ways. In the first instance an entrepreneur can attempt to obtain additional resources. Baker and Nelson (2003a) cite examples of resource-seeking behaviour found in the literature, notably attempts to access debt and equity financing; recruiting early employees; legitimating activities that ease the acquisition of resources; and “bootstrapping” as a tactic to survive without further financial capital. Begging, borrowing, scavenging and amplifying are additional resource seeking strategies that hinge on social transactions or networks as a means to offset the “asset parsimony” with which an entrepreneur must initially operate (Starr & MacMillan, 1990, p. 81).

In the second instance an entrepreneur does not seek additional resources but ‘makes do’ by applying combinations of the resources or means at hand to new problems and opportunities (Baker & Nelson, 2005). This implies that the entrepreneur does not wait until additional resource inputs are acquired or assembled but acts regardless, or in spite of any perceived resource inadequacy. Improvisation is a practice frequently associated with bricolage in that it addresses new challenges by deploying existing resources in novel ways (Weick, 1993b). There are however subtle differences between them. Despite bricolage having previously been compared with

improvisation, often with the two terms being used interchangeably (Garud & Karnoe, 2003; Weick, 1993b), with one paper arguing for bricolage to be subsumed within improvisation (Cunha, Cunha, & Kamoche, 1999), a clearer understanding of the underlying differences between the two concepts has emerged. This follows empirical work undertaken by Moorman and Miner (1998a) and Miner, Bassoff and Moorman (2001). Their subsequent definition of improvisation as “the deliberate and substantive fusion of the design and execution of a novel production” (Miner, et al., 2001, p. 314) means that improvisers have no time lag, they don’t look before they leap and because they do not have the time to gather resources beyond what they have at hand, they might be also be expected to practice bricolage. Conversely, bricolage occurs in the absence of improvisation and need not be simply an improvisational response. For example it is entirely possible to plan and execute cooking a meal using only what is at hand in the fridge or the pantry.

Baker and Nelson (2005, p. 333) state that Lévi-Strauss (1966) offered no specific definition of bricolage and after researching the multidisciplinary literature “to supplement the scanty prior use of bricolage in organization studies” felt that their definition incorporated many of the insights characteristic of Lévi-Strauss’s (1966) concept. There are three components to the bricolage definition. The first, ‘making do’ suggests that action is taken with what is at hand rather than engaging in further resource seeking actions. Implicit in this is a refusal by the entrepreneur to enact limitations (c.f. Weick, 1979). The second aspect of the definition, ‘creating combinations of resources for new purposes’, refers to the use or reuse of resources in ways in which they were not originally intended. As explained earlier, Schumpeter (1934) is arguably the leading proponent of resource recombination but combining resources for new purposes has also become a key mechanism in driving the development of strategic information systems. Lanzara (1999) and Ciborra (2002) for example, have both invoked the notion of bricolage to describe the “serendipitous combinations of existing programmes, pasted-up solutions, and failed components put to unexpected uses” (Baker & Nelson, 2005, p. 335). The third component of the definition is ‘the resources at hand’. Lévi-Strauss (1966, p. 18) pointed out that a bricoleur possesses a set of “odds and ends”, which may be physical artefacts, skills or ideas that are accumulated on the principle that “they may always come in handy”. Baker and Nelson (2005, p. 336) comment that reliance on the resources at hand,

Penrose's (1959, p. 5) "inherited" internal resources, surmounts external resource constraints.

Baker and Nelson (2005) undertook a field study of 29 resource-constrained small firms, a sector where previous studies have found that access and control of resources impact on growth and performance (Shepherd & Wiklund, 2005) and found the notion of bricolage to describe the behaviours of the entrepreneurs, in particular their "refusal to treat (and therefore see) the resources at hand as nothing" (Baker & Nelson, 2005, p. 356). Importantly their observations led them to comment:

The bricoleurs in our study did not view opportunities as objective and external to the resources and activities of the firm. Rather the processes of discovering opportunities and enacting resources were often one and the same, with both the resource environment and the opportunity environment idiosyncratic to the specific firm and constructed through processes of bricolage. (Baker & Nelson, 2005, p. 358)

The concept of bricolage has also been used by Garud and Karnoe (2003) to describe the activities of engineers and entrepreneurs in the wind turbine industry. Their study compared the development of the wind turbine industry in Denmark with its development in the United States. Whilst they found that actors from different domains became involved at different stages throughout the development process, and were actively involved in "mobilizing and shaping emerging technology paths" (Garud & Karnoe, 2003, p. 284) there were differences in the embedding processes of the "distributed agency". The Danish developers used a 'bricolage' development path which was characterized by "emergent co-shaping. Users offered continual feedback while those in test centres developed evaluation routines that co-evolved with experiences in the field" (Garud & Karnoe, 2003, p. 284). Conversely a 'breakthrough' development path was taken by the Americans based on established scientific knowledge and a linear model of discovery. The Danes had developed their industry and their knowledge base in an interactive process involving diverse stakeholders to effectively create a new opportunity by a "collective" with no pre-planned approach driving the process. Instead, "the path was emergent with actors improvising and adapting to unfolding structures as they gradually transformed the emerging path to higher functionalities" (Garud & Karnoe, 2003, p. 295). In essence,

the Danes learned by doing, rather than following the scientific path of their American counter-parts.

Improvisation was the focus for the first study undertaken by Baker, Miner and Eesley (2003). Building on the view that improvisation is the degree to which the design and execution of novel action converge (Miner, et al., 2001), improvisational processes were found to permeate entrepreneurial activity in their study of knowledge intensive young businesses. Improvisation was used in the founding process for some start-ups in the sample. It was also a tactic employed by the entrepreneurs as they improvised accounts of their businesses in order to create images of legitimacy. Bricolage is distinct from improvisation in that it draws on the resources at hand and may be a planned process rather than ‘on the fly’ improvising. It was seen to occur as the founders used their existing networks as resources at hand. Baker et al. (2003, p. 265) contrast this “networking bricolage” with the resource seeking of networking “or seeking opportunities and other resources through people who were previously strangers”.

Bricolage is an entrepreneurial process under resource constraints, which could also be thought of as “entrepreneurial resourcefulness”¹⁰. Being resourceful is a quality variously defined, for example by Encarta as “ingenious and enterprising, full of initiative and good at problem-solving, especially in difficult situations” (2009) and Merriam-Webster as “able to meet situations, capable of devising ways and means” (2010). Within this standpoint there are similarities with the idea that an entrepreneur will “find a way” (Stevenson & Jarillo, 1990, p. 23) and “make it happen” (Sarasvathy, 2004a, p. 519). Illustratively, Gabriel (2003) draws upon Homer’s (800BC) *Odyssey* to demonstrate resourcefulness on the part of Odysseus who “is capable of gentleness, persuasion, silence, planning and improvisation in different circumstances” (Gabriel, 2003, p. 622). Indeed, the suggestion is that Odysseus is “a paragon of bricolage. Unlike so many of today’s managers, Odysseus never complains of a lack of resources. Making do with whatever resources are available to him, he is capable of redefining useless materials into useful ones and of redefining

¹⁰ Ted Baker, personal communication, 25 September 2007.

his objectives in line with the resources available” (Gabriel, 2003, p. 623). In this way entrepreneurial resourcefulness can be thought of as a complementary quality of bricolage.

A more recent conceptual contribution is that of Andersen (2008) who argues that bricolage throws light on how organizations utilize know-how and social capital built up over many years to facilitate internal processes of innovation, or intrapreneurship, by “reemploying existing assets at hand” (Andersen, 2008, p. 56). In such a way bricolage “captures the flexibility and capacity for problem solving” (Andersen, 2008, p. 74) as workers respond to day to day contingencies and work with their available resources. He applies a ‘bottom-up’ perspective to explore what happens at the grass roots level of an organization on an ‘innovation trajectory’ and presents a convincing picture of how “historical heritage” (existing knowledge, know how and social capital formed in previous transactions) is used to craft new innovative solutions. Drawing attention to the know-how and social capital that are included in the “embedded toolbox” (Andersen, 2008, p. 60) of an agent brings to the fore the notion of entrepreneurial capital which can be thought of as the potential value of resources embedded within the entrepreneur.

2.3.3 Entrepreneurial capital

Entrepreneurial capital is a concept that builds upon the capital theory advanced by Bourdieu (1986) who classified individuals as possessing four forms of capital: economic, social, cultural and symbolic. Within this classification, Bourdieu (1986, p. 242) points out that cultural capital may be “institutionalized in the form of educational qualifications”. For this reason I will consider cultural capital to be education and work experience within the spirit of Becker’s (1964) conception of human capital. Endowing individuals with resources moves the focus from the resource-based view of the firm to essentially a resource-based view of the entrepreneur. Since I view entrepreneurship as a design process involving the linking of resources and opportunity then clearly the types of capital that an entrepreneur possesses affects this process. Entrepreneurial capital is a useful concept utilized by Firkin (2003) to encompass the various forms of tangible and intangible resources, of which parts have value, that make up an entrepreneur’s total

capital stock. Resource typologies differ. For example, Ansoff (1965) categorized resources as physical, monetary and human. Barney (1991) originally classified three categories of resources: physical capital, human capital and organizational capital, later adding a fourth financial category (Barney, 1995). This has been extended to include technological capital to give six broadly defined multiple forms of capital considered within an environmental context: financial, human, social, physical, organizational and technological (Brush, Edelman, & Manolova, 2008; Brush, et al., 2001; Brush, et al., 1997; Dollinger, 1995; Firkin, 2003; Greene, Brush, & Brown, 1997). However it should be noted that some definitions extend to resources beyond the firm. For example, Yuchtman and Seashore (1967, p. 900) define resources as “(more or less) generalized means, or facilities, that are potentially controllable by social organizations and that are potentially useable – however indirectly – in relationships between the organization and the environment”.

Firkin (2003, pp. 59-60) builds upon these existing typologies to advance the following definitions:

- Financial capital: Start-up and on-going funding.
- Human capital: Attributes, skills, education and experience, as well as the reputation of the entrepreneur(s).
- Social capital: Relationships and networks – within the family, as well as social, ethnic, professional and political associations and the like.
- Organizational capital: Organizational relationships, structures, routines, culture and knowledge.
- Physical capital: Tangible assets such as facilities and equipment.
- Technological capital: Can be knowledge and process based.

Firkin (2003) incorporates two central tenets within his entrepreneurial capital construct. The first, convertibility (Bourdieu, 1986) suggests that “each form of capital can be transformed from, and into, other forms of capital” (Firkin, 2003, p. 65). The second tenet relates to the value of each capital component. Firkin maintains that entrepreneurs act to identify and develop their entrepreneurial capital by “extracting the entrepreneurial value from their total capital or, in other words,

converting the various forms of capital they can access to derive entrepreneurial value” (2003, p. 65). Of consideration in this respect is that not all of the entrepreneurial capital will necessarily have value; entrepreneurship, after all, is context-dependent (Thornton, 1999). What stocks of capital one entrepreneur draws upon is likely to be an idiosyncratic process because, as noted by Brush et al. (2001, p. 64) it is the “unique capabilities rooted in innovative combinations of resources” that are the source of potential wealth creation. Therefore, Brush et al. (2001, p. 77) suggest that the entrepreneur faces a challenge in “identifying, specifying, combining, and transforming personal resources”. However, by adopting the view that these personal resource stocks, in the form of entrepreneurial capital, have value and are convertible, and because resource needs will change over time, this entrepreneurial capital development must be considered as a dynamic rather than static, one-off process.

Of the six forms of capital outlined above, Firkin (2003) utilizes five in his model: economic, human, social, cultural and physical. My conceptualization of entrepreneurial capital also incorporates organizational and technological capital. Technological capital is a capital with considerable potential for a technology-based entrepreneur seeking value from intellectual property residing in patents and licenses. Organizational capital within Firkin’s (2003) model refers to relationships, routines, structure, culture and knowledge within the organization, but it is this last aspect that has the most relevance for my purposes. Brush et al. (2001, p. 70) refer to organizational capital as being “experienced employees” and this is how I interpret organizational capital in my thesis.

I also draw upon another form of capital proposed by Bourdieu (1986). This is symbolic capital which Bourdieu regarded as “the form which different types of capital take once they are perceived and recognized by others to be legitimate” (Shaw, et al., 2008, p. 900). Symbolic capital is additionally defined by Calhoun (2002) as “resources available to a social actor on the basis of prestige or recognition”. Thus, it is a valuable form of capital to an entrepreneur because of its convertibility into reputation, as highlighted for example by Shaw et al. (2008). Although the various resource typologies present resources as discrete categories, I have to emphasise at the outset that this is not the case. The relationship between

these resources is interrelated, in what Shaw et al. (2008, p. 910) describe as a “complex and nuanced interplay”.

Shaw et al. (2008) together with Stringfellow and Shaw (2009) extend Firkin’s (2003) concept of entrepreneurial capital. Building upon Bourdieu’s (1977) perspective that “individual positions within emerging structures are determined both by the amounts and forms of capital possessed by individuals, and also by the value placed on such capital by others”, Shaw et al. (2008, p. 900) explore the impact of entrepreneurial capital on the reputation and performance of small firm owners, specifically viewing reputation as a component of an owner’s symbolic capital. The reputation of the owner is likely to make or break the success of the business and prior research has established that small firms are reliant upon word of mouth and networking in terms of reputation building and enhancement (Carson, Gilmore, & Rocks, 2004; Shaw, 2006), with the reputation of the firms “inextricably linked to and influenced by the reputation of their owners” (Shaw, et al., 2008, p. 902). Their Scottish study of thirty matched pairs of entrepreneurs within the business services industry, found a significant interplay between the entrepreneur’s stocks of financial, human and social capital as well as the symbolic capital that was generated in the form of reputation. Shaw et al. (2008) draw particular attention to the importance of human capital in the form of prior experience, knowledge and skills which was drawn upon and leveraged to build social capital. This suggests “that it is essential for entrepreneurs ‘to know’ and to ‘be known’ by the right people if they are to establish personal and firm reputation” (Shaw, et al., 2008, p. 911).

A theoretical framework developed by Stringfellow and Shaw (2009) contributes to conceptualizations of entrepreneurial capital by investigating further the interplay between capital forms in the professional services industry. Paying specific attention to the view that the value of capital changes over time (Bourdieu, 1986) a three stage model is used to show how social capital is created and used. Nascent, start-up and development stages are theorized to have changing resource components and requirements with social capital, in the form of relationships which “develop and disintegrate” (Stringfellow & Shaw, 2009, p. 144) over time predicated to materially impact on resource access and business performance. Stringfellow and Shaw (2009, p. 148) separate the sources of social capital from the outcomes of its usage

acknowledging that “the presence of certain resources within a network is not necessarily related to the individual’s ability to draw these resources from the network”. Their framework builds a picture of the overlapping nature of entrepreneurial capital and the dynamic nature of its transformative ability (Bourdieu, 1986).

A conception of entrepreneurial capital, distinct from Firkin’s (2003) model, has been presented by Erikson (2002). Working from the premise that entrepreneurial capital is “the present value of generated future entrepreneurial behaviour” (Erikson, 2002, p. 277) he suggests that such behaviour can be conceived of as the pursuit of opportunities “regardless of the resources at hand” (c.f. Stevenson & Jarillo, 1990). Encapsulated within his premise is that entrepreneurial capital results from a relationship between entrepreneurial competence and entrepreneurial commitment. In defining these two qualities, whereby entrepreneurial competence is “the combined capacity to identify and pursue opportunities, and to obtain and coordinate resources” and entrepreneurial commitment “reflects the ability to see ventures through to fruition” (Erikson, 2002, p. 278) argues that these heterogeneous capacities lead to new windows of opportunity and that “shadow options are turned into real options when opportunities are identified and found worthwhile to pursue” (Erikson, 2002, p. 279). Erikson (2002) claimed that entrepreneurial capital was a useful demonstration of competence and motivation which potential investors should utilize before investing financial capital in an entrepreneurial venture. An empirical component hypothesised that greater entrepreneurial capital would result from a higher amount of perceived entrepreneurial competence and stronger commitment. That knowledge and resources are accrued over time was unsurprisingly found to lead to increased competence but that entrepreneurial commitment decreased with age. The temporal aspect of building entrepreneurial competence cannot be overlooked and brings into play the evolutionary nature of venture development and of “entrepreneurial action unfolding in time and embedded in context” (Chiles, Bluedorn, & Gupta, 2007, p. 485).

The next three sections address the three forms of capital which receive the greatest attention in the entrepreneurship literature: financial capital, human capital and social capital in order to develop an understanding of how entrepreneurs create the

capability to develop an opportunity which is predicated on their ability to generate value from their entrepreneurial capital.

2.3.4 Financial capital

Financial (or economic) capital refers to the financial assets that an entrepreneur can exchange for money (Bourdieu, 1986). It is therefore a straightforward category consisting of start up and ongoing funding: the entrepreneur's own capital, equity holders and banks, together with retained earnings (Barney, 2007). In other words, it is all the different money resources available to the entrepreneur for the discovery and development of the venture. It is generally accepted that the vast majority of small entrepreneurial firms, without the assets an objective investor might consider valuable, are unlikely candidates for venture capital or angel investment meaning that obtaining external finance is both difficult and expensive. Although the particular industry the entrepreneur is entering is likely to have different financial capital requirements (Porter, 1980), inadequate finances are frequently attributed to the failure of emerging businesses (Chandler & Hanks, 1998). Nevertheless history tells us that many penniless entrepreneurs have managed to launch start-up businesses on the smell of an oily rag. These 'rags to riches' stories effectively preserve the myth of the lone opportunity-seeking, resource-mustering entrepreneur using "pluck, persistence and imagination to lever their tiny pools of funds into organizational triumphs" (Little, 1987, p. 3). It is when financial resources appear to be limited that alternative sources of capital become important to the financial strategies of small firms (Carter & Van Auken, 2005). Winborg and Landström (1997) set out to establish what these alternative sources of capital might be, but framed within the broader concept of resources (rather than capital or money), commenting that "in this extended context concepts like networks, strategic alliances, use of resources, cooperation, trust etc may become central" (Winborg & Landström, 1997, p. 473). Their exploratory Swedish study identified and described the financial bootstrapping measures used by small business managers to meet their resource needs without relying on long-term external finance. Two main groups of measures emerged; measures that reduced the need for capital, and those that were practiced in order to meet the need for capital. This led to six broad categories: obtaining support including unsalaried work from owner/managers and family members; account

receivable processes being actively managed to speed up invoicing; borrowing or sharing resources with others from outside the business; delaying payments especially on items of capital that could be leased rather than owned outright; minimization of stock levels and obtaining government subsidies where possible.

Cassar (2004) adds that as a means of preserving ownership and control, external finance is often undesirable for personal reasons. Dobbs and Hamilton (2006, p. 306) note that “the fundamental decision for many entrepreneurs is whether or not to accept external equity finance in return for part ownership of the business”. Also, for many an entrepreneur with no prior track record nor experience in raising money, this early stage funding can only come from personal funds, followed by ‘family, friends and fools’ (Bhidé, 1992). Chandler and Hanks (1998) argue that financial and human capitals are partially substitutable and account for the ability of entrepreneurs with strong background experience to be able to initiate and develop a venture with less financial capital than less experienced counterparts.

2.3.5 Human capital

The importance of taking into account the relationship between entrepreneurial human capital and venture success has occupied researchers for more than three decades, with the education, experience, knowledge and skills of entrepreneurs being seen as a critical resource to new ventures (Unger, Rauch, Frese, & Rosenbusch, 2009). Moreover, human capital is also credited with increasing owner’s capabilities of discovering and exploiting business opportunities. Indeed, it is suggested that the entrepreneur, “as repository of much of the knowledge and skills that make up the intangible assets of the firm - cannot be ignored” (Gimeno, Folta, Cooper, & Woo, 1997, p. 777). There are some efforts to broaden the human capital concept, for example, Burt (1997, p. 339) views human capital as “a quality of individuals... it refers to individual ability”, and similarly, Shanahan and Tuma (1994, p. 746) suggest that human capital is a “compendium of all traits and abilities that make human beings economically productive in a society...[it] encompasses both innate abilities and acquired skills. The former includes genetic differences affecting intelligence, health personality, and interpersonal attractiveness”, to which Firkin (2003) also adds the willingness to work long and hard. However, as a construct it would seem to

remain focused largely on formal qualifications, skills and work experience (e.g. Brüderl, Preisendörfer, & Ziegler, 1992; Cooper, Gimeno-Gascon, & Woo, 1994; Gimeno, et al., 1997). This may be due to the quantitative nature of much of the research and the need for measurable variables. As Fitz-enz (2009, p. xviii) notes “the great irony is that the only economic component that can add value in and by itself is the one that is the most difficult to evaluate”.

The concept of human capital in the modern economic literature, originated from the work of Mincer (1958) and Becker (1964) who sought to understand the relationship between an employee’s investment in their human capital and their income potential. However, Becker (1964) also sought to differentiate between investment in human capital and the outcome of that investment because investment of itself does not necessarily translate into knowledge and skills. It is person and context dependent. Illustratively, Unger et al. (2009, p. 4) argue, “there is no mechanistic one-to-one relationship of whether such investments do increase one’s human capital”. As Quiñones, Ford and Teachout (1995, p. 905) point out, “it is possible that two individuals can be sent to start two separate businesses and thus have equal experiences. However the outcomes can be dramatically different”. Also, “years of experience may not closely reflect skills and knowledge developed” (Gimeno, et al., 1997, p. 764). For this reason when human capital is viewed from the investment perspective it may not actually be indicative of the knowledge and skills possessed by an entrepreneur. Conversely, an outcome perspective is advantageous because the knowledge and skills acquired represent a learning outcome.

In this respect, human capital can also be accumulated rather than deliberately acquired via investment. Ucbasaran, Westhead and Wright (2008) comment that learning-by-doing (Schoonhoven, Eisenhardt, & Lyman, 1990) and experientially acquired human capital is widely recognised. Moreover, as Coleman (1988, p. S100) indicates, human capital “is created by changes in individuals that facilitate new skills and abilities which enable them to act in new ways”. Thus, the acquisition and transfer of human capital in the form of knowledge and skills become central to venture success (Unger, et al., 2009). In other words, new ventures rely on whatever knowledge resources reside within the entrepreneur (Brush, et al., 2001; Ucbasaran, et al., 2008). In essence this means that young entrepreneurial firms are often built

around the founding entrepreneur who identifies the opportunity. On this basis it is the human capital component of the entrepreneur, “his or her character, ability to learn, flexibility, and creativity – not in a particular business opportunity an entrepreneur plans to exploit” (Alvarez & Barney, 2007, p. 20) that potential investors will weigh up (Erikson, 2002).

It has been suggested by Shane (2000) and Corbett (2007) that the discovery of *specific* opportunities is dependent on individual characteristics of human capital. Clearly it is likely to be the founder who possesses much of the technical and managerial knowledge that make-up the tangible and intangible assets of the firm (Alvarez & Busenitz, 2001) and in this regard Brüderl et al. (1992) would define such human capital as *specific* human capital comprising industry-specific and entrepreneur-specific components. Whereas industry-specific human capital would be generated from previous industry experience yielding relevant industry knowledge, prior self-employment is an indicator of entrepreneur-specific human capital. “If self employment is a kind of “trial and error process”, then knowledge gained in prior self-employment episodes, successful or not, may be the best preparation for the entrepreneurial role” (Brüderl, et al., 1992, p. 229). Such human capital is considered to be *task-specific*, accumulated on the job from task-specific learning-by-doing (Gibbons & Waldman, 2004). There is support for the idea that entrepreneurs evaluate opportunities on the basis of the extent to which it relates to their existing stocks of knowledge, skills and abilities (Haynie, Shepherd, & McMullen, 2009).

An additional consideration pointed out by Light and Karageorgis (1994) is that human capital is a product of class culture. In this regard, DiMaggio (1994, p. 33) points to literature suggesting “that “middle class” professionals and managers, “knowledge workers” with impressive educational credentials but little financial capital, possess distinctive values and ideologies”. This would accord with the claim that there is some truth to the view that “venture capitalists invest in people who look more like MBA’s” (Zider, 1998, p. 131).

2.3.6 Social capital

Described by Schuller (2007, p. 19) as a “portmanteau term”; by Lappe and Du Bois (1997, p. 119) as a “wonderfully elastic term”, and “as a peg on which to hang all those informal engagements we like, care for and approve of” (Anderson, Park, & Jack, 2007, p. 245), social capital is a concept that has moved to a position of prominence in the social sciences but, as the quotes above indicate, is not an uncontested concept. The first systematic contemporary analysis of social capital was produced by Pierre Bourdieu (1986, p. 248), who defined the concept as “the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition”. Whereas Bourdieu (1986) postulated that all forms of capital are ultimately reducible to economic capital, Schuller (2007, p. 19) argues instead that social capital derives its value from its “linkages to other capitals – assets or advantages, individual or collective” and thus focuses on interaction. He further suggests that because the concept of social capital is so heavily context dependent, its dynamic nature is best captured when viewed “over time, in flux and in interaction with other elements of analysis” (Schuller, 2007, p. 13).

So what actually is social capital? Burt (2005) suggests it can be thought of as a metaphor for advantage. It can be a visible advantage when some people are seen as doing better than others, by dint of who they know, and in turn who those people know, amidst issues of trust, reciprocity and obligation; a “revolving mutual fund of traded and untraded interdependencies” (Anderson, et al., 2007, p. 246). Thus the view of social capital as being the “advantage created by a person’s location in a structure of relationships” (Burt, 2005, p. 4). The actual location or position might in itself be an asset. This is reflected the view of social capital as “the sum of the resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition” (Bourdieu & Wasquant, 1992, p. 119). That social capital confers advantage is also reflected in the following definition:

Social capital is defined by its function. It is not a single entity but a variety of different entities having two characteristics in common: they all consist of some aspect of social structure, and they facilitate certain

actions of individuals who are within the structure. Like other forms of capital, social capital is productive, making possible the achievement of certain ends that would not be attainable in its absence. (Coleman, 1988, p. S98)

A further definition is that social capital is “a resource that actors derive from specific social structures and then use to pursue their interests; it is created by changes in the relationship among actors” (Baker, 1990, p. 619). Davidsson and Honig (2003, p. 307) also allude to advantage when they refer to social capital as “the ability of actors to extract benefits from their social structures, networks and memberships”. Additionally Burt (1992, p. 9) sees it as “friends, colleagues, and more general contacts through whom you receive opportunities to use your financial and human capital”. In sum, there appears to be a collective agreement that the social capital metaphor stands for an intangible form of capital that can create an advantage for individuals and groups in pursuing their ends. Importantly, social capital doesn't exist as an objective entity but rather resides in the web or structure of relationships (Coleman, 1988). The metaphor therefore can be thought of as augmenting income stocks without ever being directly used (Anderson & Jack, 2002).

It is within this context that social capital is defined as “resources embedded in a social structure that are accessed and/or mobilized in purposive actions” (Lin, 2001, p. 40); “as the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit” (Nahapiet & Ghoshal, 1996, p. 243) or simply as a set of social resources embedded in relationships and the resources available to people through their social connections (Anderson, et al., 2007).

The introduction of the term ‘embeddedness’ draws upon Granovetter’s (1985) key insight that embeddedness refers to the on-going contextualization of economic exchange (activity) in social structures. Thus, Granovetter’s (1985, p. 490) assertion that “the role of concrete personal relations and structures (or networks)” must be taken into account when considering this economic activity. This draws attention to the local context in which the entrepreneur’s social world is embedded (Audretsch, et al., 2006). In short, the notion of embeddedness emphasises “both the nested and constitutive aspects of context” (Dacin, Ventresca, & Beal, 1999, p. 319) whereby

economic activity does not occur in a social vacuum, but rather is nested in patterns of economic and/or social relationships. Research suggests that the social capital available to organizations is a function of the nature of their embeddedness in networks (Burt, 1997). Viewed in this light, the network therefore becomes an intangible asset; a resource underpinned by social capital (Cope, Jack, & Rose, 2007). The network view is productive since it demonstrates how the entrepreneurial firm may reach resources outside the firm whilst underlining the point that all economic activity is socially embedded (Granovetter, 1985).

As a set of resources contained within the structure of relationships, where “structure only exists in and through the activities of human agents” (Pozzebon, 2004, p. 253), the value of social capital lies in the actual or potential resources that these relationships can access. Viewing social capital as a resource ties in well with the concept of entrepreneurial capital because entrepreneurship operates within resources constraints and tapping into a reservoir of external resources; be they human, social or financial, is a key component of my thesis. However, Anderson et al. (2007, p. 249) suggest that rather than thinking of social capital as a resource, it is “more akin to a key... to unlock or gain access to other resources...it is a social relational artefact, produced in interactions but it resides within a network”. Importantly for my purposes, “social capital enables interactions that in turn may tap into resources”(Anderson, et al., 2007, p. 249). It is a “linking mechanism” (Anderson & Miller, 2003, p. 19).

The relevance of social capital to an entrepreneur is reflected in the growing stream of literature that pays attention to entrepreneurship as a “context-dependent, social and economic process” (Thornton, 1999, p. 20). To this effect, Aldrich and Zimmer (1986, p. 8) argue that entrepreneurship is “embedded in networks of continuing social relations. Within complex networks of relationships, entrepreneurship is facilitated or constrained by linkages between aspiring resources and opportunities”. This interwoven relationship is further illuminated by the comment that:

Opportunities do not drop from the sky. Opportunities are created within and among existing organizations as a product of ongoing networks of relationships and exchanges. Opportunities come most frequently to people located at advantageous positions within

networks. Furthermore, exploiting an opportunity requires certain resources (human capital, marketing, sales, etc.). The same type of network relationships and contacts needed to identify opportunities are also necessary to obtain the resources required to exploit opportunities. (Low & MacMillan, 1988, p. 155)

Given the suggested focus on the individual-opportunity nexus (Shane & Venkataraman, 2000), the network perspective effectively extends the domain of entrepreneurship beyond the ‘mythical hero’ individual to the nature and role of the interactions in their relationship structures. This also draws attention to Granovetter’s (1985) belief that “behaviour is so constrained by social factors that to construe it as independent is misleading” (Anderson & Miller, 2003, p. 19). The literature that draws together entrepreneurial opportunity and social capital has therefore developed primarily under the aegis of the network perspective, which seeks to understand how the connections between entrepreneurs and their social milieu facilitate or constrain their business (Johanisson, 2000).

Typically there are two forms of network embeddedness: structural, which concerns the properties of the structure and the network as a whole, considered to be either dense or sparse, and relational embeddedness which, by contrast refers to the nature of relationships that people develop with each other over time, categorized as strong or weak (Granovetter, 1992). Relational embeddedness is both contingent and dynamic; it “exists at the level of interaction and not as some sort of impersonal force” (de Bruin & Dupuis, 2003, p. 10). Importantly, this interaction between actors, and the inter-actor ties that result from such interaction, reside within and span across network boundaries. However, social capital is also considered to be convertible (Bourdieu, 1986); its various forms can be converted to other kinds of capital. Thus, one’s position in a social network can be ‘converted’ to one’s advantage (Adler & Kwon, 2002). Burt (1992, p. 58, added italics) explains that “no one player has exclusive ownership rights to social capital. If you or your partner in a relationship withdraws (*structural*), the connection dissolves with whatever social capital (*relational*) is contained”. From this position it can be seen that the dimensions that are theorized to make up social capital are not mutually exclusive but interwoven. “Without physical centrality or networks (*structural*), entrepreneurs would be less likely to develop trustful relationships (*relational*), subsequently hampering the

formation of shared norms and values (cognitive) in supporting new venture creation” (Liao & Welsch, 2005, p. 352).

A number of studies confirm the important and varied role played by networks in influencing the entrepreneurial process. In particular, the value of existing relationships has received support. Birley (1985) found that informal ties appeared to be more significant than formal ties to a new venture. Aldrich and Zimmer (1986), Hara and Kanai (1994) and Johannisson (1996) all point to the importance of pre-existing relationships as a resource source for new ventures. Perhaps the most developed theoretical framework is the stage model developed by Larson and Starr (1993) which emphasises the exchange processes utilized by entrepreneurs. Their proposition rests on three stages of entrepreneurial networking activity and reflects the “dynamics underlying the acquisition of resources, the formation of exchange relationships, and the inherent trial-and-error discovery and learning process of new venture creation” (Larson & Starr, 1993, p. 6). The first stage concentrates activity on identifying those existing contacts that can be tapped as resource providers for the new venture. The second stage requires the development of more complex multidimensional relationship exchanges “through the actions and persuasive abilities of the entrepreneur...Further the interweaving of social and economic dimensions of exchange often adds a moral component to the relationship...reflecting the individuals’ interests in building and protecting their reputations” (Larson & Starr, 1993, pp. 8-9). By the third stage the content of the network relationships is increasingly complex, with key information being built into layers of exchange relationships which are developing into stakeholder relationships.

Several studies that specifically target the new venture development process build on the work of Nahapiet and Ghoshal (1996) who introduce a third cognitive dimension, which they operationalized as shared codes, language and narratives. An empirical study by Liao and Welsch (2005) endeavoured to establish whether there were significant differences between the social capital of nascent entrepreneurs and the general public as a control group; between technology and non technology nascent entrepreneurs and how the three dimensions proposed by Nahapiet and Ghoshal (1996) interacted. Their quantitative study of 462 nascent entrepreneurs and 168 members of a control group found the levels of social capital were not a

differentiating factor between the groups, but how the social capital was actually used and converted into relational capital distinguished the entrepreneurs from the general public. Additionally, high technology entrepreneurs exhibited greater stocks of relational capital, reflecting the accessibility of information and knowledge made possible by such relationships. This led to the possibility that high-tech entrepreneurs “are probably more capable of utilizing one type of social capital to amplify other types of social capital” (Liao & Welsch, 2005, p. 359).

A further study exploring the role of social capital in the growth of small high tech companies was undertaken by Partanen, Möller, Westerlund, Rajala and Rajala (2008). Their conceptual model consisted of four overlapping stages in new venture growth: innovation assessment, offering development, commercialization and rapid growth, with each phase characterized by differing resource requirements. Since new ventures typically commence with limited resource stocks they argued that “network mobilization capability and the social capital involved form a critical precondition enabling the firm to transcend from one phase to another” (Partanen, et al., 2008, p. 513). Employing the structural, relational and cognitive dimensions of social capital employed previously by Nahapiet and Ghoshal (1996), their longitudinal case studies of three Finnish organizations provided evidence that achieving growth was complicated, with innovation, occurring in research and development activities, and social capital development an on-going activity. Social capital played a key role in transforming weak ties into “collaborative business relationships” with external stakeholders. The cognitive dimension in particular was vital in establishing the “strong relational trust-based ties, which are the cornerstone of scientific and technological collaboration” (Partanen, et al., 2008, p. 519).

External relations have also been empirically examined by Anderson and Jack (2002). They sought to solve the conceptual puzzle that social capital can be thought of as both glue, forming the structure of networks, and also a lubricant, facilitating the operation of those networks. They acknowledged the difficulty in studying a “relational artefact” that could not be directly observed. Their qualitative study of a small purposeful sample of entrepreneurs diverged from their research plan because they found that the entrepreneurs “failed to provide any clear account of the process ... [they] seemed to engage in social capital production implicitly or instinctively”

(Anderson & Jack, 2002, p. 200). The entrepreneurs in their study saw networking as a key element of being an entrepreneur and were unable to separate themselves from it; they viewed developing their social capital as a basic element of building their business. Anderson and Jack (2002, p. 202) suggested this supports the view in the literature that social capital “is also a capital ‘stock’ or business asset and that entrepreneurial interaction was about building social capital”. Anderson and Jack (2002, p. 206) interpreted social capital as being both the glue and the lubricant “in that social structures are formed and bound by social capital yet social capital also facilitated the interactions and flows within the structure. Both aspects operated simultaneously so that social capital both created and developed networks”. In effect therefore, the process of social capital development was portrayed as a duality; both the means and the outcome of the interaction.

Two further dimensions of social capital are raised in the literature. An internal or ‘bonding’ social capital perspective explores the “impact of a collective’s internal ties and the substance of the network relationships within that collective” (De Carolis & Saporito, 2006, p. 42), whereas an external or ‘bridging’ perspective focuses on the external relations an actor has with other actors. Within the bridging social capital perspective there are several schools of thought. One school champions the notion that being part of a network where all the members know most of the others is beneficial (e.g. Coleman, 1988). Others, notably Granovetter (1973, 1985) and Burt (1992, 2005), argue instead that because information (and in particular information regarding opportunity) is diffused unevenly across members of society, an entrepreneur will have to reach out to these different parts of society in order to gather the requisite information. It is the strength of the ties an entrepreneur has with these individuals that is purported to define the strength and the quality of the relationship and most research illustrates that the strength of the relationship has some bearing on the type of resources provided (Jenssen & Koenig, 2002). The ‘strength’ reflects the time invested, the emotional intensity and intimacy of the relationship, and the degree of likely reciprocity.

The strength of weak ties (Granovetter, 1973) resides in the proposition that the weaker the tie, the more likely the entrepreneur will have access to advantageous social capital. This is because weak ties are considered to be heterogeneous and a

crucial component of social structure, thus enabling information to flow into other social circles or systems, and filter through society (Burt, 1992). In this way, the strength of weak ties is not actually related to the weakness of the relationship, but to the prospect of connecting to other social systems and the value of the information within them (Ibarra, 1993). Janssen and Koenig (2002, p. 1040) comment that “weak ties do not necessarily give more information, but they provide non-redundant information which is of higher value”. Granovetter (1973) classified weak ties as based on interaction less than twice a week but more than once a year whereas strong ties are those relationships based on frequent interaction, occurring at least twice a week. He subsequently revisited his network theory to stress that strong ties were close friends and family, “a densely knit clump of social structure” (Granovetter, 1983, p. 202). Reliance on these strong ties, in effect not stepping out of one’s own circle of friends, is largely thought to restrict information flows, since friends tend to move in the same social circles (Burt, 2005). However, Janssen and Koenig (2002) found the reverse: strong ties provide access to information. Their quantitative study specifically addressed how the strengths of ties affected resource access, for which they used three resource categories: information, finances and motivation, following Kanter (1983). The assumption that social networks affected resource access was confirmed, but the relationship they found was contrary to that presented in the literature. They found a relatively high and significant flow of information via strong ties. Brüderl and Preisendörfer (1998) also found contrary to Granovetter’s (1973) strength of weak ties hypothesis. Whilst they did find that network support contributed to the likelihood of a new venture surviving, it was the strong ties of family and particularly of the spouse or partner that seemed to act as essential resources. Similarly, Aldrich, Rosen and Woodward (1986) and Lechner and Dowling (2003) stress the importance of strong ties which are supposed to both “support and help justify the choices made by the entrepreneur and help to solve problems” (Jack, 2005, p. 1238). By comparison, weak ties, formed by moving into new social orbits, are considered to be beneficial for entrepreneurs as a means of accessing new information and resources (Aldrich, et al., 1986; Burt, 1992, 2005; Dubini & Aldrich, 1991; Mönsted, 1995).

With a view to resolving this empirical divergence regarding the role and use of strong and weak ties, Jack (2005) undertook a qualitative analysis. Her study

explored in-depth the networking activities of fourteen entrepreneurs, finding that strong ties were actively employed, not only to provide knowledge and information “but also to maintain, extend and enhance business and personal reputations” (Jack, 2005, p. 1236). She found that respondents depended and relied upon their family or close, personal friends; their strong ties, particularly in the start-up and growth phases of their business. Whereas Granovetter’s (1973) strong ties is based upon how frequently contact is made, Jack (2005) found instead that what she identified as strong ties could in fact lie low as a form of latent social capital which was able to be called upon as and when required. This she attributed to the function of the tie “and how that tie can be utilized that is important” (Jack, 2005, p. 1254) rather than the frequency of contact. The strength of the tie lay in the information it provided, the usefulness and relevance of the relationship to the entrepreneur at that point in time, introducing a temporal element, and also whether the information was deemed to be from a reliable and trustworthy source. In her study, entrepreneurs were found to draw upon their strong ties, not only to gather information, but also to “link into the wider social structure and draw benefits into the business” (Jack, 2005, p. 1250). Although she found little evidence of weak ties in the Granovetter (1973) sense, she did find that her entrepreneurs used ‘friends of friends’, who were not personally known, as secondary links or “nodes” in order to link into other structures. Jack (2005, p. 1255) concluded that entrepreneurial networks “can convert ‘limited’ resources into a ‘rich environment’”.

A recent synthesis of network research undertaken by Jack (2010) inspired the comment that “despite the pervasion of the network concept and its increasing popularity, many questions are unanswered about the content of interactions and relationship between networks and entrepreneurship” (Jack, 2010, p. 120). This is in no small way because “networks are complex: take many forms; are fluid, flexible, and dynamic, constantly changing and evolving to suit individual and organizational needs and requirements” (Jack, 2010, p. 134). These comments reflect the idea that entrepreneurship is a socially situated process (Granovetter, 1985).

2.4 Opportunity

A wise man will make more opportunities than he finds.

Francis Bacon

Much entrepreneurship research attention has been paid to traits, personalities, orientations, motivations, structures, policies, mechanisms, processes and cultures that shape entrepreneurial practice (Fletcher, 2006). However, following the proposition that entrepreneurship seeks to understand “how opportunities to bring into existence future goods and services are discovered, created and exploited, by whom, and with what consequences” (Venkataraman, 1997, p. 120) there has emerged a general consensus that the entrepreneurial process associated with opportunity is central to the academic discipline (Shane, 2003; Shane & Venkataraman, 2000). There are two major and differing perspectives on the source of these opportunities (Shane, 2003). Kirzner’s (1973) and Schumpeter’s (1934) explanations disagree on whether the existence of entrepreneurial opportunities involves “the introduction of new information or just differential access to existing information” (Shane, 2003, p. 20). In other words the sources are exogenous rather than attributed to any degree of entrepreneurial action.

The Schumpeterian view espouses the idea that opportunities are discovered whereas Kirzner adopts the perspective that opportunities are enacted (Dutta & Crossan, 2005, p. 433). These disparate views typify the dualism surrounding the nature and source of opportunity; a dualism that resides in ontological differences concerning whether reality (in this case opportunity) is objective or subjective. For example, Kirzner (1973) suggests that opportunities are like dollar bills blowing around on the sidewalk, waiting for an alert individual to pick them up. Schumpeter (1934), by contrast, suggests that opportunities require large amounts of capital to exploit and that the commitment to exploit them can be found only in minds of the highest order” (Casson & Wadeson, 2007, p. 285).

Further conceptual development by Shane and Venkataraman (2000) has focused attention on the individual-opportunity nexus and their assertion is that individual

differences in knowledge, alertness and creativity lead to opportunity discovery. At the time of writing this thesis, their article is cited by 460 researchers which gives a clear indication of their influence on the opportunity debate. As Eckhart and Shane (2003, p. 333) note “this new focus has required scholars to explain the role of opportunities in the entrepreneurial process”. However, whilst Shane and Venkataraman (2000, p. 224) concede that the framework is a starting point, built on some uncertain assumptions and “potentially flawed logical arguments”, the dominance of the individual-opportunity nexus (Shane, 2003; Shane & Venkataraman, 2000) has concentrated attention on the discovery of opportunities where the existence of opportunities are taken for granted (Companys & McMullen, 2007; Davidsson, 2003; McMullen, et al., 2007). The influence in particular of Venkataraman’s (1997, p. 121) assertion that there is “always a supply of lucrative opportunities to enhance personal wealth, and a continuous supply of enterprising individuals seeking such opportunities” implicitly argues that opportunity exists independently from the entrepreneur rather than paying attention to the nature and source of the opportunity itself.

The discovery viewpoint, and particularly work within the individual-opportunity nexus framework, holds that opportunities are assumed to arise from changes in their operating environment, such as changes afforded by advances in technology and changes in consumer preferences. Shane (2003) for example points out that technological, political and regulatory changes disrupt the equilibrium of the market place and thus form opportunities. These exogenous shocks place the focus on search. Under this scenario these opportunities are objective and observable (Alvarez & Barney, 2007). Entrepreneurs must be constantly on the lookout for opportunity; scanning the environment to discover possibility for action; “to bring agency to opportunity” (Shane, 2003, p. 7). What begs the question is that in a situation where everyone associated with a particular industry knows about an opportunity that has arisen by such an exogenous shock, why does everyone not exploit it? As Alvarez and Barney (2007, p. 14) point out, “discovery theory must necessarily assume that entrepreneurs who discover opportunities are significantly different from others in their ability to either see opportunities or, once they are seen to exploit these opportunities”.

Kirzner (1973, 1979) introduced the notion of alertness, “a gift individuals enjoy in quite different degrees” attributing the gift to entrepreneurial alertness, “the ability to notice without search opportunities that have been hitherto overlooked” (1979, p. 148). The fundamental problem is that we cannot know a priori what we are looking for. Kirzner’s opportunity would appear to be a spontaneous and random occurrence that depends entirely on the ability of a person to identify a source of profit that no one else has previously noticed. One must ask at this stage where this pre-existing opportunity comes from? Information has been theorized as the explanation.

Hayek (1945) first pointed out the role of information which is not “a ‘given’ or at everyone’s disposal” (Venkataraman, 1997, p. 122). Thus, information is idiosyncratic. Day-to-day knowledge is acquired in the course of everyday life and the route everyone takes on that daily path will yield a different knowledge corridor (Ronstadt, 1988). Thus, information is also asymmetric. The possibility exists that simply being in the right place at the right time might give one individual an information edge over another. In other words these opportunities exist because different people possess different information (Kirzner, 1979). This was empirically tested by Shane (2000) who set out to explore what had happened to a new Massachusetts Institute of Technology (MIT) developed technology. Although the information surrounding the technology was widely available, only eight entrepreneurs and their stakeholders took up patents to develop the technology with all eight admitting the opportunity was not obviously observable. The opportunity was not just blowing around in the wind like a dollar bill (c.f. Kirzner, 1973). Case studies of each ‘opportunity’, revealed a number of interesting findings. All eight entrepreneurs used the same technology in markets with which they were intimately familiar, although each market was different and the technology used in different ways. In other words there were eight different perceptions of the same reality. Further, all eight recognized that the technology was relevant to existing customer problems in an ‘a ha!’ moment of recognition, rather than actively searching for a solution. This led Shane (2000) to surmise that differences in prior knowledge influenced opportunity discovery; in effect this highlights the diversity of individual perception in the opportunity discovery. However, four of the recognized opportunities failed to be developed into profitable new ventures. Venkataraman (1997, p. 124) notes that “incentive, capability, and specific behaviours needed to

profit from useful knowledge or insight all vary among individuals, and these differences matter for explaining the exercise of enterprise”. The suggestion here therefore is that more than prior knowledge is needed; the entrepreneur needs to create the capability to develop an opportunity, and the information processing ability of an entrepreneur is one aspect of that capability (Vaghely & Julien, 2010).

Most recently Vaghely and Julian (2010, p. 75) write that “information is that which alters mental representations”. Based on a case study of ten SMEs they develop a human information processing model that incorporates the two ontological viewpoints of opportunity as a continuum. Intuition was shown to be an important component of information processing. Discovery entrepreneurs “connect the dots” using frameworks acquired through experience (Baron, 2004, 2006; Gioia, 1986) whereas at the other end, intuition is constructed by interpretation (Daft & Weick, 1984) of the environment through a process of sensemaking and “discussions with members from the entrepreneur’s information network and his organization” (Vaghely & Julien, 2010, p. 79). They found that entrepreneurs in their case study used algorithms to process information and recognize opportunities based on “existing problem-solution pairs and heuristic processing helped them to recognize opportunities based on new problem-solution pairs” (Vaghely & Julien, 2010, p. 83). This led them to suggest that entrepreneurs process information in a dynamic combination of algorithms and heuristics. They found that “in the interpretation, construction and enactment of their environment, entrepreneurs and their organization use a trial and error type of information processing for sensemaking and opportunity construction: this they combine with patterns of information based on their experience to identify opportunities” (Vaghely & Julien, 2010, p. 73).

The relationship that Vaghely and Julien (2010) find between opportunity discovery and problem solving is not a new association. Stevenson and Jarillo (1990, p. 23) suggest that being an entrepreneur involves accumulated knowledge that “assists in problem solving”. Similarly, Shane (2003, p. 47) comments that opportunity discovery “is often like solving puzzles because a new piece of information is often the missing element necessary to see that an opportunity is present”. Following from this, Shane and Eckhardt (2003, p. 168) write that entrepreneurial opportunities require a process of discovery of a “previously unseen or unknown way to create a

new means-ends framework”. Hsieh, Nickerson and Zenger (2007, p. 1257) argue that it is better to think of an opportunity under the terminology of “problem and solution, thus opportunity discovery involves a matching process and opportunities relate to unique problem-solving pairs”. Because problems do not present in a ‘one-size-fits all’ package they also fundamentally differ in the degree of knowledge required to solve them and Hsieh et al. (2007) suggest that “in the context of searching for solutions to known problems, the learning ability of an entrepreneur relates to the ability of an entrepreneur to “acquire, accumulate and apply knowledge” (Hsieh, et al., 2007, p. 1260). These views reinforce the objective view of the environment as constituting a body of knowledge that exists “irrespective of the individuals who would have this information in their brains...Information just ‘is’” (Gartner, Carter, & Hills, 2003, p. 106). Viewed in this light, the discovery view rests on objective information existing “regardless of any individual’s ability to access this information or accurately perceive it” (Gartner, et al., 2003, p. 108).

There are those who suggest that even the most recent academic outputs “have been generally restricted to either describing discovery or attempting to explain it theoretically” (Fiet & Patel, 2008, p. 215) and hinge on the idealistic view of opportunity “as pre-existing and eternal” (Görling & Rehn, 2008, p. 97). A steady groundswell is growing in opposition to this conception of opportunity, indeed Gartner et al. (2003) go so far as to call it a bandwagon (Abrahamson, 1996) and suggest that if academics talk about opportunity in certain ways “it is likely that our language will constrain our ability to consider other possible meanings that may be used by others” (Gartner, et al., 2003, p. 104). Their argument is that pursuing the line of reasoning that opportunities are concrete realities just sitting around waiting to be discovered may ignore alternative viewpoints of the opportunity phenomenon. Davidsson (2003, p. 337) similarly raises the question: do “opportunities” exist “out there”, independently of a person identifying and acting upon the opportunity, or do entrepreneurs create “opportunities” where none existed before they conceived of them? He is not alone in asking this question. For example, “whether entrepreneurial opportunities exist in the world in some objective sense waiting to be discovered by some enterprising agent, or whether they are socially constructed has become a topic of urgent conversation” (Sarasvathy, Dew, Velamuri, & Venkataraman, 2002, p. 2). Additionally, “what if entrepreneurial opportunities were

not like mountains, just waiting to be discovered and exploited. Suppose instead, that these competitive imperfections were created by the actions of entrepreneurs” (Alvarez & Barney, 2007, p. 11). Suggestions that an opportunity might be created by the actions of an entrepreneur (Alvarez & Barney, 2007) build upon notions of effectuation (Sarasvathy, 2001a) and enactment (Weick, 1979) and proffer an alternative view that opportunities are socially constructed and emerge “out of the imagination of individuals by their actions and their interactions with others (Gartner, et al., 2003, p. 105). For example, Sarasvathy’s (2001a) effectuation has been the first attempt to develop a theory explaining how entrepreneurs can create new markets that do not already exist. The source of these new markets lies in entrepreneurial imagination and creativity, “action in pursuit of the imagined, deemed possible” (Shackle, 1982, p. ix). What is evident is that there has developed an alternative stream of thought to the dominant discovery viewpoint which is premised on opportunity recognition (e.g. Shane, 2000). The second stream coalesces around a viewpoint that opportunity is constructed or enacted (Vaghely & Julien, 2010).

In the creation theory perspective of this second stream of thought, opportunities are not assumed to be objective phenomena. Instead they are an outcome of the sensemaking processes of entrepreneurs (Daft & Weick, 1984; Hill & Levenhagen, 1995); or, “a function of enacted actions that occur during entrepreneurial processes (Short, Ketchen, Shook, & Ireland, 2010, p. 15). Further, opportunities are “created, endogenously, by the actions, reactions, and enactment of entrepreneurs exploring ways to produce new products or services...which do not necessarily lie in previously existing industries or markets” (Alvarez & Barney, 2007, p. 15). The environment in this instance is not an objective reality but one that entrepreneurs will construct through scanning, interpretation and action. Gartner et al. (2003, p. 109) note that this environment is “socially constructed, subjective and the product of an individual’s (organization’s) actions, rather than viewed as a set of fixed circumstances that must be responded to”. In this way it is actually the actions of the entrepreneur that are the source of the opportunity; opportunities begin as beliefs in the minds of entrepreneurs who “act upon their initial beliefs about opportunities and then observe the market responses, beliefs are transformed reflecting the acquisition and creation of knowledge and information” (Alvarez & Barney, 2007, p. 15).

Chiles, Bluedorn and Gupta (2007) add further layers to creation theory by introducing the radical subjectivism of Austrian economist Ludwig Lachmann who believed that “what people will do in a given situation depends largely on their interpretation of it and on the direction of their imagination” (Lachmann, 1977, p. 92). This means that the future is unpredictable and uncertain; “opportunities cannot be understood until they exist, and they only exist after they are enacted in an iterative process of action and reaction” (Alvarez & Barney, 2007, p. 15). In this respect an entrepreneur is in a problem space unlike that of a ‘discovery’ entrepreneur who operates under conditions of risk in an objective ‘knowable’ environment using optimizing or satisficing decisions (Eckhardt & Shane, 2003). Alvarez and Barney (2007, p. 17) note that “it is not possible to measure the height of a mountain that has not yet been created”. Put differently, “creating a firm in a market that does not yet exist involves understanding how to make decisions in the absence of pre-existent goals” (Sarasvathy, 2001a, p. 244).

Sarasvathy’s (2001a) theory of effectuation is advanced as a tool for “problem solving when the future is unpredictable, our goals are unspecified or simply unknown, and when the environment is not independent of our decisions” (Sarasvathy, 2004a, p. 525). Entrepreneurs who effectuate, solve problems associated with opportunity realisation in a different way. Sarasvathy (2001a, p. 245) defines effectuation as a process of taking “a set of means as given and focus[ing] on selecting between possible effects that can be created with that set of means”. The means provide the basis for direction. The effectual entrepreneur is one who “fabricates opportunities from the mundane realities of her (sic) life and value systems” (S. Venkataraman in the Preface, Sarasvathy, 2008, p. xiii) by starting with “who they are, what they know, and whom they know” (Sarasvathy, 2001a, p. 250). Thus, given that no prior information exists in this creative view of opportunities, entrepreneurs must construct their reality by looking to themselves and using information from the environment in which they are embedded (Vaghely & Julien, 2010). Read, Song and Smit (2009) extend the work on effectuation in a meta analytic review of its relationship to new venture performance in order to shed light on the underlying “found or made” (Alvarez & Barney, 2007) opportunity dichotomy. Operationalizing “Means - Who I am” as capital, assets, technological capabilities, internal R & D investment and patents; “Means - What I know” as domain-specific

expertise, and “Means - Whom I know” as the founding team’s network, individuals and entities which might offer resources to the new venture, Read et al. (2009) found initial empirical support for a positive relationship between an effectual strategy and new venture performance leading them to the “possibility that creation may be at the root of some start-up processes” (Read, et al., 2009, p. 585).

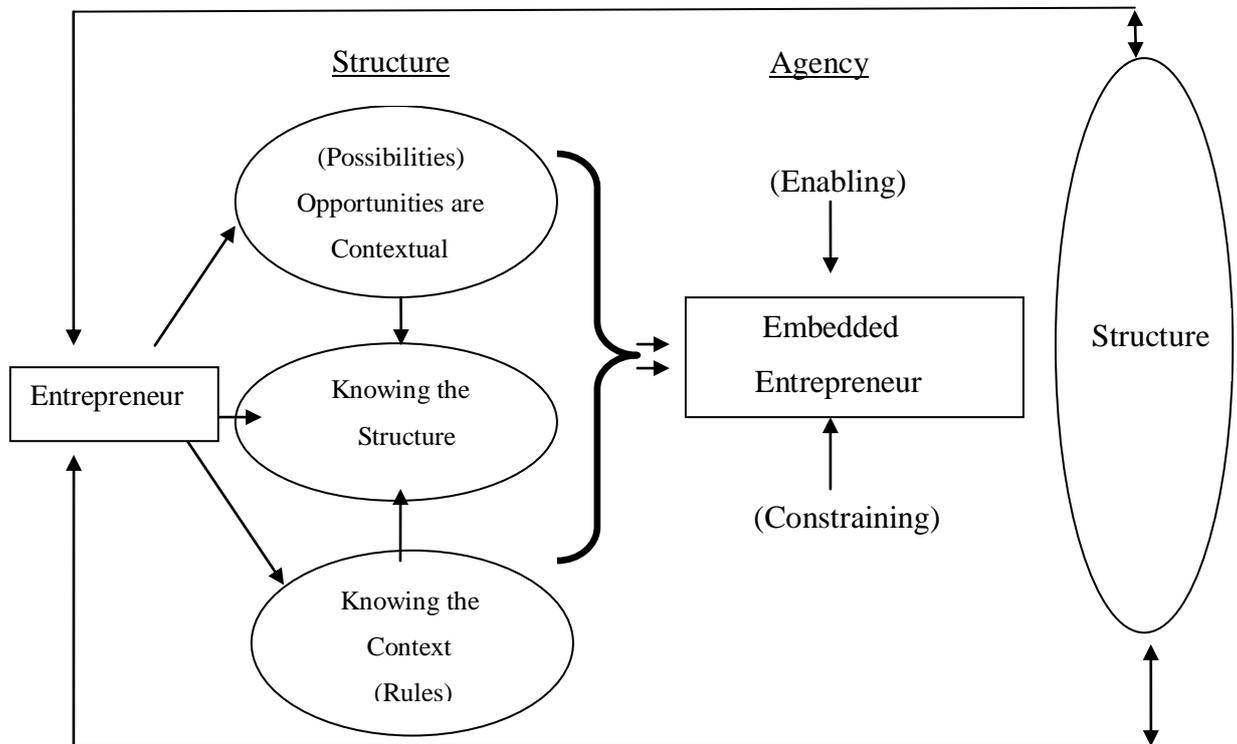
Rather than become embroiled in the discovery versus creation debate, some entrepreneurship researchers (e.g. Chiasson & Saunders, 2005; Jack & Anderson, 2002; Sarason, et al., 2006) have begun viewing opportunity through the lens of structuration theory (Giddens, 1979, 1984). Giddens (1984) aimed to bridge the gap between deterministic, objective, and static assumptions about the nature of social science on the one hand and the dichotomous voluntaristic, subjective, and dynamic assumptions on the other (Barley & Tolbert, 1997). This is a theory that reaches across the ontological divide by looking instead at how human activity shapes the very social circumstances in which it takes place (Layder, 2006).

Giddens (1984) challenged the entrenched oppositions found in social theory to form his theory of structuration. He believed that too much emphasis was placed on epistemological concerns about how we know what we allege to know, and that we should instead concentrate on ontological questions “such as what is the nature of the things we know – what is their reality” (Layder, 2006, p. 161). His general theory of human activity centres on a ‘duality of structure’. For Giddens, humans “create meaning and social reality from within social settings, and therefore social forms such as institutions and structures have no existence apart from the activities they embody” (Layder, 2006, p. 164). Thus, we should think of structure and action as having a dual nature, whereby “structure is intrinsically related to action and vice versa; they are two sides of the same coin” (Layder, 2006, p. 164). In other words, there is a mutual dependency. Further, structure is both enabling and constraining; it is not to be thought of as “a barrier to action, but as essentially involved in its production” (Giddens, 1979, p. 70). Structure shapes practice and practice shapes structure. In this way Giddens frames structure as being ‘virtual’. It has no existence beyond the situation in which human activity occurs; it is internal to activity. Sewell (1992, p. 4) explains that structures are “enacted by “knowledgeable” human agents (i.e. people who know what they are doing and how to do it), and agents puts into practice their

necessarily structured knowledge”. Therefore, this practicing reflects the ability of humans to “modify the circumstances in which they find themselves, while simultaneously recreating the social conditions (practices, knowledge, resources) which they inherit from the past” (Layder, 2006, p. 166).

Giddens suggested that structuration theory should be used in a selective way in empirical work as “sensitizing devices [rather than] providing detailed guidelines for research procedure” (Giddens, 1984, p. 294). The first empirical use of structuration theory within entrepreneurship was a study by Jack and Anderson (2002) who used these sensitizing devices to investigate whether entrepreneurship can be considered as an embedded socio-economic process. They narrow structuration down to the notion of embeddedness to explore the links between the entrepreneurial agent and the structure. In their qualitative study of seven rural entrepreneurs they found that by embedding themselves in the local social structure of networks; contacts and friendships the entrepreneurs were able to access resources and exploit opportunities that may not otherwise have been accessible. “Embedding is a way of joining the structure; by joining the structure one enacts it... the opportunities exist within the structure and only become manifest by the action of entrepreneurial agency” (Jack & Anderson, 2002, p. 484). Their research illustrated that opportunity identification is context-specific, but also that the entrepreneur needs to be socially embedded to understand the context and so capitalize on the opportunity. Further there is a circular process of embeddedness in both extracting from and contributing to the local environment. This relationship is portrayed in Figure 2.1 which reflects the duality of the relationship between agency and structure.

Figure 2.1
Structure and Agency in a Dynamic Relationship



Source: Jack and Anderson (2002) p. 482.

Chiasson and Saunders (2005) use elements of structuration theory as the basis for their theoretical paper on the diversity of opportunity research. They comment that research is characterized by an opportunity formation: opportunity recognition dichotomy and that structuration theory does away with the dichotomy to make them complements, suggesting that opportunities are both formed and created through scripts. They define scripts as “essentially recipes, borrowed, followed, and modified by individuals to get things socially and materially done” (Chiasson & Saunders, 2005, p. 751). In this way scripts seem to fulfil the same role as rules, or schemas. They are a ‘virtual’ or innate means of behaviour required to get things done in accordance with your wishes. Chiasson and Saunders (2005, p. 751) hold that individuals evaluate these scripts against three outcomes: whether they are “legitimate, meaningful and competent, and powerful”. These criteria again imply norms and boundaries of acceptable legal business behaviour. Barley and Tolbert (1997, p. 102) suggest that enacting these scripts may not even involve awareness or

intentional behaviour: “actors simply behave according to their perception of the ways things are”. If however a script is not right for getting things done it can be changed. This can also lead to power by doing things differently; “to see what happens” (Chiasson & Saunders, 2005, p. 752). Thus, entrepreneurial *experience* can be defined as “a person’s previous exposure to successful and unsuccessful scripts in the production of meaningful, powerful and legitimate business outcomes” (Chiasson & Saunders, 2005, p. 753). This bears resemblance to Weick’s (1979, p. 154) use of schema as “an abridged, generalized, corrigible organization of experience that serves as an initial frame of reference for action and perception”. By utilizing sensitizing elements of structuration theory, the premise offered by Chiasson and Saunders (2005) is that opportunity recognition is a process of script recognition by entrepreneurs who identify and select those scripts (presumably based on prior script success) whilst opportunity formation pivots on an entrepreneurial process of creating new and unique scripts.

A further development in entrepreneurship research underpinned by structuration theory focuses on the individual-opportunity nexus. Rather than adopt the dualism view that opportunities are separate and distinct from the entrepreneur, Sarason, Dean and Dillard (2006, p. 292) argue that entrepreneurs “both create and are created by the process of entrepreneurship and therefore can be constructively viewed as a duality”. They are two constructs “that cannot exist, or be understood separate from each other” (Sarason, et al., 2006, p. 289). Thus, opportunities are idiosyncratic, dependent on each entrepreneur’s situated perspective, which is also idiosyncratic. By viewing the entrepreneur-opportunity relationship as a duality each is inextricably interdependent; like the dancer and the dance (Yeats, 1956).

Sarason et al.’s (2006) theoretical paper starts from the basis that entrepreneurship is not simply a process of filling market gaps and imperfections. For them, “entrepreneurship is best characterized as a recursive process between entrepreneur and social systems wherein entrepreneurs as much create opportunities as discover them” (Sarason, et al., 2006, p. 289). They contend that the recursiveness of this process means that new ventures cannot be designed *ex ante* but must be an entrepreneur-system co-evolution and that the new venture is not deterministic but “inexorably affected by the individuality of the entrepreneur in his/her interpretation,

action, and reflection” (Sarason, et al., 2006, p. 290). Giddens (1984) places great stock on the fact that agents are knowledgeable people who are “capable of changing the circumstances in which they find themselves and of responding creatively to social constraints” (Layder, 2006, p. 181). Thus, Sarason et al. (2006, pp. 291-292) are led to suggest that agents can “reflect upon and modify interpretations...leading to actions that reinforce, modify, or create new opportunities”. Structuration theory provides a framework to explore how entrepreneurs “interpret and influence their world to accomplish their purposes” (Sarason, et al., 2006, p. 303).

Ardichvili, Cardozo and Ray (2003, p. 106) also avoid being caught in the ontological debate by commenting that “while elements of opportunities may be “recognized”, opportunities are made, not found”. Further:

Careful investigation of and sensitivity to market needs and as well as an ability to spot sub-optimal deployment of resources may help an entrepreneur begin to develop an opportunity (which may or may not result in the formation of a business). But opportunity development also involves entrepreneurs’ creative work. Therefore “opportunity development” rather than “opportunity recognition” should be our focus. The need or resource “recognized” or “perceived” cannot become a viable business without this “development. (Ardichvili, et al., 2003, p. 106)

Entrepreneurial opportunities exist primarily because different agents have different beliefs about the relative value of resources when they are converted from inputs into outputs (Kirzner, 1979; Schumpeter, 1934). How an entrepreneur sees and values those resources will therefore influence uptake of entrepreneurial opportunities, which are a sub-set of all opportunities because they “require the discovery of new means-ends relationships” (Shane & Venkataraman, 2000, p. 220).

2.5 Chapter conclusion

This chapter presented the key bodies of literature that are the three central streams of my thesis: design, resources and opportunity. The chapter has included topics that have surfaced in the entrepreneurship literature; particularly effectuation and bricolage. It has also visited the use of structuration theory as a sensitizing device to further our understanding of the socially constructed nature of entrepreneurship.

The next chapter of the thesis describes the methodological pathway and research approach I decided to use for my study. It traverses the paradigms of the social sciences and details the method I have employed to further understanding of the design-resource-opportunity connection of entrepreneurship.

Methodological Pathway and Research Approach

3.1 Introduction

The previous chapter reviewed the strands of the literature relevant to the design, resource and opportunity interface this study explores. This chapter describes the research approach, design and methodology I have adopted for the study and discusses the importance of finding an ontological and epistemological position that fits with my own views of reality and knowledge. The ethical principles of research and reporting are also considered, in particular regarding voluntary informed consent and confidentiality.

The chapter opens with a discussion on the philosophical assumptions that underlie social science research and the nature of ‘reality’ that guides and shapes methodological choices.

The wish to explore the phenomenon of opportunity development *from the perspective of those who experience it* is a pivotal part of my research and the chapter details how this phenomenological commitment has influenced the methodology. However, there is an adjacent corollary running through the thesis because whilst I explore opportunity development from the perspective of those who are actively experiencing the process, I am also exploring the phenomenon of opportunity development from my perspective; this is also a story of my journey as a researcher. My journey is effectively therefore both the medium and the outcome. The following quotation depicts the journey I have set out upon:

“The interviewer-traveller wanders through the landscape and enters into conversations with the people encountered” (Kvale, 1996, p. 1).

3.2 Research paradigms

The following section sets out the rationale behind the research planning process which I have adopted. The importance of posing two questions to oneself in planning research is stressed by Crotty (1998). Asking ourselves what methodologies and methods will be employed ensures that in their answer we have justified the choice which “is something that reaches into the assumptions about reality that we bring to our work” (Crotty, 1998, p. 2). Hughes (1990) notes that the relevance of philosophical issues arises from the fact that “every research tool or procedure is inextricably embedded in commitments to particular versions of the world and to knowing that world” (Hughes, 1990, p. 11). Asking, “what is the character of our knowledge of the world?” is an epistemological question which essentially means, “*what are to count as facts?*” (Hughes, 1990, p. 5, original italics). In this way when claiming a contribution to knowledge, whatever it may be, “one is also indicating a preparedness to justify that claim by pointing to the way in which one knows” (Hughes, 1990, p. 6).

Two major paradigms have dominated the social sciences (Taylor & Bogdan, 1998) and are considered to exist on a continuum with opposing views about reality and the ways in which human behaviour can be studied and explained. The first, *positivism*, traces back to the theorist Auguste Comte (1855) who, Easterby-Smith, Thorpe and Lowe (2002, p. 28) report, claimed “all good intellects have repeated, since Bacon’s time, that there can be no real knowledge but that which is based on observed facts”. There are two assumptions in Comte’s claim. Firstly, an ontological assumption that views reality as external and objective; and secondly, an epistemological assumption that knowledge is only significant if it is based on observations of this external reality. Thus, the positivist seeks the causes or facts of social phenomena with no regard for the subjective state of individuals. Researchers who adopt a positivist (also variously referred to as objectivist or functionalist) perspective are portrayed as viewing the social world “as if it were a hard, objective reality” (Burrell & Morgan, 1979, p. 3) that exists independently of those who live in it and search for ways to explain this reality. At its heart lies quantification; theory is deduced as a result of testing hypotheses. Key concerns are that measurement is reliable, valid and generalizable in its clear predictions of cause and effect. In this way an objective

truth can be revealed as existing in the world, proven by statistical relationships between variables. In other words, quantitative methods applicable to studying the natural sciences are applied to the social sciences in a quest to prove that the world has a “real” existence.

The second major paradigm stems from the diametric view that reality is not objective and exterior but is socially constructed and given meaning by people. Reality is what it is perceived to be. This is a marked movement away from the positivist paradigm where reality can only be approximated “through the utilization of methods that prevent human contamination of its apprehension or comprehension (Lincoln & Guba, 2000, p. 176). The following passage critiques the application of a natural science approach and the importance of the construction of social reality.

The world of nature as explored by the natural scientist does not ‘mean’ anything to molecules, atoms and electrons. But the observational field of the social scientist–social reality-has a specific meaning and relevance structure for the beings living, acting, and thinking within it. The thought objects constructed by the social scientist, in order to grasp this social reality, have to be founded upon by the thought objects constructed by the common-sense thinking of men, living their daily life within the social world.

(Schutz, 1967, cited by Bryman & Burgess, 1999, p. XII)

What seems self-evident is that with such opposing views of reality the two paradigms require different methodologies. The positivist researcher “fixates life by riveting it to the terms and grammar of forms of scientific theorizing that congeal the living meaning out of human living – until life itself has become unrecognizable to itself” (van Manen, 1990, p. 17). Conversely, the phenomenologist or interpretive researcher takes a picture of reality from a different angle and shifts its lens to the ground to capture human interaction as we enact our own reality.

Our individual personal reality – the way we think life is and the part we play in it – *is self created. We put together our own personal reality.* It is made up of our interpretation of the way things are and what has happened to us. *We literally create a reality that reflects our view of the world and who we are in relation to it.*

(Emery, 1978, cited by Lincoln & Guba, 1985, p. 73, original italics)

On this basis we can construct new fictions and open the way for innovation by seeing the same situation in different ways “juxtaposing insights to create new modes of organizational theory and practice” (Morgan, 1990, p. 20). Management of an organization therefore rests not on the manipulation of cause and effect relationships vis-à-vis functionalist organizational theory, but on an understanding of symbols or contextually based meanings. The phenomenologist is concerned “with an understanding of the way in which the individual creates, modifies and interprets the world” (Burrell & Morgan, 1979, p. 3). Methodologically, therefore, interpretive research does not predefine dependent or independent variables or aim to test hypotheses but “aims to produce an understanding of the social context of the phenomenon and the process whereby the phenomenon influences and is influenced by the social context” (Rowlands, 2005, p. 82) .

The methods of research in the ‘interpretive’ paradigm can be contrasted with those of the positivist paradigm. Table 3.1 which follows, contrasts the different approaches and illustrates the inappropriateness of the positivist paradigm to explore and gain an understanding of the entrepreneur’s experience in new venture creation.

Table 3.1
Contrasting Implications of Research Approaches

	Positivist	Phenomenological/ Interpretivist
The observer	must be independent	is part of what is being observed
Human interests	should be irrelevant	are the main drivers of science
Explanations	must demonstrate causality	aim to increase general understanding of the situation
Research progress through	hypothesis and deduction	gathering rich data from which ideas are induced
Concepts	need to be operationalized so they can be measured	should include stakeholder perspectives
Units of analysis	should be reduced to the simplest terms	may include the complexity of 'whole' situations
Generalization through	statistical probability	theoretical abstraction
Sampling requires	large numbers selected randomly	small number of cases chosen for specific purposes

Source: (Easterby-Smith, et al., 2002, p. 30).

3.3 Methodology used in the study

The selection of an appropriate research methodology is influenced by personal decisions made at the ontological and epistemological levels regarding reality and knowledge. By adopting an interpretive phenomenological paradigm this thesis is simultaneously constructionist because I am creating as much as representing the view of reality I am researching (Steyaert & Bouwen, 1997).

A further consideration in adopting an interpretive qualitative posture is justified after an initial perusal of entrepreneurship literature. For example, Steyaert (1997, p. 22) contends that entrepreneurship scholars have mainly followed a logo-scientific mode

of inquiry where the research “represents in an objective and accurate way the (entrepreneurial) reality out there” and notes the limitations of such predictive cause and effect relationships. “By its very nature, success in the field of entrepreneurship reflects changing internal and external environments. It is doubtful, therefore, that a formal predictive scientific theory of entrepreneurship will ever emerge” (Steyaert, 1997, p. 22). A meta-theoretical analysis of small business/entrepreneurship articles published over a year by key journals revealed that the majority were functionalist which “pervades the elite discourse of research in leading journals and acts as a barrier to other perspectives” (Grant & Perren, 2002, p. 202). As Jennings, Perren and Carter (2005, p. 147) sagely remark, functionalism “tends to write individuals out of the story”. *Verstehen*, or understanding of human meanings, intentions and actions is “essential to the generation of an adequate interpretation of a given social phenomenon...and thus requires a distinctive epistemological and methodological approach” (Curran & Burrows, 1987, p. 8). Clearly, entrepreneurship centres on the actor, or “is initiated by human volition” (Bygrave, 1993, p. 255) and therefore involves the study of human action and behaviour. Essentially it is concerned with the nature of reality in the social world where, in contrast to the natural world, human ‘subjects’ of the social world “possess the ability to think for themselves, comprehend their own behaviour and have an opinion about the social world of which they are a part” (Shaw, 1999, p. 60).

Whereas quantitative researchers press for explanation and control, qualitative research requires that researchers “understand the complex interrelationships among all that exists” (Stake, 1995, p. 37). We seek meaning and sense from natural settings “that describe routine and problematic moments and meanings in individuals’ lives” and consists of “a set of interpretive, material practices that make the world visible” (Denzin & Lincoln, 2000, p. 3).

From a phenomenological point of view, to do research is to question the way we experience the world, to want to know the world we live in as human beings. It aims at gaining a deeper understanding of the nature or meaning of our everyday experiences. Van Manen (1990, p. 9) explains that phenomenology “does not offer us the possibility of effective theory with which we can now explain and/or control the world, but rather it offers us the possibility of plausible insights that bring us in more

direct contact with the world”. Moreover, what we know about the world can only be known because we have become conscious of it. Consciousness is something to be known then after the fact. You can’t reflect on an experience whilst still experiencing it. In this way, phenomenological reflection is always retrospective; a recollection of lived experience.

Patton (2002) explains that the term phenomenology has become so popularized its very essence has become confused. Those who view it as a philosophy are influenced by the thinking of Husserl (1962) and Heidegger (1962). It has been viewed as a paradigm by, for example, Taylor and Bogdan (1998) and also a methodology (Schutz, 1967). For some it is considered as synonymous with qualitative methods or naturalistic inquiry, but it is nevertheless committed to “exploring how human beings make sense of experience...how they perceive it, describe it, feel about it, judge it, remember it, make sense of it” (Patton, 1990, p. 104). Unlike research approaches in other social sciences which may make use of experimental or artificial settings, phenomenological human science is interested in the human world as we find it and therefore finds its point of departure in the situation, the lived experience. Those using a phenomenological methodology have only one legitimate source of data, and that is the views and experiences of the participants themselves (Goulding, 2005). The aim is “to construct an animating, evocative description of human actions, behaviours, intentions, and experiences as we meet them in the life world” (van Manen, 1990, p. 19). Importantly, the description is always *one* interpretation; “no single interpretation of human experience will ever exhaust the possibility of yet another complementary, or even potentially richer or deeper experience” (van Manen, 1990, p. 31).

Adopting a phenomenological approach does have limitations, or more accurately, there are things it does not do:

- It is not an empirical analytic science so it does not describe actual states of affairs. Phenomenological knowledge is empirically based on experience but not inductively empirically derived.
- It does not allow for generalizations. Experience is unique and idiosyncratic.

- It is not merely speculative. Phenomenological research always takes as its starting point lived experience or empirical data.
- Phenomenology does not problem solve. Its questions are formed to elicit meaning; meaning questions cannot be ‘solved’ (adapted from van Manen, 1990, pp. 21-23).

Cope (2005) raised interest in a phenomenological approach for entrepreneurship research as an alternative to the objectivist, functionalist approaches that dominate research in this field. Instead of being located within the scientific method’s ‘context of justification’ a key differentiating aspect of phenomenology is its location within the ‘context of discovery’. It is useful therefore when exploring relatively new subject areas where by using the scientific discovery method the ability to discover or generate rich, substantive theory is curtailed (Cope, 2001). Instead, theoretical propositions emerge from the descriptions of experience given by those individuals under investigation. Furthermore, these theoretical propositions will neither explain nor control the world but offer the prospect of plausible insights grounded in the world of real life (van Manen, 1990). However, unlike some qualitative methodologies, such as grounded theory, phenomenology cannot be reduced to a ‘cookbook’ of instructions. It is “more an approach, an attitude, an investigative posture with a certain set of goals” (Hycner, 1985, p. 279).

It is a method used by Cope (2001) and Berglund (2005) in their doctoral theses and I hope my uptake will inspire other researchers in the entrepreneurship discipline to stretch their investigations in new ways. Such a methodological stance places the thesis within an emergent body of entrepreneurship scholarship that uses a qualitative methodology as its sole form of inquiry (see, for example, Anderson & Jack, 2002; Anderson & Miller, 2003; Berglund, 2005, 2007a; Cope, 2001, 2003; Jack, Drakopolou Dodd, & Anderson, 2008).

Having made the decision to employ a qualitative phenomenological lens through which to interpret the entrepreneurial design process, I then needed to establish how I was going to acquire the information. Given that phenomenology is concerned with the descriptions of experience, the interview was considered an appropriate method to acquire the information. The conventional interview approach conceives of

interviewees as “passive *vehicles of answers*” (Holstein & Gubrium, 2004, p. 144, original italics). However, an interpretive interview requires that the interviewee instead be actively involved in the construction of reality; “no longer objective data to be quantified but meaningful relations to be interpreted” (Kvale, 1996, p. 11). The importance of interviews is that it provides “the opportunity for the researcher to probe deeply to uncover new clues, open up new dimensions of a problem and to secure valid, accurate, inclusive accounts that are based on personal experience” (Easterby-Smith, et al., 2002, p. 86). Designing qualitative interview research therefore comes with its own set of challenges. Because the goal is to unveil these distinctive meaning-making actions there are limits on standardization and also the “working relevance of existing literature” (Warren, 2002, p. 86) when designing the interview itself. This is because every situation is unique and cannot be expected to conform to pre-existing interpretations of reality.

The qualitative interview “crosses an abyss of practice” (Easterby-Smith, et al., 2002, p. 87) between a totally open, non-directive structure to a pre-determined inflexible structure. Due to my quest being to seek understanding as to how entrepreneurs might construct their own reality in light of their available resource base it is, therefore, important that the interview facilitate access to those insights and an in-depth interview offers a way to bridge these extremes. Whilst I want to explore the two metaphors in a fairly consistent manner with the interviewees, their individual stories in opportunity and resource development are the underpinning essence that I seek to capture.

In light of my initial framework I aim to explore certain concepts more than others; I am after all interested in resources and opportunities and how an entrepreneur links the two. However, I am also aware that I should not be ‘tied up’ by that framework because experience is embedded in the person and the context. What is important is to keep emergent interpretations generated from the data as close as possible to the interviewees’ experiences so that this academic account remains authentic and identifiable to the entrepreneurs represented (Cope, 2001).

The in-depth interview provides the data material. I made the decision to take a two-pronged approach to the data. In the first instance I wanted to ensure that the unique

stories of the entrepreneurs were given voice which suggested a narrative approach. In this regard the interview can be regarded as a “storytelling arena” (Johansson, 2004, p. 275). Secondly, I was also keen to follow the analytical process utilized by Cope (2001) and Berglund (2005). Interpretive Phenomenological Analysis is a process that enables meaning to be broken out of the text, and thereby facilitates the generation of themes. It is an analytical method essentially aimed at collecting entrepreneur’s lived experiences of opportunity development; the interviewee is considered as the “experiential expert and should be allowed maximum opportunity to tell their own story” (Smith & Osborn, 2003, p. 57). By taking a two-pronged approach to exploring the opportunity-resource connection I was going to have two outputs: stories narrated by the entrepreneur that embody their “knowing-in-action through experience” (Johansson, 2004, p. 279), together with analytical themes also capturing their experience.

Narrative is a textual form in which a story is told: “events and happenings are configured into a temporal unity by means of a plot” (Polkinghorne, 1995, p. 5). In recent years, the possibility of adopting a narrative approach to entrepreneurship research has garnered increased interest, with a leading proponent commenting that “the shortest way from experience to knowledge goes through stories” (Johansson, 2004, p. 273). I have adopted the narrative approach to tell the opportunity and resource stories of the entrepreneurs as they unfolded. The proviso being that what is said one day may not be what is said the next; it is simply a representation and construction of that moment in time and informed by the entrepreneur’s story. The central aim is to provide rich descriptions, contextual understandings and emergent interpretations of the phenomena in question, presented in narrative vignettes as a presentation device and thus as a vehicle for articulating entrepreneurial experience (Johansson, 2004).

According to Cope (2005, p. 170, existing italics) a key differentiating aspect of phenomenological inquiry over positivist methods is the “*explicit* recognition that any explanations given of phenomenon are at best “here and now” accounts that represent a ‘photographic slice of life’ of a dynamic process that, in the next instant, might represent a very different aspect”. Anyone’s interpretation of any event is contingent

upon the context at the time. Hypothetically for example, what may be portrayed to a confidante as the worst experience of a life might be confided to another as the best.

3.3.1. Sampling method

Positivist researchers depend on large quantitative samples from which to justify theoretical output, however those researchers employing alternative genres rely on a flexible, emergent research design in which “neither the number nor type of informant need be specified beforehand” (Taylor & Bogdan, 1998, p. 92). Qualitative sample selection has no rules; it just depends on what you want to know (Patton, 1990). The concept of ‘purposeful’ sampling is introduced by Patton (1990) as an alternative to the random probability sampling requirements of the hypothetico-deductive scientific approach. This sampling method gains its logic and power because of its emphasis on “in-depth understanding” (Patton, 2002, p. 230). With the proviso that generalizability is not assumed then a small sample size is appropriate for obtaining rich deep information (Smith, Gannon, & Sapienza, 1989). This is of particular relevance to phenomenological methods for which statistical considerations are of no concern (Berglund, 2007b).

Following Berglund (2005, 2007a), my aim was to focus on identifying a manageable group of entrepreneurs suitable for exploring my area of interest. The aim was “not to present intrinsically interesting cases or to represent some general population but rather to gain a more detailed picture of the phenomenon” (Berglund, 2007b, p. 83). To ensure that participating case entrepreneurs would provide information rich data I employed an initial sampling strategy of purposeful selection. In this way I could ensure that the only legitimate source of data was “the views and experience of the participants themselves” (Goulding, 2002, p. 23); those that had started a new venture.

Researchers utilizing Interpretive Phenomenological Analysis try to find a homogeneous sample for whom the research topic will be relevant (Smith & Osborn, 2003). I drew my sample from residents of a New Zealand business incubator. These entrepreneurs were actively involved in developing business opportunities within the knowledge intensive industries favoured by government policymakers and could be

expected to display 'entrepreneurial' behaviour per se. These knowledge intensive industries can all be considered to be 'high tech' in that they utilise advanced technologies and can be considered as offering greater potential for growth; for themselves and the economy. Additionally, because they were companies operating within an incubator, the assumption I made was they would be fledgling companies with limited initial resources and therefore likely to share characteristics. Criterion sampling ensured that the interviews I held were with the founding entrepreneurs; those who had first recognised the opportunity to start the business. I established this by researching the New Zealand Companies Office website and the information available on the incubator website. For two of the companies it was not clear who the founder was. Additional interviews were carried out with the co-founders at the behest of the entrepreneur because they felt it was a joint opportunity development process. Two additional entrepreneurs were subsequently purposefully included to ensure a wider range of cases. One 'un-incubated' entrepreneur and one 'post-incubator' entrepreneur made a total of fourteen interviews. I need to emphasise that the relative smallness of the New Zealand incubator scene, in combination with my ethical undertaking to ensure anonymity to the entrepreneurs in the study, precludes further identifiable details of the research site.

To commence my study I first did a pilot study with an entrepreneur whom I had previously interviewed (Baeyertz, 2004). As a relatively novice interviewer I felt it was important to develop my interviewing technique with someone who I had met and who I also knew to be amenable to being re-interviewed. I developed an interview guide to make sure key topics from the framework guiding my study were explored and to ensure that my two "grand-tour" metaphor questions were understood (Taylor & Bogdan, 1998, p. 102). This guide effectively worked as a 'prompt' mechanism to ensure that the metaphors were traversed in a consistent manner. The transcript from this 'un-incubated' entrepreneur interview was subsequently incorporated into the data analysis because I felt the experience of this particular entrepreneur was worthy of inclusion.

In conclusion it should be emphasised that the sample was not chosen to be representative of 'entrepreneurial people' and that is not an objective of qualitative research. Moreover, each entrepreneur was interviewed for his or her personal

experience in opportunity development and as such every individual story was unique and idiosyncratic and unable to be generalized across the range of 'entrepreneurial people'. Stake (2000) advises thus:

The researcher examines various interests in the phenomenon, selecting a case of some typicality, but leaning towards those cases that seem to offer the *opportunity to learn*. My choice would be to take that case from which we feel we can learn the most...potential for learning is a different and somewhat superior criterion to representativeness.

(Stake, 2000, p. 446, original italics)

The following section will describe how the research was actually conducted in the research setting utilizing the qualitative methodology of semi-structured interviewing, narrative generation and Interpretive Phenomenological Analysis.

3.4. Interviewing the entrepreneurs

This section details the methods with which I collected the data from the fourteen entrepreneurs. Narrative accounts will be developed using the recordings and the transcripts to provide rich holistic accounts of the individual opportunity and resource development process. The transcripts will also be analysed using Interpretive Phenomenological Analysis, bearing in mind the advice of Hycner (1985) that it is an investigative approach and attitude rather than a set of rigid rules.

I contacted each of the entrepreneurs by telephone explaining that I was doing doctoral research and that my objective was to gain insight into entrepreneurial opportunities and how the resources they had available allowed them to tap into those opportunities and overcome problems. I explained that I would like to interview them at their convenience and that the interview would take no longer than 45 minutes of their time. This I had been able to ascertain following my pilot interview. None of the fourteen entrepreneurs declined to be interviewed although one did arrange a time and subsequently had to cancel. However, I did persist and was rewarded with an interview some weeks later. Another entrepreneur arranged a time and was not there when I arrived, much to his embarrassment. A subsequent arrangement was made and the interview was completed.

I emailed each of them immediately after making meeting arrangements attaching an Information Sheet which outlined the background to my research and detailed ethical guidelines. (Refer Appendix). Contact by email also gave them a return email address which was used by the one entrepreneur who initially cancelled.

Nine interviews were conducted in a neutral meeting room within the incubator premises; one interview was conducted in the entrepreneur's office because he was the only one around to answer the telephone; one interview was held in a coffee bar; one in the entrepreneur's own home; and two were interviewed in their own offices; one located a forty-five minute drive away, the other a mere five minutes.

3.4.1 Ethics and my personal integrity

As a means of breaking the ice and getting conversation flowing I first dealt with the 'housekeeping' matters of form filling which relate to University ethical guidelines. Permission to record the interviews was gained and Participant Consent Forms and Authority for the Release of Digital Transcript Forms were signed by each respondent in accordance with these guidelines. These are presented in the Appendix. The data I collected was highly confidential and I assured each respondent their anonymity would be maintained throughout the research and in the presentation of my findings. Their real names have not been used and I have endeavoured to ensure that data of an intrinsically strategic nature not be directly traceable to the entrepreneur's company. For this reason additional information relating to the incubator as the research site is not provided. I also assured them of my personal integrity in not abusing or manipulating the data in any unethical way. At the completion of the interview I also asked the respondents to fill in a single-page Fact Sheet (see Appendix) based on a style utilized by de Bruin and Flint-Hartle (2006). Table 4.1 presents a profile of the founders and their venture. One respondent was not prepared to state his turnover. Whilst filling in the sheet there were also some interesting 'musings' which emphasises the importance of keeping the recorder going until the meeting has completely finished. Musings arose at various stages of the interviews and are employed as such to add richness and elaboration.

I opened each interview by asking them to tell me their opportunity story and allowed each entrepreneur to simply talk; only probing thereafter to get more specific details. The stories were wide ranging, in some cases providing background context over many years of business operations. From the stories I was able to glean a rich firsthand account of the experiences associated with venture development.

After I had heard their stories and felt that their first hand experiences were fully recounted, I introduced metaphor into the interview by asking the entrepreneurs to consider two concepts; one based on opportunity and the second, resources. These two metaphor 'prompts' were consistent throughout the interviews and introduced only after I had elicited their own narratives. The first metaphor related to extant literature on discovery versus creation theories of entrepreneurial action that had fuelled my imagination (Alvarez & Barney, 2007). I asked:

Just to think a bit more about opportunities now... Some say opportunities exist out there just waiting to be discovered – a bit like Mt Everest just sitting there waiting to be climbed. Others say some opportunities are not like mountains, just waiting to be climbed, but have to be created. This is mountain building, rather than mountain climbing. So, how would you describe your business opportunity?

The second metaphor was aimed at the resource story:

New Zealander entrepreneurs are frequently described as being good at making do with what they have; that sort of no 8 wire ingenuity where you can do lots of things with nothing much, or even doing things on the smell of an oily rag...

As part of the preparation process for the interviews I had prepared a guide encompassing personal prompts in order to ensure that the two metaphors were raised in a consistent fashion. For the first interview I followed the guide rather nervously. As I felt more comfortable in my journey, however, I was able to probe more and refer to the guide less in subsequent interviews. I nevertheless retained a constant

‘underground’ antenna to ensure stories were based on the entrepreneur’s opportunity and resource experience and also to ensure that interviews kept within a reasonable time frame.

Interviews were scheduled to fit with the entrepreneur’s diary and at their convenience. The earliest was scheduled for 8.30 am, the latest was 6.45 pm. The shortest interview was just over twenty minutes; the longest just over an hour. All interviews were recorded on a digital pocket recorder and transcribed verbatim using Express Scribe, a free transcription programme I downloaded from <http://nch.com.au/scribe/index.html>. Transcription was challenging in two of them. The clatter in the coffee shop interview was at times simply too loud and despite spending an inordinate amount of time in listening and re-listening to the interview I just had to accept that there were some sections I simply could not hear enough to transcribe. The other interview suffered from a particularly soft spoken entrepreneur being too far from the recorder for it to pick up his voice at times. The transcribed interviews became the text from which storytelling and interpretation ensued.

3.5 The data analysis process

One of the most challenging, daunting and difficult aspects of conducting qualitative research, particularly in-depth phenomenological research, is the initially staggering volume and diversity of data that arises from the interview process (Eisenhardt, 1989). My study is no different. The initially staggering volume and diversity of data with which I had to work was challenging and, given that the analysis of qualitative data is the least codified and least well described aspect of research methodology (Hartley, 1994). I could best describe my interpretive process as intuitive and emergent. I had also made the decision not to use a qualitative analysis software package. Technology is frequently considered to be both an enabler and a constrainer and I felt that whilst using the computer for word-processing was enabling, using a software package with which I was not familiar and had no experience would be constraining. I was also very keen to stay close to the data and to understand the phenomenon of opportunity development from a hands on, getting ‘down and dirty’ process whilst also learning how to do good analysis. Easterby-Smith et al. (2002, p. 129) claim that a relatively small data set (fewer than 20 in their

view) may not justify the investment of “ time, money and energy” in a software package.

This section details how I went about finding the meaning of the many interesting and complex stories I had heard using Interpretive Phenomenological Analysis. It is not a prescriptive methodology, as Giorgi and Giorgi (2003a, p. 252) remind, the method is “judged by its outcome, not by intermediary stages” but I relied on a small number of authors to help me with my approach. Berglund (2007a), Cope (2001, 2005) and Hycner (1985) were particularly useful, but I also drew on Giorgi and Giorgi (2003a, 2003b), Kvale (1996) and additionally, Smith and Osborn (2003).

Firstly, I transcribed the interview and then read and re-read, listening to the interview concurrently, to become as familiar with it as I could, to get a sense of the ‘*gestalt*’ (Hycner, 1985). At this stage I highlighted phrases and made notes or memos to myself on the hardcopy. This was an iterative process as I looked at the words and sought to understand what was going on. Back on the word-processor I then engaged in an interpretive process as I went through the transcript on a word-by-word, line by line basis looking for changes in meaning; a ‘meaning unit’. This is defined by Hycner (1985, p. 282) as “those words, phrases, non-verbal or para-linguistic communications which express a unique and coherent meaning (irrespective of the research question) clearly differentiated from that which precedes and follows”. At each meaning unit I broke the text (by using the enter key) and continued this for the entire transcription. Even if I felt the meaning unit to be irrelevant to my purposes I included it at this stage of the process. I needed to constantly bear in mind that there were no ‘objective’ meaning units; they were what I was seeing in the transcript. Another researcher may well have ‘seen’ different meaning units. I was aiming to try and understand the content and complexity of those meanings rather than be able to measure their frequency (Smith & Osborn, 2003). By the time this was done I had a document broken into discrete parts of literal words, or meaning units, following Hycner’s (1985) analytical procedure. The meaning units were retrospective descriptions of how the interviewee had actually lived through and interpreted opportunity development; it was a description of what it was like for the participant. This is a process Kvale (1996, p. 192) calls “meaning condensation [which] involves a reduction of large interview texts into briefer more

succinct formulations”. An important consideration was to ‘bracket’ any preconceived ideas I had about opportunity development so that the entrepreneur was the experiential expert and any extant literature was held at bay until the writing up process (Giorgi & Giorgi, 2003b).

For the second stage I went back to the beginning of the transcript and deleted the meaning units I felt were non-essential to the experience of opportunity development. I found all the interviewees very keen to talk about what their product or service actually did rather than the development process experience behind it, so in the interests of relevance and parsimony I kept these details out of the analysis. Hycner calls this “eliminating redundancies” (1985, p. 286). Thirdly, I created stand alone word processing package ‘text boxes’ next to each meaning unit containing tentative descriptive concepts. Giorgi and Giorgi (2003b) phrase this transformation as making the implicit explicit. Also I sought to move “from the concrete lived situation as an example of something and clarify what it was an example of” (Giorgi & Giorgi, 2003b, p. 34).

At this stage I cut and pasted the contents from each text box into a new document so that each tentative description from the last stage was now its own text of meaning units. Once again I formatted the document so the text was on the left hand side. Staying as close to the data as possible, I endeavoured to determine if any of the meaning units naturally clustered together into units of relevant meaning. In other words, whether there seemed to be some form of commonality. This required “that ineffable thing known as creative insight” (Hycner, 1985, p. 288). Cutting and pasting I moved the meaning units into what seemed to be groups with a common theme. Once again I created text boxes next to these themes to describe what was going on. This was essentially interrogation of the meaning units in terms of the specific purpose of the study (Kvale, 1996). In addition I was cognisant of Smith and Osborn’s (2003) advice that themes “are not selected purely on the basis of their prevalence within the data. Other factors, including the richness of the particular passages and how the theme illuminates other aspects are taken into account”. This turned out to be welcome advice when the time came to interpret and analyse the themes because it could have been easy to overlook some of the subtleties in the data.

Whilst undertaking this process I was simultaneously cutting and pasting into another document, quotations that I felt were particularly illustrative of the individual's experience in relation to opportunity development. These quotes also formed the backbone of the opportunity and resource stories of the entrepreneurs, which are presented in chapter four. In so doing I have drawn upon Wolcott's (1994) advice that there are three possible methods of presenting the collected data. The first is a descriptive method that implies that the data is fact and that the facts speak for themselves. The second method analyses the data systematically to identify key points whilst the third method follows these two but extends to include understanding and explanation. I have used descriptive narrative accounts of the opportunity without incorporating my interpretation of events. In this way I was able to stand back and let the entrepreneurs speak for themselves, an essential component of the integrity of my thesis. Thus, this descriptive phase presents the participants' words about their opportunities as they make sense of their past experiences (Johansson, 2004).

I repeated the process outlined above with all fourteen interviews analysing each transcript by this iterative interpretive process. As I was working manually in order to keep close to the data I decided at this stage the best way to bring cohesion to the common themes was to physically interact with them. I printed each transcript (which was now descriptions of condensed meaning units in text boxes), cut out each text box and grouped them together in common themes. I then systematically worked through these piles of common themes to establish what I felt to be an overriding description. This was a time consuming and arduous process but I felt working with the data in this way meant I wouldn't miss out on any subtleties in the lived experiences. It was a very hands-on and iterative process as I spent day upon day immersed in piles of cut out coding; sorting pieces of paper into categories, themes and concepts and undertaking 'detective work'. I had broken each transcript into units of general meaning and I was in this way also able to compare these units against the coded piles, and undertake a form of cross analysis as the experiences of the participants could be compared against the codes and the common themes that were emerging. This was an inductive process as all the patterns and themes and categories that emerged came from the data. What I was seeking was Patton's (1990, p. 390) "natural variation" in the data. I also was bringing my own sensitizing

concepts to the data which provided “directions along which to look” (Blumer, 1969, p. 18). I was looking for insight into both the entrepreneur-resource relationship and entrepreneur-opportunity relationship and seeking to break up the complexity of reality into parts that would allow me to make sense of the data and convey the direct experience of my participants.

There are a number of considerations at this point. Thompson et al. (1989, p. 140) advise that the text is an autonomous body of data which has two methodological aspects. Firstly, “there is no attempt to corroborate a respondent’s descriptions with external verification... description cannot be construed as “copies” of past events, but as reconstructions emerging in the interview”. Secondly in terms of the autonomy criterion “the interpretation should not incorporate hypotheses, inferences, and conjectures that exceed the evidence provided by the script” (Thompson, et al., 1989, p. 140). In other words, the experience described or recounted in the interviews is to be accepted for what it is; personal idiosyncratic lived experience. Section 6.3 addresses limitations of my thesis further.

3.6 Chapter conclusion

In this chapter I discussed the paradigms prevalent in social research and their relevance to this thesis. I outlined the rationale behind adopting a phenomenological qualitative methodology and described the process by which I handled the transcripts and the data in order to develop the stories and the themes. The next chapter – four, tells their opportunity and resource stories. It also introduces a visual element to each story in order to convey my interpretation of their entrepreneurial capital development pathways. Themes capturing the meaning of the entrepreneurs’ experiences arising from the Interpretive Phenomenological Analysis will be presented in chapter five.

The Opportunity and Resource Stories

The universe is made of stories, not atoms (Muriel Rukeyser)

4.1 Introduction

This chapter is the first of two chapters where I present and discuss my findings. The opportunity and resource stories that I distil from the interviews are set out here and the following chapter interprets the meaning of these stories. Qualitative researchers need to be story tellers (Wolcott, 1994) and this chapter is a narrative representation of the opportunity and resource development of the fourteen respondents in my study. Additionally, in order to simplify the complexity of each resource story, visual diagrams show the connections and interrelationships of resources that underlie the process of entrepreneurial capital development.

The chapter presents twelve stories. For each of the two sets of co-entrepreneurs¹¹ it was not possible to separate the interwoven strands of their interconnected stories. These are therefore combined into single holistic accounts resulting in twelve descriptive stories from fourteen interviews. Wolcott (1994, p. 16) comments that descriptive aspects of an account might better be regarded as “implicit interpretation”. In this chapter therefore the stories presented involve implicit construction. Explicit

¹¹ Co-entrepreneurs are any combination of two or more parties involved together in the operation of a business irrespective of marital status, gender, and division of work tasks and functions among them (de Bruin, 2006).

interpretation is engaged, but deferred to the following chapter when the themes arising from the Interpretive Phenomenological Analysis of the data are discussed.

The concept of entrepreneurial capital (see section 2.3.3) is used to highlight how different forms of an entrepreneur's initial resources are mobilized and then augmented. In my entrepreneurial capital development accounts, I follow Shaw et al. (2008) to separately distinguish symbolic capital. Firkin (2003) includes reputation as a component of human capital in his elaboration of entrepreneurial capital. Length of tenure and work experience for example is likely to have a flow through to personal reputation. However, Shaw et al. (2008) advance an updated and superior view of entrepreneurial capital. Rather than reputation being endogenous, Shaw et al. (2008) establish its interrelationship with not only human but also economic and social capital. In particular, attention is drawn to its convertibility into symbolic capital. For the sake of clarification I have considered initial symbolic resources as being intrinsic to the entrepreneur, following Firkin (2003). Thus, the existing reputation of a respondent formed for example over years of industry experience and which might play an integral part in the design process, is considered a component of initial human capital. However, in terms of the subsequent development process, this study envisages symbolic capital as a resource in its own right and one which plays a significant role in building legitimacy in a new venture. Included are external symbols of recognition manifested in awards which also have convertible value for the entrepreneur in terms of enhanced prestige and reputation. It needs to be noted that if the entrepreneur did not personally refer to receiving awards, for example, that may contribute to the development of symbolic capital, I followed the advice of Thompson et al. (1989) that interpretation should not exceed the interview material. Therefore some entrepreneurial capital development figures may not feature a symbolic capital component. Organizational capital also needs clarification. Although it can comprise the relationships, routines and culture of an organization (c.f. Firkin, 2003), in this study I use employees as a tangible indicator of organizational capital. If by contrast, external contractors are used by the business, I do not consider this as contributing to organizational capital.

In this study, initial entrepreneurial capital can consist variously of six types of resources: human, social, financial, organizational, physical, and technological.

Symbolic capital makes up the seventh component of entrepreneurial capital that is built and developed over time, with the earlier proviso.

The chapter is organised as follows. The next section presents individual vignettes of the fourteen entrepreneurs to introduce some context to the ensuing opportunity and resource stories. It concludes with Table 4.1 which profiles the founders and their businesses. Following that the twelve stories are presented. The respondents' words are incorporated in *italics* in order to illuminate the richness of their narratives. Each of the twelve story sections has a subsection based on interview material rather than any conjecture on my part, following the advice of Thompson et al. (1989, p. 140) that "interpretation should not incorporate hypotheses, inferences, and conjectures that exceed the evidence provided by the script". In particular, I should emphasise that if the respondent did not mention being the recipient of an award, I did not necessarily attribute them with symbolic capital. I found later, for example, that Ted had been the recipient of a number of awards during his entrepreneurial endeavours but he did not draw on this whilst telling his story. I felt this added to my own integrity as a researcher and "creator of the reality under scrutiny" (Johansson, 2004, p. 274).

Each subsection incorporates both a visual form and a descriptive overview of the process by which initial entrepreneurial capital was built and developed. In the case of the two sets of co-founders their individual resources and subsequent development process are combined into a single entrepreneurial capital figure. When I have been unable to glean any information from the interview or the Information Sheet about an entrepreneurial capital component, this is also denoted in each of the figures and an initial absence of any component is illustrated with a dashed outline. Prior to the conclusion, section 4.15 presents two tables, each of which capture the essence of the metaphors utilized in the interviews.

4.2 Vignettes of the research participants

The information for the following vignettes was gleaned from Fact Sheets (see Appendix) that the fourteen entrepreneurs filled out, and is supplemented with material from the interviews. Tim is the only entrepreneur who had not been a

resident of the incubator. Four of the ventures had been with the incubator effectively since its inception, fulfilling the function of ‘anchor tenants’. This arrangement capitalized on the individual stocks of experience of these founders as a means of helping mentor the less experienced and mostly younger residents. I have given new names to all the participants and removed any identifying characteristics to preserve their anonymity.

Tim is in his late thirties and wanted to start his own business. This venture within the telecommunications industry was founded on a whim. Although he has an LLB and Master of Commerce (Hons) he had no previous experience in the industry. After seven turbulent years his company employs four full time staff members and has a turnover of less than \$150,000.

Bob is over 60 and comes via the school of hard knocks. Redundancy put him in a situation where he was able to draw upon his extensive experience and knowledge within the medical software industry. After 10 years he employs 10 full time and two part time staff members. Turnover is approximately \$1 million.

Jon is in his early fifties and armed with a BA in Economics spent many years working within the banking industry. His venture is in the financial service sector with former colleague, Sue.

Sue is a co-founder with Jon and is aged between 56 and 60. She has gained various management credentials over the years. As a team they have complementary skill sets. After eight years they choose to have no employees and have a \$470,000 turnover.

Ian is in his early 30s. Previous professional experience was in an unrelated sphere. However his venture does build on new industry knowledge he has developed since he started working in the educational training industry. After four years his turnover is over \$300,000. The venture has two fulltime and one part time employees plus a contractor.

Kit has a PhD and wanted to start his own business. He has spent the last three years developing software for an opportunity that he researched as a University staff member. Although he has one external contractor, he reports his turnover as zero. He is in his early 40s.

Ben is under 30. His venture centres on research, design & development opportunities that he and his older more experienced fellow colleagues were unable to capitalize on as University staff members. After three years there are two full time staff members, five employed on a part-time basis and they access a team of up to 10 contractors as required. Turnover is in the vicinity of \$750,000.

Jim is in his early 30s and has a Diploma in Business Administration. He had met Rex whilst studying at university and their friendship had subsequently involved working together. They are co-founders in a software development company. He has industry experience in the sector they are targeting.

Rex is a co-founder with Jim. He is in his early 40s and has a Master of Science (Hons) and MBA. They employ eight staff members full time and two on a part time basis. Turnover over is approximately \$250,000. They both work in external full time employment which is financing the software development and they both put an additional 40 hours a week each into this venture.

Roy has had a career in the forces and now aged between 46 and 50 has spent the past eight years developing this opportunity, leveraging against his prior knowledge and experience within the sector his software targets. With 3 full time and 2 part time staff together with 2 contractors he declined to comment on his turnover.

Guy is aged in his late 30s and is an accountant by trade with experience in developing accounting system software. Reconfiguring into an R & D company has resulted in a turnover of \$1,700,000 with 10 full time staff and 3 part timers as they develop software and hardware solutions to aging infrastructure problems.

Sam has a Bachelor of Agricultural Science and an MBA and is in his early 50s. He developed the opportunity in the enterprise development sector in which he was operating because he could not find the software he needed for his own business. After nine years the company turns over \$1 million and has 10 full time employees and 6 part timers.

Ken is in the 56-60 age group and has spent the bulk of his adult life developing ventures within the travel industry. The current venture is the main one of about six ventures he is currently involved in that draw upon his interest in the

application of new technologies. He is therefore both a portfolio entrepreneur running several ventures simultaneously and a serial entrepreneur having developed ventures sequentially over many years. After 10 years his current venture[s] employs 15 full time staff members and has a turnover of over \$600,000.

Ted has a Bachelor of Commerce and is in his late fifties. He developed his first venture when he was 14 reflecting his serial entrepreneurial nature. He developed the software for this venture over 20 years ago which has a turnover in the vicinity of \$10,000,000. He is no longer actively involved in the day to day running of the business but is the Chairman.

The salient features of these vignettes are presented in Table 4.1 which details their age bracket, the age of the business and approximate turnover (with the exception of Roy). The two sets of co-founders are bracketed together.

Table 4.1
Founder and Business Profile

Founder		Business	
Name	Age Bracket	Age of Business	Approximate Turnover
Jim	31-35	2 ¾	\$250,000
Rex	41-45	2 ¾	\$250,000
Ben	26-30	3	\$750,000
Kit	41-45	3	\$0
Ian	31-35	4	\$300,000
Tim	36-40	7	\$150,000
Guy	36-40	7	\$1,700,000
Roy	46-50	8	Declined
Jon	51-55	8	\$470,000
Sue	56-60	8	\$470,000
Sam	51-55	9	\$1,000,000
Ken	56-60	10	\$600,000
Bob	(60+)	10	\$1,000,000
Ted	56-60	20	\$10,000,000

4.3 Tim's Opportunity and Resource Development

Tim is the only interviewee who has not been located in the incubator. However, as mentioned previously, Tim was interviewed for my pilot study and was subsequently included in the main body of the study because his opportunity and resource development story added richness and variety.

Tim's business is located in a building on South Auckland's industrial fringes with no hint of his tenancy. His office has no signage because he was able to utilize two rent free offices above a factory. He runs a business whose growth phase he describes as "*treading water*". When asked whether he would describe his business opportunity as a mountain climbing or mountain building variety, Tim laughingly said that they were "*still at base camp*". Elucidating, he commented that he felt opportunities fell into one of two types. The first, "*the easy way*" falls into your lap because someone has already done the hard work, with inheriting or buying into a business being his examples. His was the hard way and, "*if the mountain was already there and it was wonderful – great – but that is not how we've found it*". Table 5.2 captures his opportunity perception, not as the discovery type but as a creation.

His desire to build his own mountain stemmed from his motivation to be his own boss although, as he commented, "*if we knew what we were getting into we would never have done it*". He had the idea for his business opportunity whilst on his OE¹², returning back to New Zealand and relying on the generosity of "*friends, family and colleagues*" to provide the \$5,000 seed capital, together with rent free offices, rent free board, and hand me down computers. And then, "*just had to work it all out from the very very beginning and make all the mistakes*". He did not have any prior involvement in the industry, "*didn't know any of the right people*", although he was able to draw upon previous business experience. Government grants facilitated software development and Intellectual Property (IP) patenting as they "*muddled along*". He qualified this by saying "*we didn't know who our customers were, who*

¹² 'OE or 'Overseas Experience' is a New Zealand term for an extended overseas working holiday.

our partners might be, we didn't know anything about anything". And then: the start of the roller coaster ride. *"It looked like it was all going extremely well. Exactly what we thought would happen did, we sold it to an operator in Australia"*. The sale led to rapid expansion of staff, and finally a salary for himself after years of doing without, when they *"sometimes wished for the smell of an oily rag"*, implying that he had been under severe financial constraint.

On the back of the Australian opportunity Tim was able to attend trade shows around the world promoting the company. Having one large customer as his entire client base was good because it meant not having to maintain relationships with dozens of other customers, but it was bad when that one customer then failed to launch the product. *"It's like f**k... and then you are left to pick up the pieces"*. Tim stressed how important the potential launch had been in terms of providing a reference site for them *"because they all want references"* and consequently they have been unable to capitalise on the sale and were *"back on the smell of an oily rag"* in a re-trenched position.

After eighteen months of hoping and waiting for progress with the sole Australian customer, Tim had to instead *"actively hunt around"* for opportunities to diversify and develop new software for New Zealand companies, using now extensive expertise. Since starting the business seven years ago he has determinedly involved himself in the industry, serving on the industry body and attending trade shows. People he met in the process were *"crucial to being able to become part of the industry"*.

Over time the business has become well known, to the point that they were named as one of the top 10 companies in the world in their sector. Tim wryly commented that while that was on the back of having over one million users of the software, 98% of them would have pirated it *"so it is kind of amazing that you can derive almost no revenue from something but still be in the top ten in the entire world"*. This has in effect provided the references so necessary to pick up additional work from third parties. A further advantage has been people saying, *"oh you guys have been around for ages"*, thereby conveying longevity. The boost this had given to their reputation has provided a great mechanism for actually paying the bills, and he admitted that

even were they to once again get some traction with their main product he would keep what he called this “*second string*” going. Jokingly he revealed, “*last year we were skating along on nothing at all so this feels like ... relatively speaking... very prosperous. I think for most companies this would be considered death’s door but we’ve been used to having nothing... this feels brilliant*”.

Tim’s focus, however, remains on trying to sell his primary product because the real money lies in their “*need to keep buying the licenses off us forever*”. He thinks perhaps that it was “*the enthusiasm of youth and the last flushes of the tech boom*” that fostered the initial opportunity idea and he believes that “*upon calmer or mature reflection we would probably said screw it we should have stayed in our day jobs*”. He has no house, no family, no children, no car and he will simply walk away from it long term if there is no improvement before too long “*because this is not what we signed up for*”. As if to personify his depth of feeling he concluded by “*strongly recommending against anyone trying to build a mountain. I think it is a ludicrous proposition unless you’ve got massively more resources than we have ever had*”.

4.3.1 Tim’s Entrepreneurial Capital Development

This section maps the development of Tim’s entrepreneurial capital in Figure 4.1. On the left hand side of the figure is his initial entrepreneurial capital. Embedded within him as initial human capital, are his legal and commerce qualifications, which served as a platform of general experience. This has meant he has been able to turn his hand to everything, bar the technical aspect of writing the software. Having exhausted his own financial resources whilst on his OE, Tim leveraged his existing social capital, drawing upon the ‘strong ties’ of his family and friends for \$5000 seed capital and the second hand equipment that made up his initial stocks of physical capital. Tim’s bootstrapping strategy is reflected in Table 4.3. The arrow on the left hand side of his initial entrepreneurial capital indicates how his social resources contributed to his initial financial and physical entrepreneurial capital.

Tim’s additional entrepreneurial capital has taken time to build and develop. The initial lack of industry experience and industry links were an obstacle that Tim actively engaged in overcoming by embedding himself in the industry. He has done this by serving on the executive of his industry body which was a useful way of

forming valuable industry relationships and building his social capital. He has also augmented his social capital by developing relationships with government agencies who are trade show facilitators. Trade show attendances have contributed to his social capital. He also drew upon resources available from government economic development agencies and contributed to his financial capital by way of funding for research & development and enterprise development awards. In Figure 4.1, the outward arrow from his financial capital indicates a flow through to the development of technological capital in the form of software IP and patent protection.

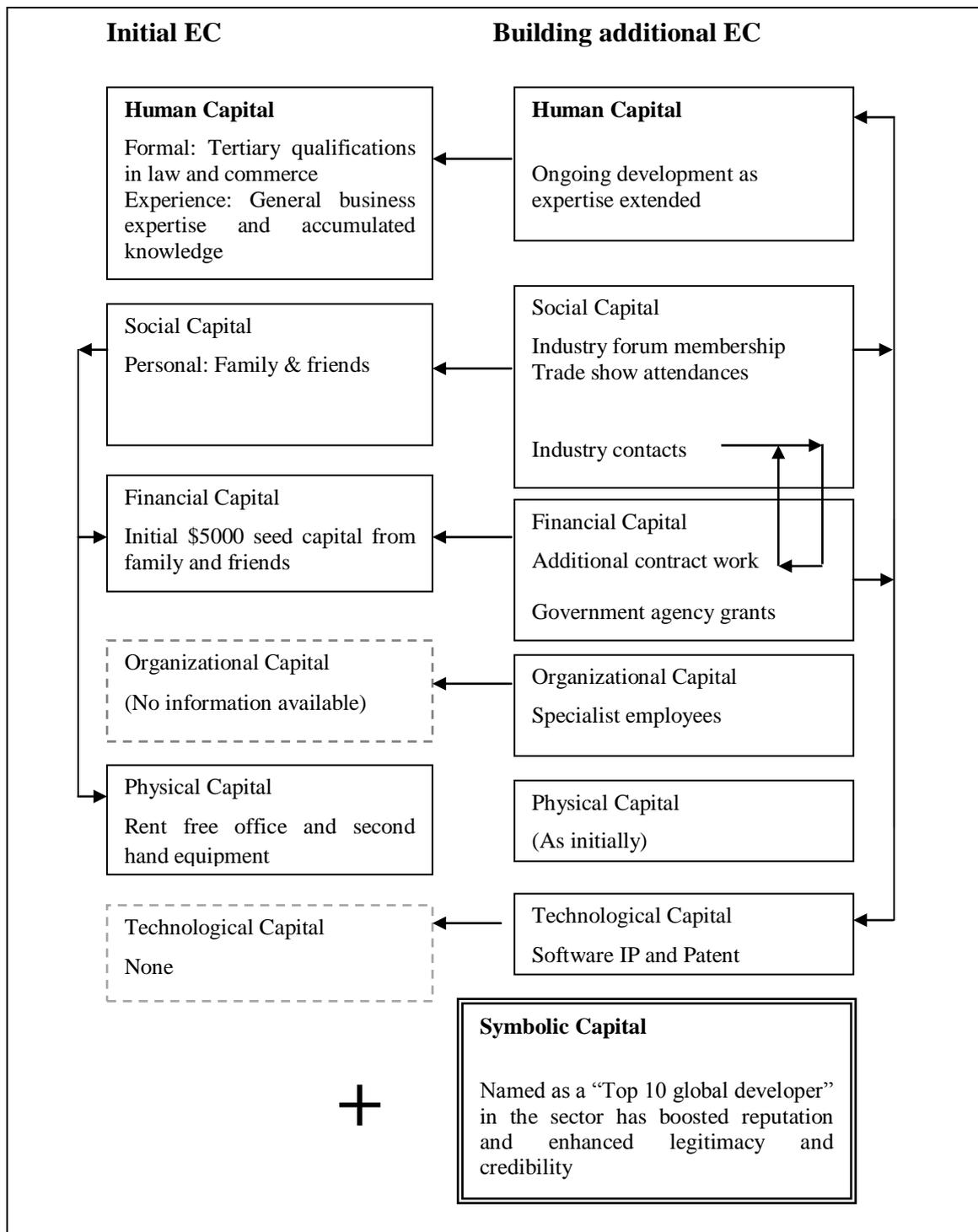
His narrative also reflected a roller coaster process caused by the failure of his sole client to launch in Australia which impacted the development of his entrepreneurial capital. He has been forced to fill the void and diversify. Whilst new industry relationships have built social capital they have also facilitated the alternative software development work that has been vital in filling the void left in his finances when he was unable to gain ongoing licensing fees from his sole customer. Therefore, on the right hand side of Figure 4.1, a circular flowing arrow indicates an ongoing relationship between his social and financial capital as he continues to rely on his social contacts for financial contracts.

In the continued process of developing his technological capital necessitated by the need to keep developing new software, there exists a two way flow relationship between his human and technological capital. Technological capital development is contingent upon Tim building his human capital but building human capital also flows back to technological capital. However, feeding into this two way flow is Tim's social and financial capital. Without the input from his financial and social capital, his current venture would probably falter.

Being named as one of the top ten software development companies in the world in the sector has been a significant boost to building reputation. This has also generated legitimacy and credibility in the eyes of the market, contributing to the development of symbolic capital.

Figure 4.1

Tim's Entrepreneurial Capital (EC) Development



4.4 Bob's Opportunity and Resource Development

Bob described how he came to develop an opportunity within his particular sphere of interest after being made redundant because he was “*obsolete, too old*”. During the course of a subsequent contract he felt the people he was working for were “*too short sighted*” and not carrying the idea through properly. He started “*working on a hunch*”, finding that there was a niche unserved by any of the big overseas players. He developed the software but found there were no New Zealand customers who could pay for it. So he said, “*well the only way I am going to find the opportunity is to stick myself in the right place at the right time*” explaining that he felt it was a numbers game; “*if you associate with certain people, certain things are going to happen*”. For Bob this meant going on trade missions with the government's economic development agency, New Zealand Trade & Enterprise (NZTE), around the world, where he ultimately met the right contact and affirmation that what he was doing was unique. Furthermore the clinicians using the product have “*universally voted us better*” which has developed his symbolic capital.

Faced with the question as to whether opportunities pre-exist waiting to be discovered, Bob answered that his opportunity was a discovery opportunity but added that he also had “*a hunch, a feeling*”. This was largely due to his lengthy association with the industry and believing that there was an opportunity untouched by any of the billion dollar companies. The major problem for Bob in developing the opportunity has been living “*hand to mouth*”. In qualification he said that meant firstly, “*you don't pay yourself a cent*”. Secondly, he used all his retirement savings, “*so you make yourself destitute*”. Following that, contracting work to develop other people's IP requires that, for his own opportunity, “*instead of taking one year to develop you take ten years*”. He believes that nobody is interested in funding a start up company from New Zealand and has sought and received funding overseas. Bob commented that there is a process, which “*if you follow it through, you will get there. I had this thing inside me that I wanted to do this thing and I never knew how I was going to do it*”. He thinks that what makes an entrepreneur is basically gut feeling, with some techniques and determination to back it up, “*and you have to have faith in yourself*”. But he repeatedly stated that being in the “*right place at the right time has got a lot going for it in my books*”.

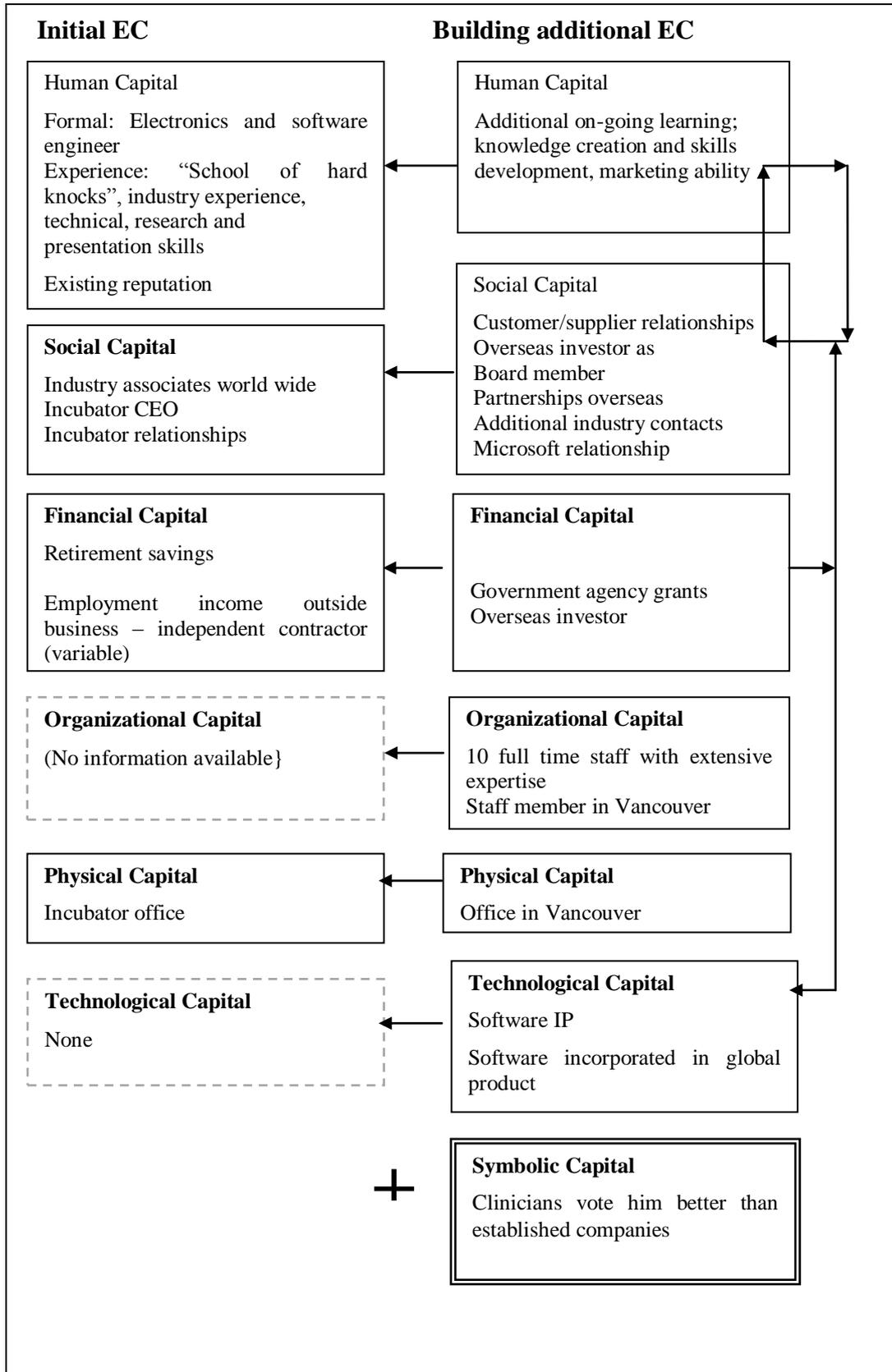
4.4.1 Bob's Entrepreneurial Capital Development

The pathway Bob has taken to develop his entrepreneurial capital is shown in Figure 4.2. Beginning at the top left hand side of the figure, his initial human capital comprises 40 years of developing technical skills and specific industry experience. Research and presentation skills, coupled with the ability to talk 'their' language and a passionate interest in the area have been key attributes. Bob has built up associations within the industry over many years, providing technical networks and a well-regarded reputation, reflected in his existing human and social capital and depicted on the left hand side of the figure. Additionally, incubator residency has contributed to his existing entrepreneurial capital by providing relationship support and mutually beneficial software development opportunities.

The subsequent development of his entrepreneurial capital is portrayed in the right hand side of Figure 4.2. Visits to Microsoft HQ have been used strategically as a learning experience to develop his human capital, as has government funding assistance contributed to marketing expertise. Bob has actively utilized NZTE resources to develop business rather than technical contacts and further build social capital. Tapping into NZTE resources has also provided access to key new resources in a number of ways, not the least "*being in the right place at the right time*". Firstly, one mission had presented him with the opportunity to meet a contact with links to Asian distributors, thus paving the way to entry in that market via his social capital. A second trade show significantly built Bob's stocks of entrepreneurial capital when the opportunity arose to attend a presentation by a serial entrepreneur, who subsequently became an investor and a member of his Board of Directors. This not only built his financial capital but also his social capital due to the investor's extensive networks. Bringing this investor into the company has also developed Bob's human capital because he has learnt the important skill of raising venture capital.

Figure 4.2

Bob's Entrepreneurial Capital (EC) Development



The right hand side of Figure 4.2 reflects interplay between Bob's human, social and technological capital development. There is a mutually beneficial relationship portrayed in a feedback loop between his human and social capital. One might expect technological capital to only flow outwards to human, social and financial capital, but the existence of a two way flow suggests that the on-going learning and flows back to improved technological development. The figure also shows how financial capital in the form of government grants and venture capital connect directly into his human, social and technological capital interrelationship.

Symbolic capital has formed as a culmination of these interdependent relationships. Because the interrelationship between human, social and financial capital has contributed to the development and quality of his software, clinicians have voted his product better than the larger players in the market.

4.5 Jon and Sue's Opportunity and Resource Development

Jon has extensive industry experience and had the opportunity with his last employer, whilst also working with Sue, to build a subsidiary business based on a "*mantra*" completely counter to the standard offering. The results had been spectacular and, although Jon could see great potential for further growth, his employer did not share his vision. So, "*in a fit of pique we left... hey we'll do it ourselves!*" They succeeded in developing the project, but rather than being able to build it incrementally as planned, found instead that they were simply swamped by the sheer size of it. Despite the fact that everybody wanted the system, it really "*absolutely needed someone with almost with blind faith to just write to a cheque for about \$10 million dollars. To say, right, we love this project enough... go for it*". Laughingly, Jon had to admit that such a person could not be found and they had to accept that the project was dead. Faced with the fact that there was now no business and bills to pay, "*we just sort of sat here and thought... what can we do?*" However, Jon's prior industry experience meant he was also aware that new legislation was due to be passed and so, "*with tremendous sense, having regard to the fact that we had no money whatsoever, we said ah, there's a market there*". Accordingly he and Sue built a database and developed a system before seeking clients who would benefit from it.

When asked whether the opportunity was a mountain climbing or a mountain building variety Jon replied that it was probably a bit of both, and this is reported in Table 4.2. To clarify, he said he thought any opportunity should “*revolve around a customer need so you are only going to have a customer if they have a need*”. Jon detailed the customer needs that were embedded within both the failed project and their current project, adding, “*probably the best opportunities are where you are discovering an unarticulated need and actually bringing forward a solution*”.

Since the opportunity was born out of a piece of legislation Jon admitted that growth within the New Zealand market was quite finite, however tightening of the economy has raised increased interest in their product, with Jon commenting that a year ago he would have described their growth phrase as “*treading water*”.

The passage of time has favoured them as they are now “*acknowledged as being the experts*” and have started to build complementary revenue streams to wrap around the core business. Larger competitors had found there was insufficient money to be made leaving them “*in poll position*”. Entry into the Australian market was dependent on similar legislation but, as Jon comments, after six or seven years in business they now have credibility in the marketplace and “*have the potential to get clients that we could never have got in New Zealand because we had no track record*”. He hastened to add the caveat that although Australia was a big opportunity they could not afford any timing delays in the legislation being passed because they wanted to exit the business within about five years.

The opportunity story Sue told offered a different perspective to Jon’s. After their first venture together had failed to get off the ground they had sought to find a regular source of income. She said, “*we didn’t know what that was but we were tired of always wondering where the money was coming from*”. She explained that the decision to develop the opportunity was based on Jon’s legislative knowledge and her ability “*to make it happen*”. They had seen the potential opportunity and had realised that companies would struggle to process the legislative requirements themselves. What she is especially good at is “*looking at a problem and accepting the problem and thinking right... what do I need to do to manage it?*” The size of the technology build meant she was literally working 24 hours a day, seven days a week, sleeping

under her desk for a few hours when she could. She said she was motivated by guilt; not only did she not want to fail, but also because she had been unable to contribute any seed capital, unlike Jon. Instead she *“begged, stole and borrowed from everybody I knew to help get us through”*. Changing technology meant her previous skills had long since lapsed so she had to look at who she could call on to develop the software. Sue volunteered that a lot of their success in getting the business up and running was *“luck”* and *“being in the right place at the right time”*. This was because being in the incubator meant that they were able to access cheap technical skills from developers in other start-ups who needed the money. Sue also believed her honesty was important. *“I didn’t try and fudge it. I would say this is completely way past me... that’s why you are all here. You know, what do you suggest?”* In assessing her skill set Sue commented that she just *“has to find a better way... I try and nut out, can this be done better, and if it can, who I need to call on to help me work out how”*. Sue was in little doubt that their opportunity fell into a mountain sitting there waiting to be climbed category, saying *“it’s definitely a climbing. In our business we started off with an idea and then we built on top of it, and we are still building on top of it”*. (See Section 4.15 and Table 4.2 for my interpretation and re-classification of Sue’s opportunity perspective).

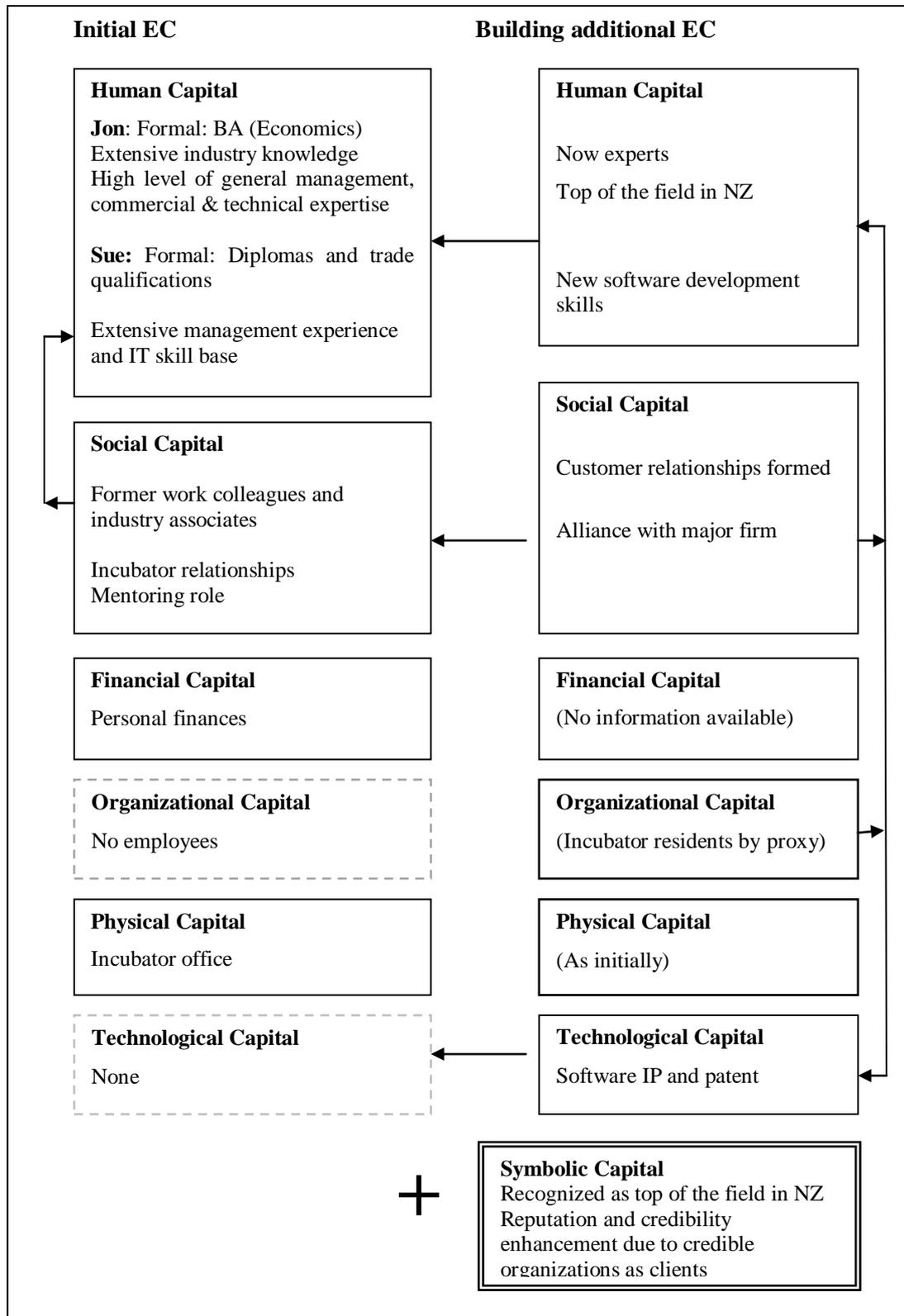
What Sue does reveal is that developing the opportunity came at great personal cost and *“nearly killed me in the process”*. So strained did their working relationship become that she and Jon needed counselling and she commented that if she had the opportunity again she wouldn’t do it because it was *“just so hard... all the stress and the effort, we’ve been in it eight years now and you’re always working on the smell of an oily rag”*.

4.5.1 Jon and Sue’s Entrepreneurial Capital Development

Jon and Sue’s entrepreneurial capital development pathway is depicted in Figure 4.3. The left hand side shows that these co-entrepreneurs have high levels of human capital formed through years of management experience and a range of complementary skills and expertise between them, as reflected in their initial entrepreneurial human capital. An arrow on the left hand side shows how Sue has drawn human capital from existing social relationships.

Figure 4.3

Jon and Sue’s Entrepreneurial Capital (EC) Development



To understand the venture development process, attention must be turned to the right hand side of the figure. On-the-job learning and knowledge acquired has further built their entrepreneurial human capital. In the process of developing the opportunity, Jon and Sue have become experts in their field, enhancing their reputation. As a part and parcel of building their reputation, they have developed relationships with credible customers. This beneficial association has also contributed to the development of symbolic capital. The social capital amassed from their customer relationships flows directly into their human-technological capital interaction, as does an alliance formed with a New Zealand accounting firm in order to access their customer base.

Incubator residency has also been an important resource. As Figure 4.3 indicates, incubator residents have been positioned in a proxy role as organizational capital. Sue commented that the skills of these residents were an important resource in building the technology and therefore this important input to Jon and Sue's human and technological capital is indicated by a one-way arrow.

4.6 Ian's Opportunity and Resource Development

Prior to starting his own business Ian had spent five years working in the industry, followed by six months in a consultancy role speaking to organizations and assessing their particular training needs. During this time he became aware of several areas with potential. The software he subsequently developed caters to those needs, but in a way that is new to the market. His opportunity was, *"born out of experience and frustration"*. He felt it was something that he had to create, or a mountain building opportunity, as his perspective in Table 4.2 indicates. He commented, *"I mean we knew the mountain was there, we knew there was a need for the mountain ...a lot of it was a building process because we started from scratch. We didn't just take a product and use it in a different way"*. His initial concept was to find an organization that needed his software and would fund its development in a shared IP scenario. Although he managed to secure agreements with two organizations, both contracts fell through. Having already employed a team to develop the software *"it was a leap of faith really in terms of just walking away, not knowing what the consequences might be"*. Serendipitously however, a former work colleague, who just happened to

be looking for an investment, contacted him. As Ian commented it was “*a bit of a miracle actually happening at that time*”.

Ian admitted he realized he did not have all the knowledge required, and that together with limited funds and a limited window of opportunity, they would have to “*make do*.” He indicated that by “*pooling all our expertise, working really hard; having a set plan in place is literally what has driven us through. We have done it on the smell of an oily rag*”. Whereas developing the software for a project of their size might normally require a team of 10 to 15 developers; they did it with two. He relied on “*turning over every cent*” as many times as he can, which is a practice that has had its inadequacies. Loath to pay for marketing expertise, because “*knowing the mentality where we come from we could probably do something ourselves*”, he admitted that if they had actually paid “*I think we would have been ahead of ourselves quite a bit*”. Times have been really tough and he credited his determination and great staff with getting through that development phase, together with the experience and industry networks that he had formed over the years. There have been really defined stages in the organization’s development and Ian indicated that once the early adopters had trialled the software, “*it all became about validation, building credibility... I think that is one of the main hurdles entrepreneurs face, to get those reference sites*”.

Expansion throughout New Zealand followed and then entry to the Australian market via a business partnership with one of their early adopters. The appointment of an independent Chairperson, with networks and expertise within the Indian market, facilitated the signing of another business partnership within that market. As Ian remarked, “*the chances of a small little organization like ours; to deal with literally multimillion dollar organizations in a different country with little major outlay... that’s pretty good*.” Commenting on his growth aspirations, he raised the idea that there are lessons to be learnt along the way. “*So, doing things the hard way sometimes helps you make the mistakes early on and actually grow and develop, so that when you are in a bigger and better place you’re a bit more streetwise*”. Whilst trying to fund growth through sales was a growth constraint, because they don’t have major marketing resources in place, he admitted to feeling a “*bit precious*” about divesting any shares and liked the idea that at the end of the day, the buck stopped with him.

4.6.1 Ian's Entrepreneurial Capital Development

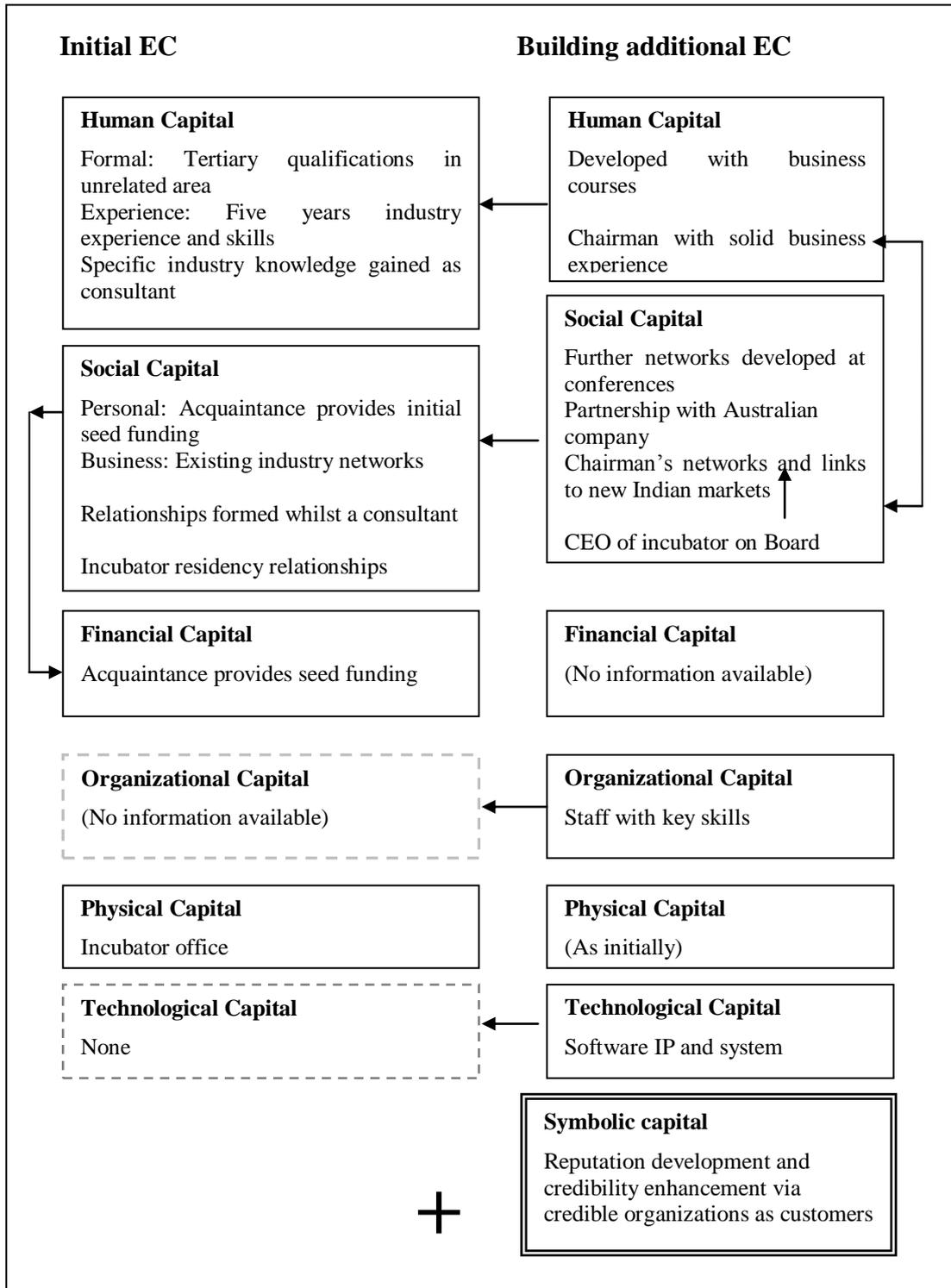
When Ian immigrated to New Zealand he quickly found he was at the top of his academic specialty. Figure 4.4 shows his initial entrepreneurial capital on the left hand side. Technical work he was doing for an organization led to work with the organization and contributed to the development of a wealth of industry experience. Time spent as a consultant within the industry contributed to his industry specific knowledge and also facilitated additional relationships. The 'weak ties' of an acquaintance provided his seed capital, as depicted by the arrow on the left hand side. This completes his initial entrepreneurial capital. The right hand side of Figure 4.4 traces the path Ian has taken to further build his entrepreneurial capital. Human capital has been developed with computer and business courses to fill a gap in his practical knowledge.

Moving into an incubator office has proven to be a valuable form of building social capital. The CEO of the incubator sits on his Board which has facilitated the appointment of an external chairman. In turn, this chairman has also brought considerable business experience and networks to the venture, further building Ian's human and social entrepreneurial capital and his venture development. The reciprocal nature of this relationship is shown with a double-ended arrow between Ian's human and social capital. As a result of the chairman's position within his own social structure, a partnership has been formed with an Indian company to help enter that market.

Figure 4.4 also indicates how Ian has further developed his social networks by associating with NZTE for conference support, whilst partnering with an Australian sales and marketing company has been a mechanism to offset his own lack of marketing prowess and leverage that company's networks. This has built additional social capital. Credible organizations adopting his software have helped develop his reputation and enhanced his credibility in the eyes of the market and built important symbolic capital, as shown in Figure 4.4.

Figure 4.4

Ian's Entrepreneurial Capital (EC) Development



4.7 Kit's Opportunity and Resource Development

My interview took place in a purpose-built and quiet meeting room at the incubator, Kit explaining that for the time being he makes do with a desk in a shared and noisy office environment not conducive to meetings.

Kit's opportunity arose from research he had been doing in a team at an Australian university. Software they developed was generating interest and feedback, which was an *"informal validation that there was some demand"*. After a feasibility study suggesting the market was too small, the university turned away from commercialization, but Kit had wanted to exit the academic environment and saw it as an opportunity to acquire the IP and, *"even if it is only a niche market, to start a business and develop technology and to then leverage that smaller market into other opportunities"*.

When asked whether he saw his opportunity as a mountain waiting to be discovered, or needing to be created and built, Kit responded that it was a *"bit of both"*. This mixed opportunity perception is portrayed in Table 4.2. Improvements in technology and computer processing power, together with cultural changes, where people are more comfortable using technology for social interaction, meant that the opportunity *"had arrived ...that convergence of the technology and social changes. So I think that opportunity has arrived in the sense that you are making it...what I am trying to do is create the application; create the technology that can fill that opportunity"*. As he explained, he is trying to fill the space so that users can say *"wow that's what we've been waiting for"* and he sees that as the mountain building component.

Kit was fortunate that the cost of the initial software development had been funded by Australian taxpayers, but in order to take the opportunity further he had taken on contracting work outside his company to provide some financial resources and *"tapping into some external resources by giving away a bit of IP"* had also been a useful form of financial capital. That is the model he has been following as he laughingly confides that his dream is to *"create a sustainable business that can continue to create new IP"*.

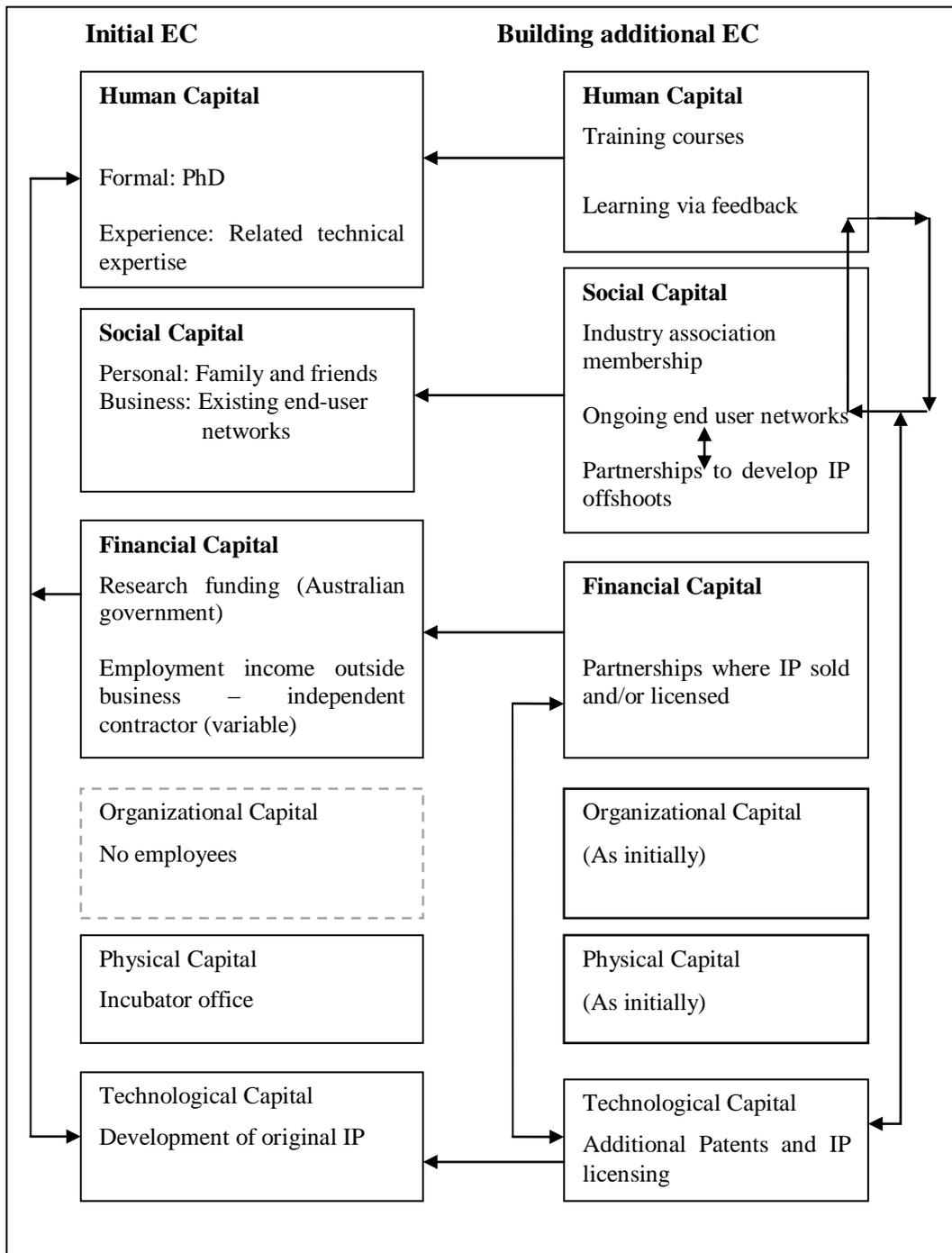
Although he expected that the business might be slow to develop, the difficulty he has faced is his own lack of experience and skills in marketing the software online. Kit sees disconnectedness with the local community as the disadvantage of operating an on-line virtual business, adding, *“half of them probably don’t even know I’m in New Zealand!”* Kit has huge growth intentions for the business but admits that he is biased towards funding it though revenue *“because I have seen the added stress and the added problems that having investors can bring”*. His intention remains to bring in investors for the IP offshoots whilst carefully keeping something at the core for his benefit *“but reduce the risk of the whole thing exploding”*. In an effort to stimulate sales he has recently moved into a new niche where he can see further opportunity.

4.7.1 Kit’s Entrepreneurial Capital Development

Kit has a PhD and years of research and software development in the specialty area in which his opportunity is focused. Opportunity development hinges on leveraging this academic and technical knowledge base. In order to start his venture, Kit acquired from the university the Intellectual Property (IP) which he had been involved with developing. Figure 4.5 shows that Kit’s initial entrepreneurial capital consisted of high levels of human capital and importantly the technological capital of this IP, which he continued to develop. It depicts a two way flow between these two elements of Kit’s entrepreneurial capital. There is a mutual reinforcement of these components, with each both the medium and outcome. Crucial to the development of the IP is the research funding he obtained. This funding, together with his employment as an independent contractor comprises his initial financial capital. The outward arrow in Figure 4.5 indicates its role in IP development, since without financial resources this development is unlikely to have eventuated.

To grow his business and further accrue technological capital, Kit has augmented his academic skills by undertaking training courses offered by the local enterprise development agency and further developed his human capital by learning new marketing skills. He has also joined industry associations that have been valuable in making contacts. Kit has continued to call upon the strong ties of family and friends for advice and mentoring.

Figure 4.5
Kit's Entrepreneurial Capital (EC) Development



The original research was team based involving both the university and the end users in its development. Kit is able to build upon the feedback he receives from those existing contacts to help develop software attuned to their needs and further build his human capital. Because of their networks they also in turn act as a conduit for further software development opportunities, developing his social capital. This relationship

acts in a circular way. On the right hand side of Figure 4.5, this mutually beneficial relationship is portrayed between his human and social capital where a positive feedback loop influences knowledge development. In turn this relationship leads to, and is influenced by, ongoing IP development as the figure suggests. Running in tandem with this interrelationship is an overlap between technological capital and financial capital. As one is developed, so is the other. Figure 4.5 shows how Kit has been able to adhere to a partnership model which enables his IP to be developed in offshoots, further establishing his entrepreneurial technological and financial capital.

4.8 Ben's Opportunity and Resource Development

As a university staff member Ben, and several of his colleagues, were aware that there were commercial opportunities in some of the work they were doing. Two of them left to start their own R & D company and "*kind of feeling the opportunities as they came up*". One such opportunity, which really got the ball rolling, arose out of a European contract, despite their concern that the opportunity was "*too big for us, but you can't say that!*" Asked whether he saw that opportunity as a mountain discovery type opportunity, like Mt Everest just waiting to be climbed, or an opportunity that needed to be created, Ben also stated that he thought it was "*a bit of both*". In clarification he said that their niche is "*a giant mountain of opportunity, but you have also got to make your own opportunities at the same time to kind of take advantage*". What works to their advantage are changes in the environment; both increasing fuel prices and a greening economy forcing the industry to adopt triple bottom line initiatives.

Questioned about his resource base, Ben pointed out that "*in New Zealand everyone knows we have got rich resources of undervalued geniuses*". They had looked around and found team members with vast experience in related industries and tapped into them to gain "*a fresh perspective... a creative and different approach... basically lots of people that hail from different areas that can contribute in different ways*". No. 8 wire ingenuity was a big part of their operation because, New Zealanders, "*we do have that reputation of getting down and getting it done*". In explanation he cited yachting's Team New Zealand and their ability to win the America's Cup twice with virtually no money. This is seen around the world "*as a demonstration of our kind of*

resourcefulness... If we had the budgets that some of these international R & D companies had... oh man! The things we could do in New Zealand with that money". As an example, one of their team members is "a real number 8 wire kind of guy. If he sees there is a problem, instead of wasting thousands of dollars hypothesizing about it, he'll make something out of cardboard, strap it to the back of his ute and drive it up the beach". Other than pulling these team members together, as and when required, they run a lean operation, only using part-time contractors who were graduates he had taught. The inbuilt advantage being that he "could pick ones I knew were good!"

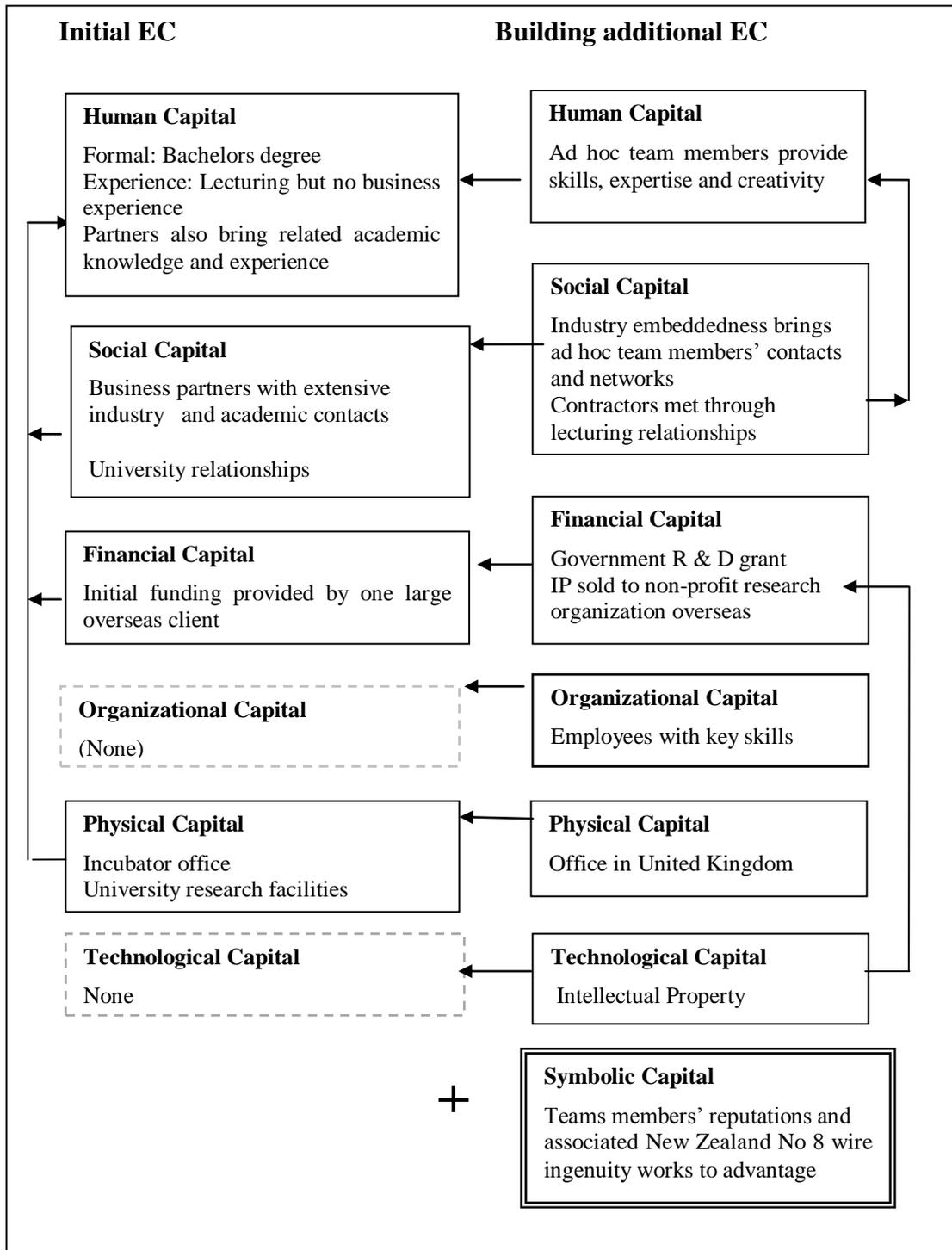
They were fortunate enough to make enough money out of the first contract to fund a project manager who is overseeing the contract in the UK, where they have now managed "to secure themselves a future pipeline". Domestic clients effectively cover their office expenses leaving them in a self-supporting position. However, he is cautious not to put all his eggs in one basket. Keeping small overheads is important should the European contract pull the pin on them. Ben commented that he doesn't "sit down and spend hours a week planning and doing cash flows and things like that... I just kinda know whether we are going to be okay or not". What they have managed to do is build the business purely out of cash flow without any investment because "actually bringing on somebody who wants a chunk of your business and also wants to direct where it is going... I don't know".

4.8.1 Ben's Entrepreneurial Capital Development

Ben left his academic career to launch this company with fellow colleagues in order to leverage the human capital embodied in their individual intellectual abilities, experience and accumulated knowledge. His partners are therefore a significant influence in his initial entrepreneurial human capital and also his social capital, bringing with them a wealth of academic and industry relationships. Figure 4.6 shows existing entrepreneurial capital being formed by a relationship between Ben's physical capital and his human capital. The outward arrow from his social capital indicates the impact of those academic relationships because they have facilitated access to research and technical facilities which in turn have contributed to initial entrepreneurial human capital.

Figure 4.6

Ben's Entrepreneurial Capital (EC) Development



In terms of developing the venture, activity on the right hand side of Figure 4.6 indicates how social relationships are exercised to build additional human capital, as shown by the arrow on the top right hand side of the figure. The members of this ad hoc team have significant reputations due to their experience and association with, for example, New Zealand's Americas Cup campaigns. As a result this augments, not

only social capital, but has also developed symbolic capital. Arguably New Zealand's No. 8 wire ingenuity reputation has also been leveraged to augment symbolic capital. Team New Zealand's ability to win and defend the Americas Cup under tight budget constraints is seen as symbolic of New Zealand ingenuity and resourcefulness.

Initial funding for their operation was from an overseas client and this relationship will continue to bear financial fruit because they have sold their IP and will continue building upon it within the existing client relationship.

4.9 Jim and Rex's Opportunity and Resource Development

An interview with Jim also extended to a brief interview with Rex thereafter. Jim told me that he and Rex met at university, subsequently working and travelling together. Boredom with the corporate life made them consider starting a business together and they "*started thinking of ideas*". He explained that Rex had previously been paid well for writing some software for a customer who had been unable to find what he needed on the market, and they thought there were probably other companies with similar unmet software needs. The plan was to "*fill in the gaps basically in people's systems and tide it over with a bit of consultancy*" with Jim doing the people side and Rex writing the software. Because they were leaving well-paid jobs they had saved enough to tide them over for a year. In Jim's words, they thought, "*stuff it! Let's do it!*" They managed to get some clients before they had written any software and then struck problems because it was more complicated than they had anticipated. This necessitated bringing in an employee, whilst Rex had to quickly try and learn to use alternative software, leaving Jim to "*pull out every trick in the book I could, to buy time*". Six months later, and after making "*absolutely no money*," they were fortunately able to reuse the software for another client and gain some revenue. However, it was a pattern that was to repeat itself: getting customers and being unable to deliver. Aware that it was pointless to continue annoying customers because they would not get references, Jim said "*what we thought was we should not get customers. We should build the software and then go and get them*". Laughing he commented that "*the first business plan we had we were millionaires in the first year... crazy, looking back on it now!*"

In order to fund the change in focus, and rather than getting investors which “*sounds painful*”, both Rex and Jim have become full time contractors, working long hours outside the business during the day and within the business after hours, to finance full time programmers. Jim admits it is not nice working such long hours and “*ultimately taking home bugger all*” but holding on to a 50% shareholding each is important. In Jim’s opinion, and depicted in Table 4.2, the opportunity was a discovery. “*I think opportunities are out there. I mean it was just sitting right there. I think you just have to work hard to get it*”. He concedes that although they wasted two of the past three years learning “*if that’s a waste... Looking back we made a lot of mistakes but we have learnt from them*”. The importance of obtaining references, particularly for the first client, has been a particular challenge for Jim, ‘*not in a moral sense, but you’ve got to fake it until you make it, right?*’” Similarly being questioned by a customer: “*Can it do this?*”? To which: “*Yep! No worries, it can do that! And then you go, afterwards you think, crickey!*” He explains that it is all about trust. “*Unless that person trusts you they are not going to buy your software*” but he believes they have now got it right because “*we have gone to customers, and we are building what do you need; what do you want type things*”. The great thing about their model is that it has a revenue stream built into it that will just get “*bigger and bigger which makes it better for us if we want to sell. Which is the goal in five years and then we will do it again!*”

Rex told me that he had always wanted to start his own business, “*always had that sort of drive, and I am the type of person who has ideas sort of flash in my mind*” After being approached by a customer who couldn’t find the software suited to his needs, Rex researched and “*lo and behold there wasn’t actually anything there that caters for that type of customer*”. Since then he had “*been searching for, sort of an avenue to put that into practice*”. Rex concurred that their opportunity existed in a discovery sense but added “*we’ve attacked it from a different angle*”. Although, Jim had described the business model evolution through a number of trial and error phases, Rex went further by explaining that they had had to change the model to reduce the costs, because “*the way we were delivering the product was never going to make money, even enough money to pay the wages*”. There had been a lot of research in terms of what is out there in the market place and they know there is nothing around, “*even on a global basis, that does what ours does*”.

4.9.1 Jim and Rex's Entrepreneurial Capital Development

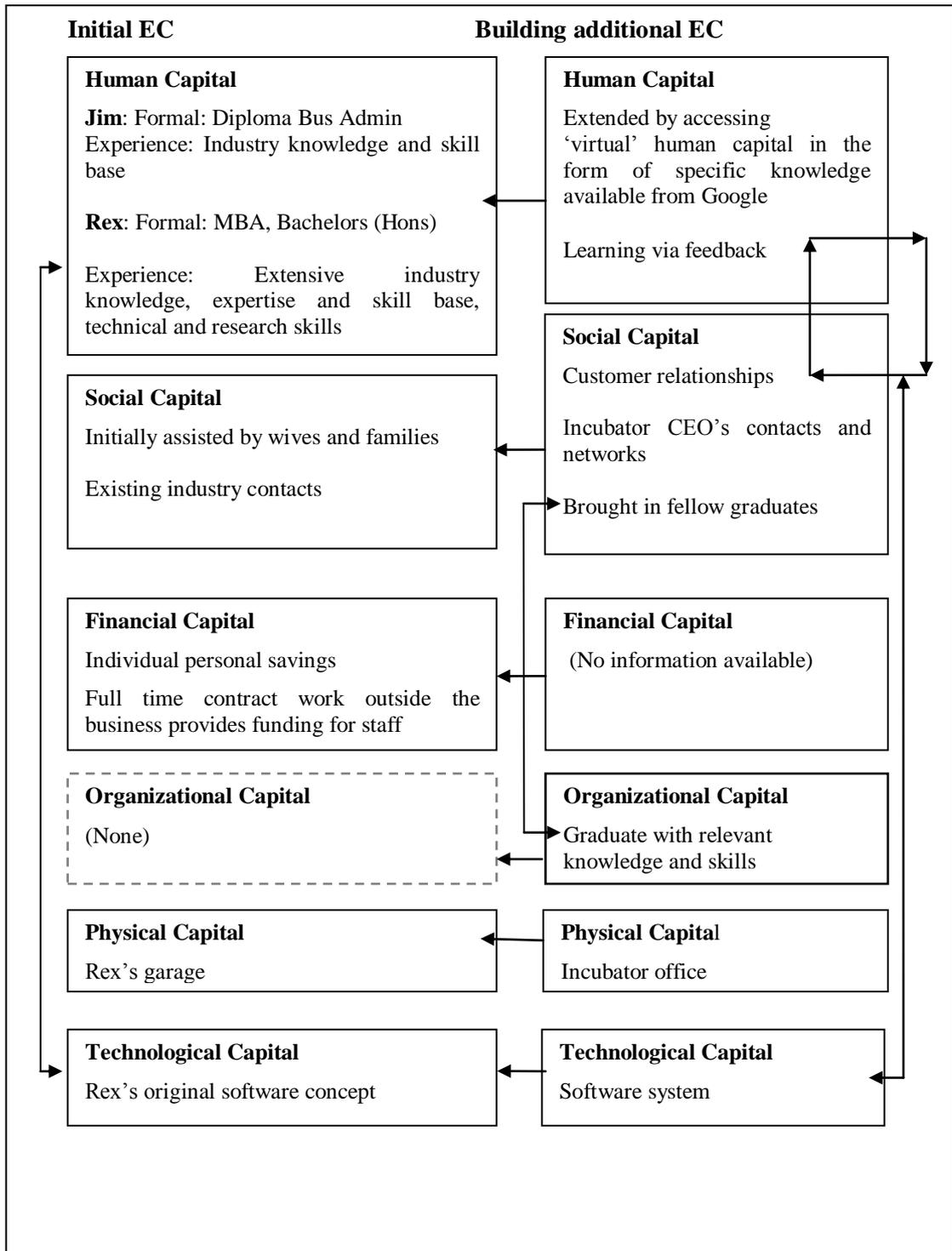
The initial entrepreneurial capital of Jim and Rex is portrayed in Figure 4.7. Between them they have a range of industry experience, skills and expertise. Rex also contributes an additional layer of tertiary qualifications and his academic prowess complements Jim's people-oriented attributes. Their combined human capital component of their entrepreneurial capital has provided the basis of their opportunity in tandem with software previously developed by Rex in his garage. This is represented in existing entrepreneurial technological capital. In this respect, the two way arrow on the left hand side of Figure 4.7 reflects an association between initial human and technological capital. Rex has also found that having an MBA from a prestigious university, is a useful component of his existing human capital because it enhances his reputation.

The right hand side of Figure 4.7 concentrates on how Jim and Rex have built their entrepreneurial capital to develop their venture. In endeavouring to write the software, Google, as a rich conglomeration of knowledge, has been utilized to augment Rex's human capital stocks. Software development is closely associated with customer feedback ensuring software meets customer needs. This mutually beneficial and reciprocal arrangement is reflected in a feedback loop on the right hand side of Figure 4.7 where Jim and Rex's technological and human capital is developed in tandem. The interrelated flow of arrows portrays this symbiotic relationship, in much the same way as Figure 4.5 depicted Kit's developer-user relationship.

Contacts they had formed have been very important to their social capital development by providing crucial leads and references to build the legitimacy a new venture requires. In addition, they have been able to leverage an employee's social capital by hiring, in turn, his fellow graduates. This weak tie relationship that taps into 'friends of a friend' is depicted as additional social-organizational capital interaction and is shown by the arrow on the inner right hand side.

Figure 4.7

Jim and Rex's Entrepreneurial Capital (EC) Development



4.10 Roy's Opportunity and Resource Development

Roy was uncomfortable being referred to as an entrepreneur. He thought it was just because you take a business opportunity, *"I don't know how you term it; somebody that sees an opportunity and then chooses to take it, as opposed to one who just..."* Elucidating he added that he believed there were only really about three types of people: *"those that make things happen, those that watch things happen and those who wonder what happened"* placing himself in a band between the making and the watching. Whilst serving in the forces Roy tells me he had seen an opportunity, and had established a business with an associate. Just as it was making inroads, a change in government literally closed the opportunity down. However, one of his clients had a problem that needed a solution and approached them for help. He explained that *"we said we would do it without knowing how we were going to do it"*. What he did realise, whilst developing the solution, was that if it worked in one sector, it might work in another and it did. Roy believed unfavourable elements in society are working to his favour, which his area of expertise is able to capitalize upon. Asked whether he felt his opportunity was a mountain climbing variety or whether he had to create the opportunity and build his mountain, Roy echoed others, commenting that he felt it was a *"bit of both"* in that *"you have to build your mountain but if you are out there you will find the opportunities"*. He believed opportunities are there if you listen and *"you need to be alert to opportunities and you need to be connected... very connected to key areas"*. Knowing who the movers and the shakers are is an important factor according to Roy, and also knowing who actually makes the decisions. As he explained *"you learn the ones that just talk about it but are actually miles away from the chequebook"* and for this reason he has key people throughout the organizations he deals with, that he *"sounds things off"*, to ensure he is able to deliver what they want and need.

An important aspect for Roy has been actually doing consultancy work for the organization, which has given him the opportunity to talk to people within the organization and thus know what they are doing and what their requirements might be. As he said, *"the opportunities are there if you listen"*. He is currently extending his system on the back of his client expressing a wish that such a system was available. He was only aware of this 'wish' because of his strategy of actually 'going

to ground... staying connected” with all his users in the market. He added that by actively working these contacts and asking “*would this be of any use to you...Not saying we are going to do it but it is potentially there if you want it*” the flip side happens and the client then approaches him. Indeed, Roy commented that he spent a lot of time on his networks and “*massaging the relationships,*” to the extent that “*we know what they want before they know what they want!*”

He revealed that he had made an initial mistake in spreading himself to thinly trying to deal with large corporate organizations and government agencies concurrently. Because the corporate sector saw value in his system and have the ability to make fast decisions, unlike government agencies, that is where he got his initial funding. But he has subsequently opted to focus simply on one big government organization, “*the best one for the long haul*”. Importantly for Roy’s growth prospects this organization also hinted that there is a market in Australia for his system which they will fund, and “*if I piggy back on that, if I use their resource to get me in there...*”

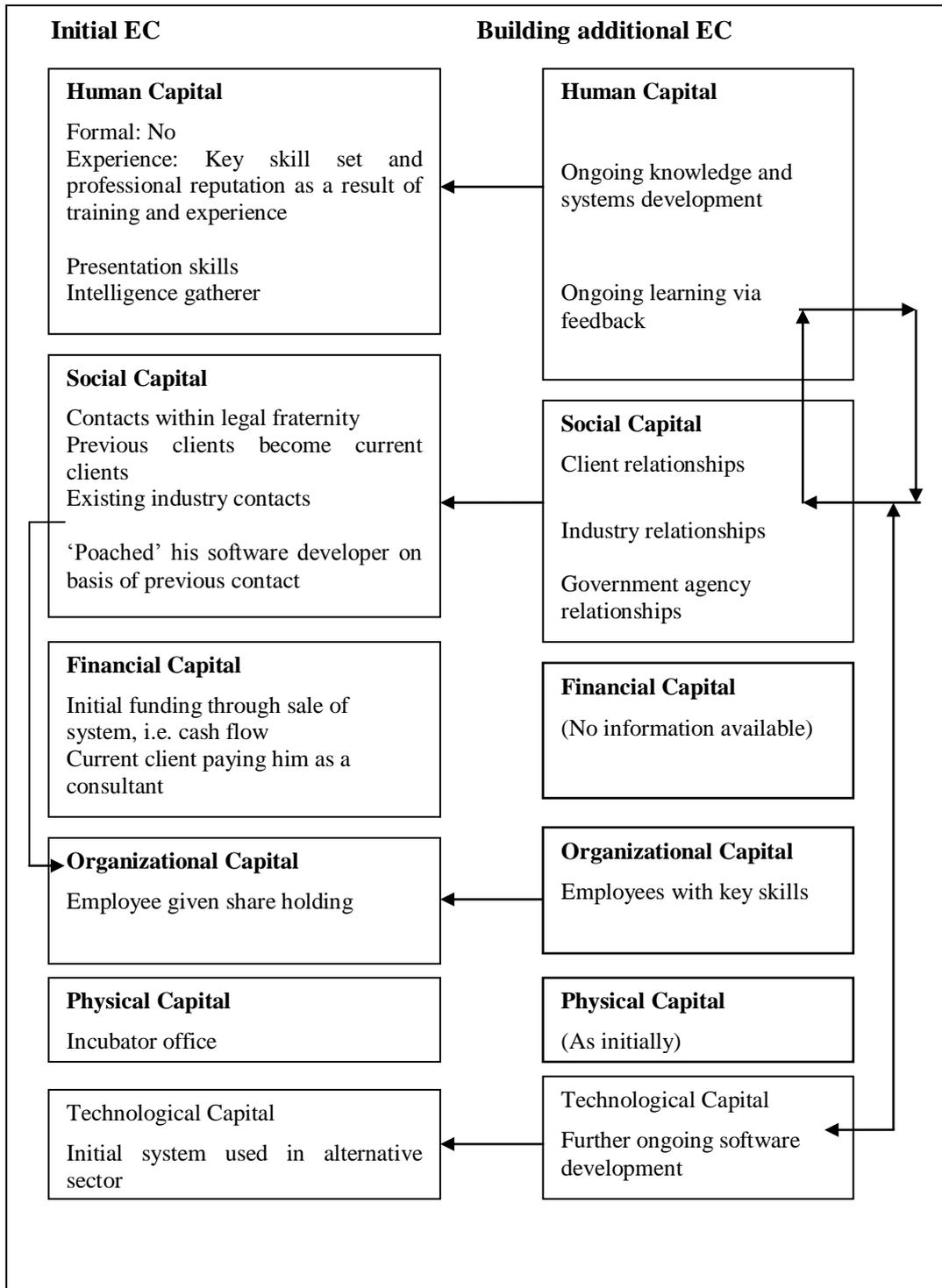
4.10.1 Roy’s Entrepreneurial Capital Development

Roy’s previous occupation within the forces means the human capital skills and capabilities the job required are innate and inseparable from the way he conducts his client relationships. Figure 4.8 shows his initial entrepreneurial capital consisted of his existing skills and expertise together with a solid existing social relationship component. His initial organizational capital was formed by enticing a software developer with a shareholding, which also fosters commitment to a mutually beneficial working relationship.

The right hand side of Figure 4.8 shows how Roy builds his human and technological capital in a circular process. He develops his knowledge, utilizing feedback to deliver systems that have value, both for him and for the client. As with Figures 4.2, 4.5 and 4.7, this relationship is reflected in a symbiotic interaction of arrows.

Figure 4.8

Roy's Entrepreneurial Capital (EC) Development



4.11 Guy's Opportunity and Resource Development

Ten years ago, as a thirty year old, Guy had a business working from home where he earned \$300,000 per annum writing software applications. His brother wanted to join the business and they decided instead of catering to 50 customers with custom made applications, they would try and make one generic application and sell it overseas. However, they found the application they developed was a 'me-too' product with a clear leader already emerging in the market place. So instead they changed tack and moved into the incubator to focus on developing a commercial product. Guy said in hindsight it was a potentially bad decision "*but you end up where you are because you then go through a different process*". The problem they struck was they could find no customers for their new software. Not only did they have to learn how to try to sell it but also, once again the competition around the world was better. In tandem, however, they were also being paid by an existing client to resolve an issue. Feedback from the client told them of existing technology that was not workable so in a roundabout way, they embarked on addressing the client's problem by exploiting that knowledge.

A close working relationship with the university has been a beneficial resource. They gain a lot of value from utilizing 4th year students for projects and then employing them as graduates which is "*a good resource because it gives you time to build them up because you want to keep them because they have a skill set*". Guy has also accessed staff knowledge and ideas. Guy tells me the only reason they are still in business is because they were able to make a breakthrough first sale in Germany. He credited his ability to enter that market to his Swiss father-in-law, a retired IBM executive, who he described as a "*critical*" resource, and the sales strategy they put in place with their distributors.

When asked whether Guy saw his opportunity as being a mountain sitting waiting to be discovered or a mountain to be built and climbed, he avoided answering the metaphor unlike the other respondents. However, he did comment that "*you've got to have the ability to produce a commercial product and you have got to have the ability to market it*". Because his clients are spread around the world he explained the importance of his distribution channel, adding that it is a "*whole lot of factors that*

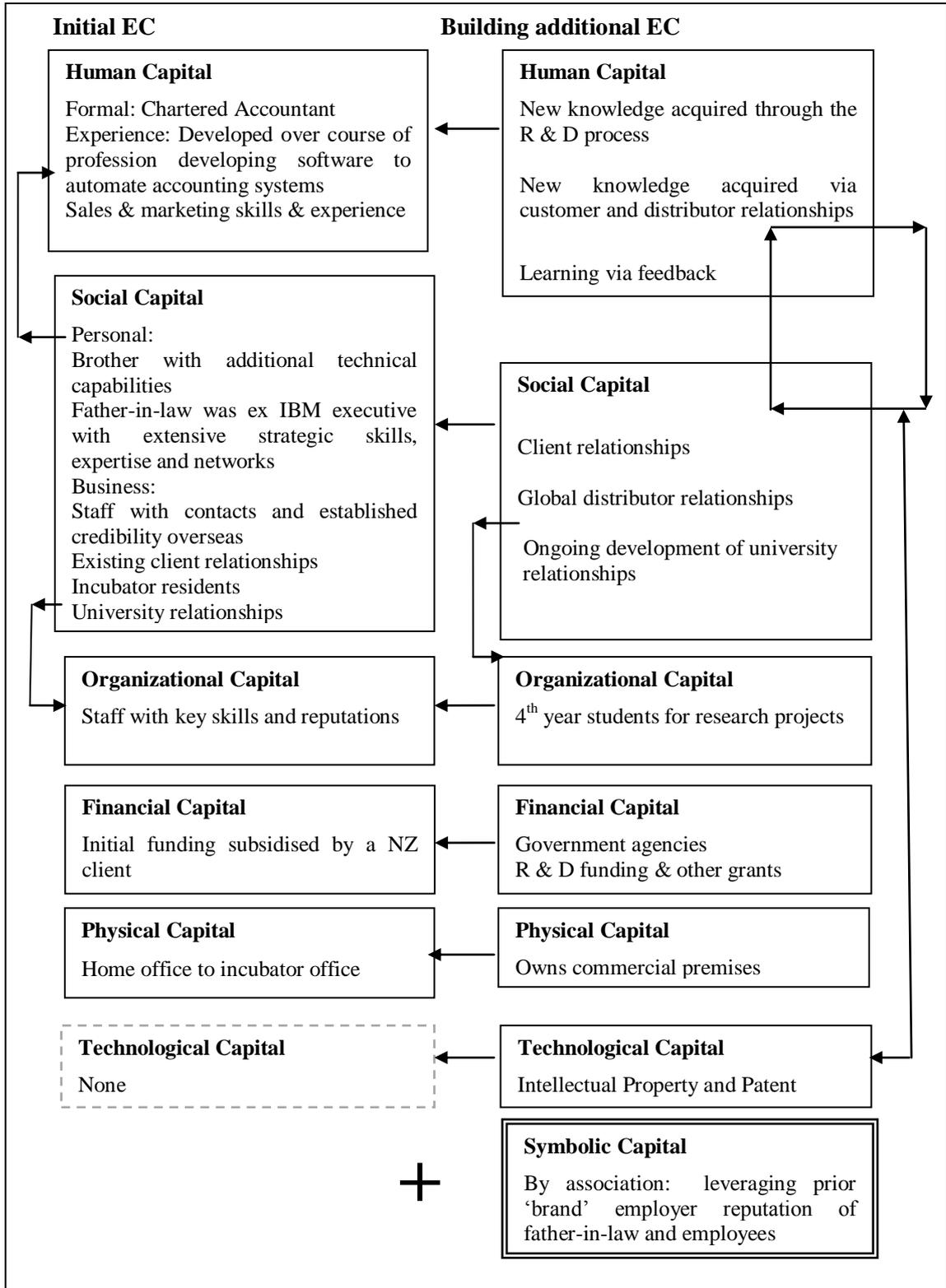
you need to actually get that opportunity working. You can't support entry into these countries yourself...if we were trying to do it ourselves there is no way we would have survived". Guy added that they were probably the fifth company who had tried to make their particular technology and theirs was the only real commercial product, in part because they had built up the ability to make good software. Trust was also a really important factor; particularly in regard to a new product they have developed which is both expensive and somewhat unproven. Guy acknowledges that *"you need customers with the pain. You need customers who know they have got problems"* and details the number of cities throughout the world who are experiencing problems and 'pain' resulting from old infrastructure. They take that headache and turn it to their advantage. *"Now it has taken off, now the beauty about our industry in this economic climate, infrastructure is where governments are spending money"*. Guy explains that consequently they have a lot of opportunities and, although they could upscale by seeking investors, he *"can't be bothered"*. Indeed he adds that he feels lucky not to have investors because *"they would have squeezed the business with their agendas"*.

4.11.1 Guy's Entrepreneurial Capital Development

Guy was the only entrepreneur to have been through the incubation process and 'hatched'. In this respect depicting the interwoven relationships that have contributed to his social capital and venture development was particularly challenging because they were both constituents of his initial entrepreneurial capital but also part and parcel of how he further augmented his entrepreneurial capital. As illustrated in Figure 4.9, Guy had formed a considerable level of initial entrepreneurial human capital since he graduated from university and started his own business. From that base of expertise and accumulated knowledge, his existing social capital in the form of strong family and weak associate ties have been instrumental in helping to give his venture access to the global market. His existing physical capital has developed from a home office, to an incubator office and is now located in commercial premises that he has purchased. In the process of achieving this success he has also augmented his initial entrepreneurial financial capital by accessing government funding for research and development and marketing grants.

Figure 4.9

Guy's Entrepreneurial Capital (EC) Development



The relationship developed with the university from his time in the incubator has been beneficial, providing means to build organizational capital. Students continue to be utilized for research projects, staff members have contributed ideas and graduates with key skills have become employees. Additionally, many of his employees had existing contacts through prior experience and have been able to leverage these, not only for further networking, but also to enhance the company's credibility on the global stage. This has in turn built symbolic capital. An additional component in building symbolic capital has been via association with his ex-IBM executive father-in-law, whose own skills, expertise and social relationships have been important components of Guy's existing entrepreneurial capital.

Guy has built additional social capital in establishing critical distributor relationships. The right hand side of Figure 4.9 portrays the interconnectedness as he has built his human, social and technological capital. Although Guy leverages considerable value from his own entrepreneurial social capital he also draws upon his distributors' knowledge of addressing customer problems, with the feedback flowing between Guy, the customers and the distributors an essential part of the opportunity development process. This circular flow manifests itself in the outcome of continued technological capital but is itself an outcome of that ongoing software and IP development. Figure 4.9 shows this mutually beneficial relationship in much the same way as was portrayed in the earlier Figures 4.2, 4.5, 4.7 and 4.8.

4.12 Sam's Opportunity and Resource Development

Sam was very adamant that he was not an entrepreneur, seeing himself as a technical person first and foremost. He told me that ten years ago he "*spat the dummy*" deciding to cease designing technology systems and move into consultancy work, in tandem with his wife. He built up a team of nine consultants but found that he was unable to measure their worth. As he explained, "*people can look brilliant on paper, they can present in a suit and tie and look really good, but it can be three or four months before you find out if they are a good consultant or not*". He also wanted to know that what these consultants were doing was actually contributing to a business long term, because "*if we weren't, what the hell were we there for?*" However, he also needed to get some productivity gains for the consultancy because it was too

easy and costly to the business to spend a day with a client and 10 to 12 days working on a strategic plan. In an effort to try and systemise the process Sam looked around the world for a system but was unable to find anything available that was even close to what he needed. At that stage he sat back and said, *“bugger it! I am going to have to sit down and just put something together”*. Three months later he had a framework in place to test and found it worked really well.

He used the system for a year and then realized he might have something that was *“a bit more useful than using it as a tool in our own business”*. Whilst his wife took over the front end of the business, Sam continued to develop the technology. He commented that *“in a sense we broke all the rules”* because they quickly realised that the small New Zealand market would necessitate them moving to an international scale straight away. Following a really good response over the course of a six week overseas tour they decided to *“get serious”*, pulled out of front line consultancy and went about redefining their market. They turned the conventional approach 180 degrees to offer a unique solution, which has gained market traction throughout the world with international trade shows and conferences proving to be lead generators. Bringing in a shareholder to assist with international development was important and the shareholder’s background and existing reputation was important in establishing credibility.

When the mountain climbing versus building metaphor was raised, in other words are opportunities made or found, Sam was adamant that, as indicated in Table 4.2, he was creating his opportunity; he was *“in the making. It has actually been tough as a business because there has been a lot of market discovery: we had to look... because at first blush the people who should have been interested in our system are not”*. What Sam found was that the market he was initially aiming for had a vested interest in maintaining their status quo; *“these people speak the language but they don’t actually walk the talk”*. Once he turned his attention instead to those who funded the organization he was able to gain the purchase he needed. Internationally, firms *“could not believe that a silly little kiwi company had actually done what they had”* and feedback proved their clients were getting value from the process, which as Sam had earlier explained was their *raison d’être*. Indeed there is so much potential for the

technology that the opportunity is “*almost too big to grab hold of*” and even now he wonders whether he is in the right market.

Questioned about how he had been able to make do with his resources, Sam acknowledged the importance of networks as being “*crucial*” but added that it was “*just the right time, the right person...to put things together*”. On top of their own funds they had brought in another shareholder to help with international development and had also accessed some government marketing funding. Incubator residency had also been a cost effective move but he cautioned that “*because you put yourselves in an incubator, people see us as fledgling... not take us seriously*”.

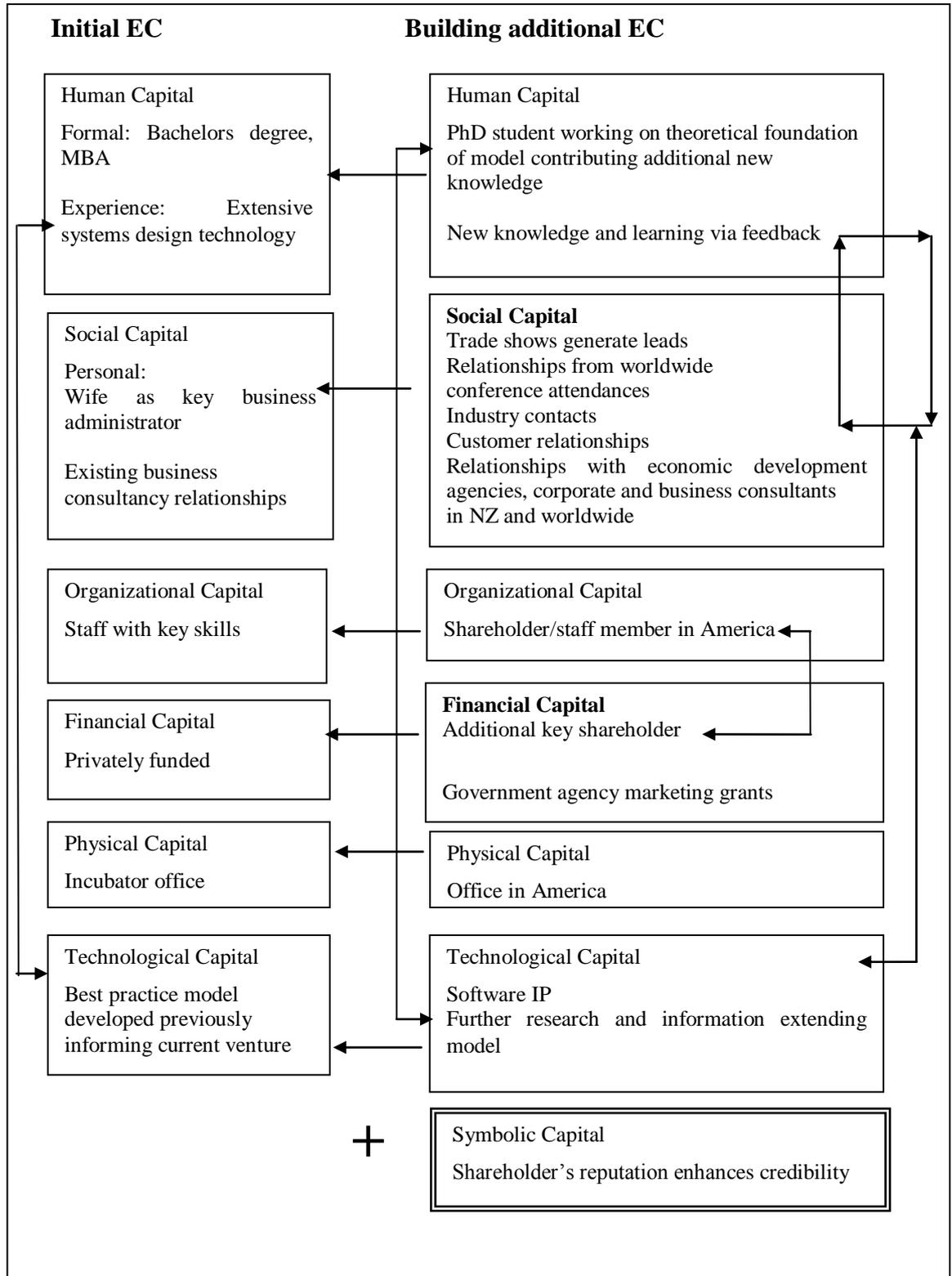
4.12.1 Sam’s Entrepreneurial Capital Development

Sam’s existing human capital provided the platform for his opportunity in tandem with technology that he had already written, as demonstrated in the two way arrow interaction on the left hand side of Figure 4.10. Developing his opportunity has augmented all of the components of his entrepreneurial capital as can be seen in the complex interactions on the right hand side of Figure 4.10. In the first instance, his human capital has been developed by the acquisition of new knowledge. This has happened in two ways. Being used as a case study for another PhD thesis has contributed to this knowledge and is also serving as a basis for continued technological capital. Thus, there is a two way flow between both his human and technological capital represented by an arrow on the inner right hand side of the diagram. Sam’s social capital is developed with new global relationships which also act as conduits for feedback. This means that, as with earlier figures, there is a three way interaction that reinforces and develops his human, social and technological capital.

Figure 4.10 captures the links between these three components of Sam’s entrepreneurial capital and the direction of the arrows show that the relationships work both ways. By this it can be seen that his entrepreneurial capital is built and augmented in a cumulative process of social interaction.

Figure 4.10

Sam's Entrepreneurial Capital (EC) Development



The financial and organizational components of his entrepreneurial capital have been built with the appointment of a shareholder/employee responsible for international development. Arrows reflect this additional interaction. In addition, this appointment has also brought with it a contribution to Sam's symbolic capital because of the shareholder's highly regarded reputation.

4.13 Ken's Opportunity and Resource Development

Ken was the first of two serial entrepreneurs¹³ interviewed. His human capital has formed over many years of practice, following a solid grounding in corporate management experience. From the time that he used a redundancy package to buy a small business within the industry and building it on a "sweat equity" basis prior to selling to a public listed company, he has consistently started new businesses with a focus on using technology as an enabler. His view of opportunity encompassed both discovery and creation perspectives; *"some of them have been very much falling into the 'we've seen an opportunity and we've pursued it'; others have been where we have actually gone out and created the opportunity"*. One of the six projects that he is currently working on is very much a situation where he created the opportunity and *"we are creating a whole new market"*. Improvements and catch-ups in technology have been opportunity enablers also, *"you know we look for those sorts of opportunities and say how can we ride off the back of those sorts of opportunities?"*

When he started one of his businesses there were very few people even building web sites, which demonstrated how fast technology has evolved and explains why he looks for additional ways to *"clip the ticket"*. He is currently working closely with the university to help commercialize some of their cutting edge technologies as well as utilizing their in-house development team. He has a philosophy that not everything is going to work, commenting that he has had some *"real successes and some abject failures"*. Laughingly he qualified that sometimes it is just *"misjudging what the opportunity is; sometimes it has been the wrong partners"* but also the lack of resources, in particular financial resources, had been a contributor to failure. After

¹³ A serial entrepreneur develops ventures sequentially over many years, whereas a portfolio entrepreneur may run several ventures simultaneously.

experiencing a bank manager many years ago who “*became the ogre from hell*” Ken has an aversion to bank funding, preferring to fund through his own resources or cash flow. He thinks this tends to be the New Zealand way, commenting “*one of the problems in New Zealand is that banks will only lend where they are well secured and where there are widgets involved*”. Additionally, “*when you take on debt you are actually giving away equity. In one way the most expensive debt in the world is equity, even if you have got a successful business*”. However, he acknowledges that without further finances one of his companies will grow no further and for this reason has brought in a venture capitalist.

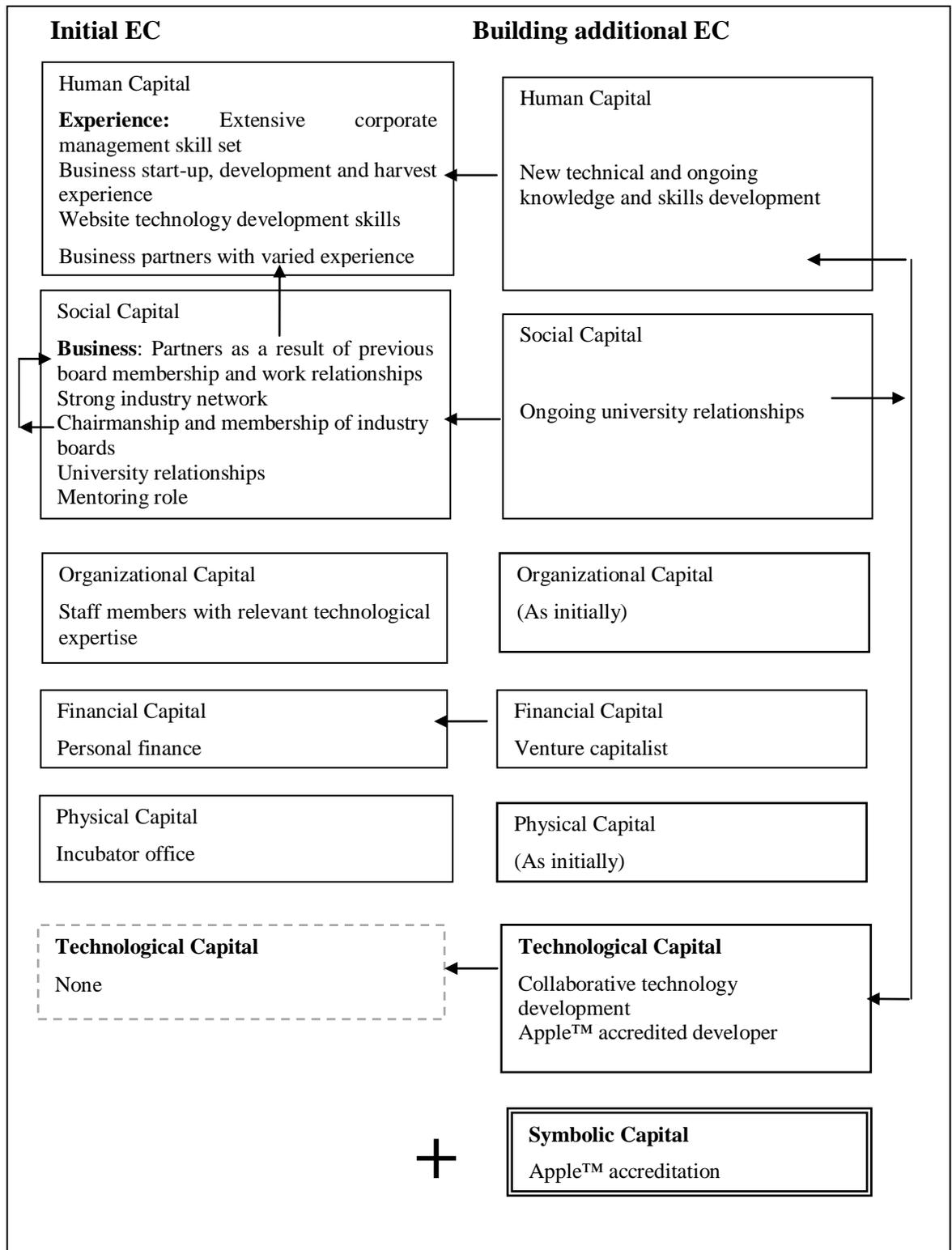
4.13.1 Ken’s Entrepreneurial Capital Development

Since Ken is a serial entrepreneur he has amassed valuable existing entrepreneurial capital. Figure 4.11 shows his human capital is comprised of extensive industry experience with a skill set that he has also developed in the course of establishing and operating a number of his own ventures. Input from his business partners also contributes to this initial entrepreneurial human capital.

His business was already established prior to moving into the incubator where, as an anchor tenant, he fulfils a mentoring role with the younger residents. Being offered incubator residency reflects his embeddedness within the industry and also relationships formed whilst serving on the local government enterprise development board. These relationships feed into his social capital and have in turn facilitated an additional layer of interaction with the university which augments his technological capital. He works closely with a university department to develop and help commercialize their technology in a mutually beneficial relationship. Thus, he builds his human and technological capital in a collaborative way, as shown in Figure 4.11. Additionally, in the process of developing technology with which to secure Apple™ accreditation, Ken has further augmented his technological capital with a flow through to symbolic capital.

Figure 4.11

Ken's Entrepreneurial Capital (EC) Development



4.14 Ted's Opportunity and Resource Development

Ted, the second serial entrepreneur in the sample, has been running businesses since he was 14 years old. He laughed as he suggested that his current operation, of which he was a co-founder and is now Chairman, might be the oldest IT company in New Zealand, launching in the 1980s. This in itself is presenting some problems because, not only are their products 10 to 15 years old with new product development “*not very cutting edge*”, but his shareholders are all looking for exit strategies which makes it hard to have a long term vision. Faced with the question as to whether his opportunity was a mountain discovery/climbing variety or a mountain building/creation variety, Ted was definite he had created and built it, commenting that he didn't know of many opportunities that were waiting to be discovered any more. To clarify his view, he said “*you know a new technology comes along and that opens doors or a new market access, for instance us getting into China is going to be a big shift so, you know, is that a mountain? Because you can't just walk up there and take it, you've got to go and create a business out of that opportunity. Everything is a question of a lot of building and finding a way to turn an opportunity into an income stream*”.

The opportunity to start this business arose when he was looking for a particular software system and found a company who “*were on to a good idea but it needed a lot of work*”. He forged a deal whereby they supplied him with a large number of copies of the software in exchange for them getting the software up to specification. However, when paid on completion they “*just lost the plot – bought new motor bikes and stopped answering the phone*” so he purchased the business, bringing in an industry leader as a silent partner. He credits his verbal and negotiation skills in getting the partner on board as being both his initial resource and his biggest asset in the early days of his business; when encountering “*the usual small business struggle*”. Three years later and “*after a long haggle over price*” he took over full ownership, also taking their lead engineer and giving him a share holding.

For Ted, the crux of being an entrepreneur is “*that they put themselves in a situation and find a way to make it work*”. In addition he suggests that “*what drives it is the kind of vision of wanting something to happen and badly*”. Ted felt that the notion of resourcefulness was the best way to think of an entrepreneur; the No. 8 wire metaphor

I explored being *“an expression that I don’t actually resonate with”*. He explained that he felt that *“most of the people on this plant don’t have resources to spare so most people do things with what they have got and to make it like a hero thing in New Zealand is a bit strange really”*. Instead he holds that entrepreneurs *“find their resources; they don’t make do with what they have got so much as go out and find what they need...I think an entrepreneur doesn’t just sit there and make do with No. 8 wire... he goes hunting with survival techniques ”*.

Ted illustrated this by telling me about going out and finding a venture capitalist because he had the concept of developing the *“ultimate package”* for his industry, but instead going from *“being a lean machine doing things really well to being reckless...chasing opportunities, losing our direction and pissing off some of our good customers in the process”*. The end result was the need to buy back their shareholding; a situation requiring resourcefulness.

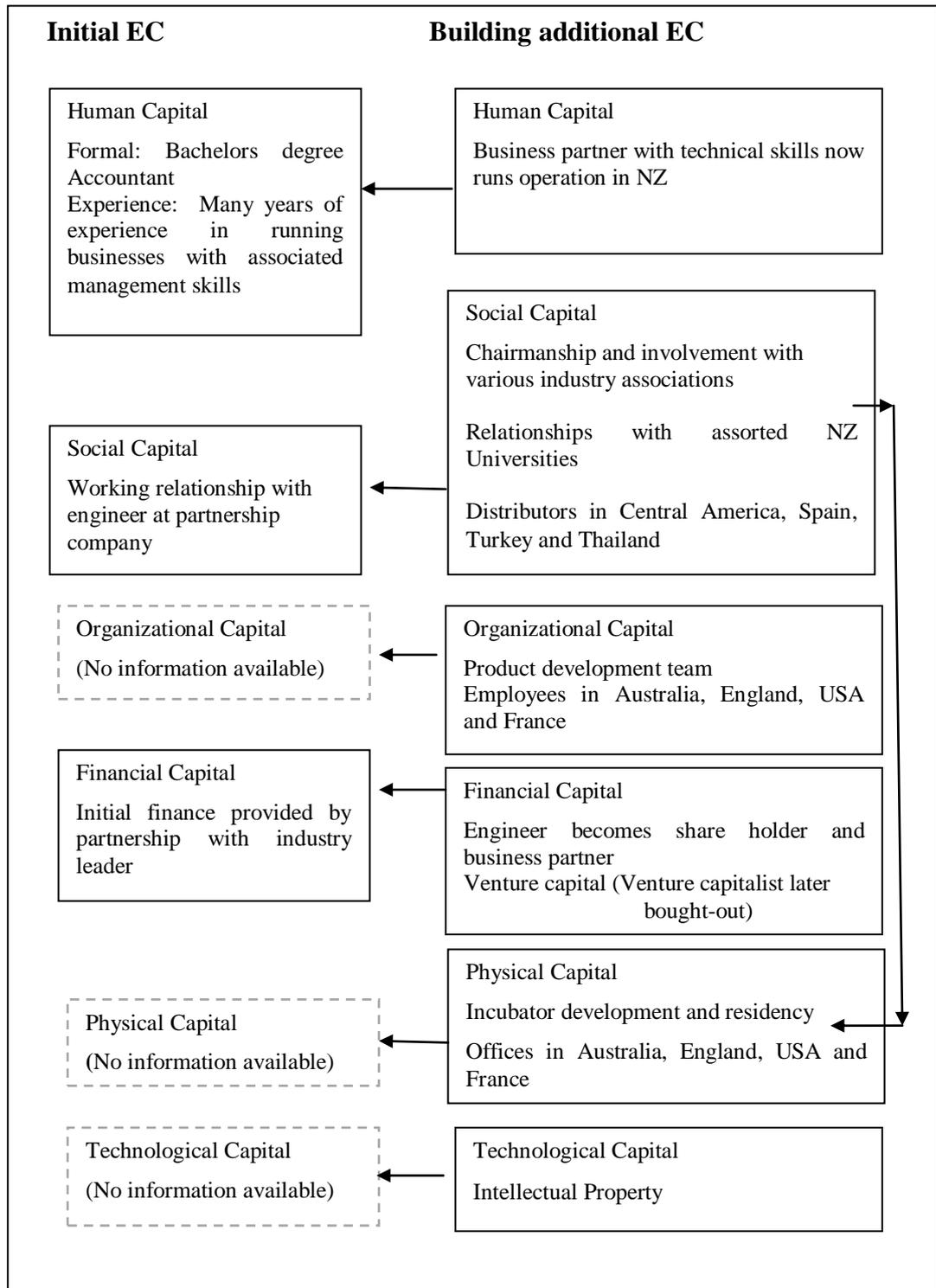
Ted commented that *“we have done so many deals where we have looked at the deal and say, we hate this deal but we’ve got to pay the wages”*. However their ‘ultimate package’ with all of the work it required was *“chasing that dream. It still hasn’t been”*.

4.14.1 Ted’s Entrepreneurial Capital Development

Ted formed his business over two decades ago. Figure 4.12 shows that augmentation of his entrepreneurial capital is quite straightforward. His account digressed away from his own company and he elaborated how his social capital and he himself, was pivotal in the initial concept, funding and development of the incubator, where his company remains an anchor tenant. This connection is highlighted with an outward arrow from social capital to physical capital. His company has grown to the point where it is now the provider of the world’s most technologically advanced software in the industry.

Figure 4.12

Ted's Entrepreneurial Capital (EC) Development



4.15 The essence of the metaphors

This section displays the accounts of the entrepreneurs with regard to the two metaphors introduced in the interviews. The first metaphor asked whether the respondents perceived their opportunity as a discovery, like a mountain just waiting to be climbed, or whether they perceived it to be a creation opportunity where the mountain needed to be built first. Although Sue said that her fit with the metaphor was ‘definitely’ mountain climbing (see Section 4.5), she subsequently spoke about building, so I have placed her in the mixed category. Introducing the metaphor generated much nodding of the head as if in understanding and recognition of their particular opportunity circumstance. The only entrepreneur from whom I was unable to elicit any form of ‘yes, no or a bit of both’ dimension was Guy who is omitted from this table.

Table 4.2

Mountain Discovery versus Mountain Creation Perspectives of Opportunity

	Opportunity discovery and mountain climbing perspective	Elements of both opportunity perspectives	Opportunity creation and mountain building perspective
Tim			•
Bob	•		
Jon		•	
Sue		•	
Ian			•
Kit		•	
Ben		•	
Jim	•		
Rex	•		
Roy		•	
Sam			•
Ken		•	
Ted			•
Total	3	6	4

Table 4.2 highlights that of the thirteen responses, the majority (almost 50%) believed their opportunity experience was characterized by a mix of the discovery and creation elements. Of those entrepreneurs who described their opportunities as discoveries, Bob is a good illustration of this category. As mountain climbers, discovery and alertness go hand in hand. Prior knowledge and technological capabilities can provide insight into market needs in relation to customer problems (Zahra, 2008). Bob's extensive industry knowledge and technical background acted as a precursor to his awareness that other players had provided a gap which he could exploit, a "competitive imperfection" (Alvarez & Barney, 2007, p. 13) in the market. Additionally, expert leadership where industry knowledge resulted from being embedded in the industry in which the opportunity was discovered; the use of risk-based data collection tools, such as market research, information gathering from government and trade associations; external finance on the basis of being able to explain to outside sources the nature of the opportunity, all point to actions associated with the dominant discovery view of opportunity (Alvarez & Barney, 2007). Thus, the opportunity was like a mountain, just waiting to be climbed. Importantly however, knowing how to climb the mountain was contingent on Bob's initial entrepreneurial human capital. The path was idiosyncratic to him.

The creation view comprised those entrepreneurs who felt they were building and creating their opportunity. Zahra (2008, p. 247) contends they would typically "chart a new terrain without compasses, maps or signposts. Their imagination and labour combine to determine what happens and unfolds". Reading Tim's narrative suggests his terrain was uncharted, reflecting the need for extensive new knowledge creation 'de nouveau' and the lack of any path-dependency on which to search along known routes (Teece, Rumelt, Dosi, & Winter, 1994). His product was based neither on customer need nor problem solution nor was there an existing market structure or exogenous shock that caused the opportunity. Instead the seed of the opportunity lay in his imagination and his beliefs. The emergent opportunity is then enacted out of that imagination in action and interaction with others (Gartner, et al., 2003).

Table 4.3 shows the practicalities of how the entrepreneurs spoke about and dealt with their financial constraints in relation to the second metaphor. This metaphor in effect traversed two colloquial phrases associated with New Zealand culture; kiwi

ingenuity and operating on the ‘smell of an oily rag’. The second phrase had the most resonance with the respondents. Only Ted and Ben specifically opted to talk about kiwi ingenuity and what it meant to them and their venture, whereas mention of ‘an oily rag’ was synonymous with many individual opportunity and resource experiences and was reflected in the strategies for dealing with living on the ‘smell of an oily rag’.

Table 4.3

Dealing with Living on the ‘Smell of an Oily Rag’

	Bootstrapping - own finance, family and friends	Government agency funding	External consultancy or contract work	Contractors over employees	Venture capital funding
Tim	•	•			
Bob	•	•	•		•
Jon	•				
Sue	•				
Ian					•
Kit	•		•	•	
Ben				•	
Jim	•		•		
Rex	•		•		
Roy			•	•	
Guy		•			
Sam	•	•			
Ken					•
Ted	•				
Total	9	4	5	3	3

4.16 Chapter conclusion

My purpose in producing the opportunity and resource stories was to provide a rich and dynamic account of the unique experiences of the respondents and highlight the “interaction between the different actors at play in an entrepreneurial endeavour”

(Steyaert & Bouwen, 1997, p. 49). The narratives and associated visual depictions of the resource interplay provide a picture of how the entrepreneurs actually developed their opportunities by using resources at hand and augmenting resources by building a web of interwoven relationships.

To bring this chapter of opportunity and resource stories to a close I turn to Johansson's (2004, p. 280) comment that stories and storytelling are "crucial to the articulation of experience". The following chapter interprets the entrepreneurs' experiences.

Capturing the Meaning: Interpreting the Experiences

“As scholars, we should be willing to make ourselves available to the surprise of what we can see in the experiences of entrepreneurs” (Gartner, et al., 2003, p. 124).

5.1 Introduction

This chapter, the second in the duo elaborating on the findings of my study, captures the meaning of the entrepreneurs’ experiences. It draws out themes that arose from the Interpretive Phenomenological Analysis. Seven broad themes are gleaned from the experiences of the interviewees. These themes illuminate different aspects of the opportunity and resource connections of their lived experience. Table 5.1 lists the seven themes. The first theme is divided into sub-themes to reflect two different aspects of human capital as it relates to varied opportunity development perspectives.

Table 5.1

Themes from the Data Analysis Process

1. Centrality of human capital to opportunity
 - 1.1 Prior knowledge: The basis of opportunity
 - 1.2 Learning by doing: Opportunity development
2. Building legitimacy
3. Tapping into social resources at hand: Social bricolage
4. Resource economy: A practice and a mindset

Although the seven themes are delineated separately, it should be mentioned at the outset that there are some elements of overlap. As already drawn attention to in the opportunity and resource stories of the previous chapter and particularly in the visual diagrams of each of the narratives, interrelationships underlie the processes of opportunity and entrepreneurial capital development. Distinguishing where one form of entrepreneurial capital starts and the other stops was not always clear. In this respect, Shaw et al. (2008) too emphasise the interplay between various components of entrepreneurial capital. Similarly, in the themes presented in this chapter, an example of this interplay is apparent in the ‘building legitimacy’ theme. Reputation can be an existing element of an entrepreneur’s human capital formed over years of industry experience. It can also be an outcome of social relationships formed during the course of opportunity development. The building legitimacy theme therefore epitomises these complex interconnections.

Following this introductory section, chapter five includes seven sections, each of which discusses a theme that emerged from the data analysis. Pertinent excerpts from the interview transcripts are used throughout to highlight the themes. The penultimate section integrates the stories with the meanings and introduces two figures. The first, Figure 5.1, captures the substance of each theme by building on Figure 1.3 from the introductory chapter of this thesis. It delineates the two complementary and dynamic processes of resource development in terms of tapping into existing entrepreneurial capital at hand and building additional entrepreneurial capital in order to ‘make it happen’. Figure 5.2 is the second figure. It builds on Figure 5.1 to draw opportunity into this dynamic design-resource connection. Section 5.10 brings the chapter to a conclusion.

5.2 Centrality of human capital to opportunity

A major theme to emerge from the analysis was the importance of the human capital component of entrepreneurial capital to opportunity. This theme is split into two sub-themes which bring attention to initial stocks of human capital and the subsequent dynamic process of building additional human capital.

The first sub-theme focuses on the importance of the stock of prior knowledge and experience embedded in the entrepreneur as existing human capital. Observers have long noted the association between prior knowledge and the firms entrepreneurs build. It is typically associated with the discovery view of opportunity where entrepreneurs recognize the existence of a pre-existing opportunity because it fits with their existing knowledge (c.f. Shane & Venkataraman, 2000). By contrast, my interpretation of this theme has resonance with the idea that opportunity is endogenous to the entrepreneur. In this fashion, opportunity is instead created on the basis of prior knowledge, skills and experience. This interpretation builds upon the view that it is the “actions, reactions and enactment of entrepreneurs” (Alvarez & Barney, 2007, p. 15; see also Gartner, 1985; Sarasvathy, 2001a) that create opportunities. Therefore, rather than view initial human capital within a conventional sense as prior knowledge that exists in a latent form that may or may not be leveraged, attention is focused on the entrepreneurial actions that create value from that prior knowledge. In other words, how an entrepreneur exercises existing human capital in opportunity creation development.

The second sub-theme turns attention to entrepreneurial capital and how existing stocks of human capital are developed in a dynamic learning process in order to make opportunity ‘happen’. Thus, it focuses on how the initial entrepreneurial human capital of the entrepreneur is augmented and built upon to develop additional entrepreneurial human capital and in the process, opportunity.

5.2.1 Initial entrepreneurial human capital: The basis of opportunity

Of the fourteen interviews, with the exception of a single respondent, opportunity was created on the basis of their initial entrepreneurial human capital. This comprised their prior industry knowledge, skills and experience. Accordingly, opportunity was embedded in the entrepreneur based on this initial entrepreneurial human capital.

The embedded relationship between prior industry knowledge, skills and experience is illustrated by a comment from Ian that makes reference to his initial human capital in relation to a venture:

...I mean the nature of the opportunity wouldn't have happened without me because, I guess, experience I had and gained, you know was quite unique to me.

Ian's remark draws attention to the notion that opportunity does not simply 'exist'. From this perspective an opportunity is endogenous to the entrepreneur rather than existing in some pre-determined form. Instead therefore, opportunity is intrinsic to the individual. It is based upon that individual's prior knowledge and experience. Without Ian, this opportunity would not be; it is contingent upon his existing human capital.

Another illustration of the embedded nature of knowledge and experience to opportunity is Kit. Figure 4.5 depicts how Kit's human capital has developed in tandem with his technological capital, forming the basis of his opportunity.

For the two sets of co-entrepreneurs there existed an additional layer of complementary skills sets which they were able to combine and leverage to create opportunity based on their prior knowledge. Jon and Sue looked to their skills first and foremost to assess where those skills could best be utilized in the marketplace:

We looked at the skills that we had got and where we could apply them (Jon).

He had the knowledge and I had to make it happen and that is where our strength is...because we've got a range of skills between us the opportunities come up.

In Jon and Sue's situation it appeared that the opportunity arose as a direct result of their human capital. It was not an opportunity that was a distinct entity sitting 'out there' but was brought into existence because of their idiosyncratic knowledge and experience. As Sue noted, opportunities continued to emerge on the basis of their human capital. This hints at interdependency such that without Jon and Sue the opportunity would not exist, brings to mind the intertwined relationship between the dancer and the dance, where neither exists independent of the other and it is hard to

tell what is contributed by the dancer (the entrepreneur) and by the dance (Gartner, 1989; Sarason, et al., 2010).

Reuber and Fischer (1999, p. 32) view the previous experience that entrepreneurs possess, or their “experientially-acquired expertise,” as a “stock of experience” because it is indicative of what an entrepreneur brings to the venture; what they have accrued up to that point in their life. This ‘stock’ therefore has a temporal characteristic. It should be noted that Reuber and Fischer (1999) exclude formal education as a variable in their model, however following Becker (1964), it is a contributor to human capital in this study. The stock of experience that the entrepreneurs bring to their opportunity is therefore represented in their initial entrepreneurial human capital in my study.

The two serial entrepreneurs, Ken and Ted, brought a stock of experience and venture development lessons already learnt to their new ventures. They had a starting advantage over the rest of the sample, who by comparison were novice entrepreneurs. Ken’s stock of experience had formed over many years:

I had been a general manager for quite a large company so I had some ... and you know I had some significant training ... I had been running my own business; I had done a number of senior management courses and things like that...I knew travel. That was where I started. I knew travel intimately.

It is thought that a stock of experience contributes to the formation of schemas (Weick, 1979) through which historical experience is translated into current practice. Thus, experience is an “antecedent of present and future states” (Reuber & Fischer, 1999, p. 31). These schemas form a “dominant logic” (Prahalad & Bettis, 1986) through which an entrepreneur filters information and assesses opportunity. Because of that deep industry knowledge, Ken was able to see the potential that evolving technology applications could open in the travel industry and beyond. Under the premise of dominant logic, Ken’s embedded knowledge had in turn acted as the basis on which to enact his opportunity:

...and my job was about reporting to the main board in the UK about where travel was going on a global basis in a ten year time frame. And I got really interested in video texts and the whole web, so it was through that whole process back in the early eighties...

By the same token, Bob's prior industry knowledge and experience also formed a dominant logic. His association with the industry since the seventies influenced the way he processed information and meant that he:

...kinda knew quite a bit...I understood the medicines sufficiently to know that nobody else was actually doing it right.

Thus, it was his existing knowledge of the industry that made him conscious of a better way to meet market needs. In this way, opportunity was idiosyncratic to Bob.

Tim, as the only respondent not to have had prior industry experience, lacked a component of initial entrepreneurial human capital that existed in the other entrepreneurs. He was nevertheless endowed with a certain stock of experience. He had a high level of formal qualification and had applied his commerce and legal skills for some years. Indeed the majority of the sample had tertiary qualifications reflecting high levels of investment in human capital. Nevertheless, in order to convert that investment into value, entrepreneurial action is required. In order to make the opportunity embedded in their existing entrepreneurial human capital happen, learning is usually required, as discussed in the following sub-section.

5.2.2 Learning by doing: Opportunity development

The importance of learning by doing is often crucial to opportunity development. Existing knowledge, skills and experience are embedded in the entrepreneur and form the basis of the opportunity. However, actually developing the opportunity is a dynamic learning process which contributes to a "stream of experience" (Reuber & Fischer, 1999, p. 31) influencing the venture development process. According to Woo, Daellenbach, and Nicholls-Nixon (1994) experimentation and learning is core to the entrepreneurial process and therefore to the design process underpinning this

thesis. I am guided here by Ardichvili et al. (2003, p. 106) who point out that “while elements of opportunities may be “recognized”, opportunities are made not found.” The data came together under a ‘finding a way to make it happen’ dimension when, having embarked on entrepreneurial action, they had no guiding frame of reference (Huber, 1991) for that action. A comment by Ian emphasises that learning is integral to making opportunity happen:

...um...in terms of actually making it happen for us, for me particularly, was quite different to anything else I have ever done. I knew I knew a lot about education, and I knew I knew a lot about e-learning. I knew I knew pretty close to nothing about software development. I knew I knew very little about, you know, the marketing side of things and all the other things that you discover along the way...

Attention is focused on the notion that entrepreneurs operate at the edge of what they do not know (Hill & Levenhagen, 1995) and refuse to enact their limitations. Finding a way, meant learning by doing. The following comments from four of the entrepreneurs suggest they were operating at the edge of their knowledge parameters, that they did not yet know the way.

We didn't know who our customers were, who our partners might be, we didn't know anything about anything (Tim).

I had this thing inside me that I wanted to do this thing and I never knew how I was going to do it (Bob).

We said we would do it without knowing how we were going to do it (Guy).

We really had no idea what we were doing (Jim).

One construal of these quotations is that the respondents were unaware of the design process required. In other words, they did not yet know how to link opportunity and resources together in new venture creation. Their existing stocks of experience were inadequate for this linking process. That is, there was no existing schema (Weick,

1979). Scharmer (2001, p. 139) calls this “not-yet-embodied knowledge”. The experience of developing the opportunity did not exist within their current frame of reference. Delmar and Shane (2004) state that prior firm formation influences the ability of entrepreneurs to establish new ventures because they have learnt by that experience. For example, as illustrated in Figure 4.11, Ken has a base of human capital formed through prior venture start-up experience. If knowledge is defined as “information combined with experience, context, interpretation and reflection; it is a high value form of information that is ready to apply to decisions and actions” (Davenport, De Long, & Beers, 1998, p. 43) then without context specific knowledge there is no mental model against which interpretation and reflection can take place. On this basis, Figure 4.1 provides an example of how Tim’s lack of industry experience has influenced his venture development.

Reuber and Fischer (1999, p. 33) suggest that the base or stock of experience is “shaped by particular sequences of experiences” as founders continue to learn, building a “stream of experience”. Fiol and Lyles (1985, p. 510) view learning as the “process of improving actions through better knowledge and understanding”. Therefore, learning by doing becomes an imperative to human capital development. In illustration is Ian’s comment:

I realized and recognized that I don’t have all the knowledge required.

A lack of experience in this respect means that they had no prior exposure to “successful and unsuccessful scripts in the production of meaningful, powerful and legitimate business outcomes” (Chiasson & Saunders, 2005, p. 753). Louis (1980) suggests that if the actual experience of a situation differs from what is anticipated, people feel overwhelmed. Implicit within these comments is that the respondents had to make sense of their situation and in order to enact it, had to learn how to go about developing their opportunity. Guy brought attention to this lack of knowing and need for learning:

The problem was there weren’t the customers there... we had to learn how to sell it.

Learning is “the process whereby knowledge is created through the transformation of experience” (Kolb, 1984, p. 41). It is described by Rae (2005, p. 324) as “an emergent, sense-making process in which people develop the ability to act differently, comprising knowing, doing, and understanding why”. In other words, learning can be thought of as an ongoing fine tuning in knowledge development to make sense of the situation. Sensemaking involves an iterative learning process of “trial, feedback and evaluation” (Teece, et al., 1994, p. 17). Baum and Singh (1994, p. 387) comment that feedback is “an action or activity initiated by someone or something that sets in motion activities or responses by others which then affect the original source of the activity”. The learning process therefore involves social interaction and drawing information and knowledge from other individuals in a feedback loop, as meaning is constructed through experience and a new reality created (Weick, 1995). In illustration, Figures 4.5, 4.7 and 4.8 all capture a feedback loop in action as each entrepreneur drew upon the knowledge of customers to enact their opportunities. Figure 4.2 shows how Bob drew knowledge from an even wider range of stakeholders. Within that social context the entrepreneur gains practical “knowing-in-action” and makes sense of what they can and cannot do (Rae & Carswell, 2001, p. 156). Mills (2008) found start-up experience was an emergent, trial and error process. In my study too, this type of experimentation is illustrated by:

We really had no idea what we were doing...So we started scoping the software, got it signed off, got the client type of thing and as quick as a flash we realized again that what we were using wasn't going to cut it (Jim).

Comments from another two of the interviewees allude to the need for this fine tuning process:

Maybe the difficulty... the way I focus is online marketing and that's more difficult than what it seems at first. It is techniques I had to learn (Kit).

If I'd sat down at the beginning of it and written a business plan within two weeks I would have been throwing it in the round file

because everything we have done to date has just been through evolution (Ben).

What is apparent from the narratives is the degree to which on-going learning by doing and human capital development is necessitated throughout the venture development process. The impact of experience on the entrepreneurial learning process is reflected in Ian's attitude to learning by doing as he grew and adapted with his venture, turning his stock of experience into a stream:

I guess there are lessons to be learnt along the way so, you know doing things the hard way sometimes helps you make the mistakes early on.

An explanation therefore is that the respondents had insufficient knowledge of the design process. They had knowledge gaps because there was no path-dependence for them to follow (Woo, et al., 1994). No 'been there, done that' to provide the experiential knowledge, the routines and structures within which to assimilate the knowledge and translate it into entrepreneurial action. There existed no 'sense making' of what works.

However, what follows from this is the interviewees then embarked on a process of enactment to bring opportunity into existence. This is portrayed in the literature as the "trial-and-error discovery and learning process of new venture creation" (Larson & Starr, 1993, p. 6; see also Mills, 2008). Tim was able to move from having no existing industry knowledge or experience as his opportunity and development story (4.3) describes. He enacted his opportunity by building his human capital through learning and experimentation. Similarly, Jon's comment alludes to learning that comes via trial and error experience:

We knew it was large but we thought we would build incrementally what we wanted to do.

In this regard the "art" of entrepreneurial practice is said to be learnt experientially (Rae, 2005), as Bob touched on:

Now I've got enough bits put together that I know how the final steps are to be put together to realize it.

In order to piece the bits of his puzzle together and make sense of what he can and cannot do, Bob has also actively courted external relationships with NZ Trade & Enterprise and Microsoft. These interactions have filled his own knowledge gaps and built his human capital, as shown in Figure 4.2.

However, ongoing learning is also a requirement of serial entrepreneurs. Ken and Ted, the two interviewees with previous venture development experiences, spoke of building additional entrepreneurial human capital. Ken's adaptation to new technology reflected an ongoing learning process and the further development of his human capital, as the following comment confirmed:

I still look for opportunity... I think at the end of the day you are always learning. So, there are skills that I don't have and do need and we have to constantly reinvent ourselves (Ken).

What the respondents may not appreciate is how much the value of their entrepreneurial capital increased. Although the opportunity was embedded in their existing human capital, learning by doing further developed their entrepreneurial human capital, enabling opportunity development.

5.3 Building legitimacy

The imperative to build legitimacy was resonant throughout the narratives. This theme provides insight into the vital importance of the legitimating activities required by an entrepreneur to overcome the liabilities associated with a new venture. In the eyes of stakeholders there is a need for reassurance and the respondents repeatedly commented on the importance of building trust and credibility. Legitimacy is socially constructed and refers to "a generalized perception that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, beliefs and definitions" (Suchman, 1995, p. 574). As entrepreneurs endeavour to position themselves within social structures it is the amount and forms of capital and the value attributed to that capital by others that determine their placement in the

structure (Shaw, et al., 2008). For example, this might manifest itself in New Zealand when a member of the country's All Black rugby team decides to start a venture. Because they are given celebrity status within the media they could capitalize on the symbolism attributed to their own field performance. The symbolic capital projected establishes a reputation in the eyes of the public which is not, however, always reflected in business success. Nevertheless by projecting behaviour that equates with social norms and expectations their position within the structure is validated. As Tim aptly put it:

Launching our products through an operator really gives you a lot of legitimacy in the community's eyes.

Young firms endure the liabilities of smallness, newness and legitimacy (Aldrich & Fiol, 1994) because no track record exists on which to form a basis of trust in the relationship they seek with stakeholders. That is to say, they are not yet embedded in the structure. Roy referred to the perceived risks associated with dealing with a small newcomer:

You know, how they see you... offering something that they can get from a bigger player. They will always go for a bigger player; it is less risk for them.

However, although Roy viewed this risk as a constraint, the structure in which he was embedded was also an enabler. Because he had previously worked in a profession that is normally regarded by society as trustworthy he is able to turn that existing "credit of renown" (Stringfellow & Shaw, 2009, p. 140) to his benefit:

They trust you because they know you have worked in a profession that does what they know.

The need to obtain resources is often dependent on the ability of the entrepreneur to create and influence the transaction or exchange relationships with resource providers (Katz & Gartner, 1988) and as evidenced by Roy, trust can both enable and constrain these important exchange relationships. Smith and Lohrke (2008, p. 320) argue that trust is the "grease that starts the wheels and keeps them moving". Thus, establishing

trust reduces the uncertainty for the stakeholder and is a central lesson for the entrepreneur, as Jim commented:

It is all about trust you know...it's 101...unless that person trusts you, they are not going to buy your software.

The passage of time is a factor in keeping the wheels moving and overcoming the liability of newness and could almost be considered a natural part of the opportunity development process. Over time relationships will form and contribute to establishing credibility in the eyes of stakeholders. In this regard legitimacy becomes an operational resource that can be actively extracted as “strategic legitimacy” (Tornikoski & Newbert, 2007, p. 315). Jon and Sue recognized the value of legitimacy as a potential resource when examining a move into the Australian market.

Because we have now been in business for six or seven years so we have credibility...we had no track record (Jon).

Starr and MacMillan (1990) suggest that rather than attempting to build legitimacy it is possible to co-opt it, either by association or endorsement. Co-option then would effectively be a bricolage process achieved by tapping into available resources within the entrepreneur's existing social structure. In this regard, legitimacy co-option was evident throughout the data. Respondents gained leverage in the eyes of stakeholders by co-opting social resources at hand. On the one hand, endorsement was a particularly common thread running through the narratives. For Bob, endorsement was a confirmation that he was heading in the right direction with his product. By having this public form of user endorsement he has also built the symbolic capital component of his entrepreneurial capital as shown in Figure 4.2:

The clinicians have universally voted us as better than [X], [Y], or [Z]. They like us better; they like the product better; they like what we are doing, okay? They have universally voted us better.

Both Jon and Sue's company and Ian's company have found that credible New Zealand corporations using their products have secured them endorsement. Figures 4.3 and 4.4 also show how such endorsement has contributed to the formation of

symbolic capital. Dealing with credible organizations is therefore a viable form of legitimacy building, as Ian commented:

...from that point on it all became about validation, building credibility so we had to get some local validation of our product and, um, and we were very very blessed in getting some very credible organizations that have agreed to deal with us.

Similarly, by becoming an Apple accredited developer, Ken was able to piggyback on that endorsement to establish legitimacy in the market place and also build symbolic capital, as shown in Figure 4.11. Tim summed up how important the endorsement by a leading global telecom analyst had been in building his symbolic capital:

So for us, it has been a real boon because now when I talk to people here in the market in New Zealand I say "we could develop some apps for you" and they say, "well, what sort of references can you...?" "Well here's a report that says we are one of the top ten companies in the world for [X]"...and they are..."oh well that's good enough..."

On the other hand, co-opting resources by association was also a consistent thread running through the narratives. Figure 4.9 captures how, in practice Guy looked within his social structure and extracted value from both his father-in-law's association with IBM and an employee's previous employment history with a noted company in the United Kingdom, as a means of establishing legitimacy and building his entrepreneurial capital.

An example of symbolic action conveying personal credibility and capability (Zott & Huy, 2007) was employed by Rex, the only one of the respondents to specifically mention their tertiary qualification. By drawing attention to the prestige of the university where he had obtained his qualification, Rex sought to implicitly impart information to potential resource holders. Importantly he also drew value from converting this existing symbolic component of his human capital, as seen in Figure 4.7, to financial advantage via contract work:

It is bloody easy for me to pick up good contracts because they see that I have good experience and also an [X] MBA.

A further form of legitimacy by association was residency in the incubator. The incubator establishes its own reputation by dint of attracting and nurturing innovative technology companies. The symbolic inference attached to innovation that residency implied was apparent in Roy's assertion:

...It shows you as being innovative...Oh, you're in [X]!..That must mean something. They don't know what it means; just that it must mean something...

By contrast, incubator residency can also have a negative connotation. Although Sam needed a way to upgrade his office presentation, and the incubator afforded him that opportunity, he pointed out that:

You have had to be cautious about it because you put yourselves in an incubator...people see us as a fledgling...not take us seriously...walk that line...

In addition, because he was developing educational training software, Ian believed the incubator's link with the university was a useful cross-association that enhanced his credibility.

Ben also employed symbolism to build his legitimacy. He took a major global client to an up-market winery to create the right impression, staging a European ambiance amongst the vine leaves that would serve his purposes, and portray the right "*feel and dynamics*". He was acting "as-if" (Gartner, Bird, & Starr, 1992, p. 17). This example of self-presentation and social influencing strategy falls within the confines of impression management (Elsbach, 1994) and suggests that Ben was constructing an organizational identity of capability and success. He wanted the client to 'make sense' of him, to connect the dots as it were, in familiar surroundings. In this sense, signals are sent to convey viability and competence (Zimmerman & Zeitz, 2002).

Lounsbury and Glynn (2001) found that entrepreneurs create identities via story telling. The crux of this line of reasoning is that an entrepreneur will shape interpretations of their new venture potential in order to foster perceptions of legitimacy by potential external resource providers. In line with this, Ben suggested there was a degree of ‘talking themselves up’ at trade shows:

We were going to [X] a bit prematurely, on purpose though, because we want to get the name out there and make sure that the industry is ready so that when we do go big we are not sitting there waiting.

Additionally, it appeared that Jim’s account had an element of fiction. That is, he seemed to present himself and his business to potential clients with a degree of poetic licence:

I mean to get the first client, obviously they want references and we had to think oh crickey, who can we get to be a reference? And it really has been a challenge for me, not in a moral sense but...you’ve got to fake it till you make it, right? And often you have to fake it, you know...‘I’m [X] from some other company’ and pretend that you are someone else...

In this respect Baker et al. (2003) found that entrepreneurs improvised accounts of their businesses in order to create images of legitimacy. Bhidé (2000, p. 104) refers to such resourcefulness as “tactical ingenuity” to explain the creative ploys some start-ups engage in to overcome and adapt to the problems they face in attracting and securing resources.

Prospective customers need to be able to see some tangible evidence that the company is above board and likely to deliver. Smith and Lohrke (2008, p. 317) say that the need for cognitive trust in a relationship is based on evidence of trustworthiness where “everything seems to be in proper order or the other party appears to possess required capabilities”. The need for references was a repeated comment and it seemed that the need to convey some tangible evidence of capability was vitally important. In particular this reference requirement would seem to have

particular relevance for new technology ventures that rely on being able to project intangible software that possibly does not yet exist. Ken spoke of the difficulties in gaining institutional finance without widgets and the impression gained is that respondents faced similar hurdles to gain market finance. The following selection of comments confirms the dependence of a new venture on external testimony:

References to a small business are everything (Jim).

It all became about validation, building credibility... I think that is one of the main hurdles... getting those reference sites (Ian).

The need for a tangible reference site was also mentioned by Tim who has found that when his sole customer failed to launch his company's product the much needed reference site also failed to eventuate. The repercussions have impacted on his venture development process:

...it is very difficult for us because...you know...they were supposed to be our reference site but they haven't launched it yet so they are not a reference site... so we're back on the smell of an oily rag...

A further way to signal competence in the market and establish legitimacy and recognition is also achieved via attendance at trade shows or through workshops and seminars to demonstrate expertise and "influence its image" (Reihlen & Apel, 2007, p. 146). Tim, Bob, Ben and Sam all specifically mentioned trade shows as having the ability to project an image and facilitate business leads. Figure 4.10 gives an indication of the wide spread of stakeholders to whom Sam needed to signal his competence, with workshops an effective signalling medium:

...we just say 'hey look, we are not asking you to buy, simply come along and we will run a workshop for you'. So they only have to sit through one of those workshops and see the response that they get from real people with real businesses...

Guy faced an additional hurdle. Although the first product he developed is now well tested and established, his latest hardware is expensive and cutting edge and as yet,

somewhat unproven. In that regard he commented that he depended on the reputation of his global distributors and the trust they have built within their relationships to gain traction. This situation reinforces that the overlapping social structures and the social interactions through which entrepreneurship is constructed, are instrumental in building trust, reputation and legitimacy.

An additional aspect of overcoming the liabilities associated with a new venture was raised by Kit who was the only entrepreneur operating as a 'virtual' on-line entity:

...I think, when you are on the internet you disconnect with the local community because 95% of my interactions on the internet are with people overseas. Half of them probably don't even know I'm in New Zealand...

Trust is an essential ingredient in any exchange relationship and is essential to on-line marketing where it is called "the currency of the Web" (Mohammed, Fisher, Jaworski, & Cahill, 2002, p. 249). Reliance on the internet and its associated anonymity and lack of face-to-face interaction, means it is difficult for prospective users to gauge anything about Kit. A company's website is no indicator of its trustworthiness. With no physical sales presence and no tangible 'shop front' or office by which to judge whether his firm was likely to be around the following day, Kit faced a constraint in establishing legitimacy the other software developers in the sample did not. Morse, Fowler and Lawrence (2007) suggest that a 'virtually embedded' venture can overcome this by ensuring users have access to information system-based alternatives to trust such as rating systems, which is a mechanism utilized by Kit on his website.

5.4 Tapping into social resources at hand: Social bricolage

In the previous section, I mentioned how co-option involved a legitimacy building process which could resemble a bricolage process because it involved tapping into available resources within the existing structure. In this section, I further elaborate on how the entrepreneurs tap into existing social resources to develop opportunity. I introduce the concept of social bricolage to describe the process of how the entrepreneur taps into resources at hand in the inner environment. Hence the

entrepreneur taps into the existing social structure for resources located within that structure, in a process of social bricolage. Baker et al. (2003, p. 265) coin the term “network bricolage” to describe the process whereby founders in their study used existing personal and professional networks as “the means at hand”. In this respect, social bricolage and network bricolage share an overlap; social bricolage also draws on existing networks as a means at hand. However, where the two constructs differ relates to opportunity. In the first theme it was highlighted that opportunity is embedded within the entrepreneur based on prior knowledge and experience. In other words, it is endogenous to the entrepreneur and therefore resides in the inner environment. Social bricolage is a process of utilizing existing entrepreneurial capital to make that endogenous opportunity happen. By comparison, network bricolage draws on existing networks to exploit opportunities “at hand” (Baker, et al., 2003, p. 265). Implicit within network bricolage, therefore, is that opportunity already ‘exists’ and may reside in the outer environment.

Social bricolage was a difficult theme to capture because the coding built up around a ‘tapping into others’ aspect but also seemed to fall within my earlier sub-theme 5.2.2 in which developing a stream of experience by learning was part and parcel of ‘finding a way to make it happen’. This resource interrelationship further reflects the overlap between certain elements in the emergent themes and led to consideration that the social structure in which the entrepreneur was enmeshed was in actual fact fundamental to ‘making it happen’. In other words it reinforced the socially constructed nature of entrepreneurship. Social bricolage therefore draws attention to the overlapping structure of social capital and how embeddedness in that structure is part of ‘making it happen’.

The value of network relationships drawn from the entrepreneurial experiences appeared to reinforce social capital as a metaphor for advantage (Burt, 2005). Respondents drew value from their position within their social structure. The structure contains strong ties that one would expect to see between family and friends, what Granovetter (1983, p. 202) describes as “a densely knit clump of social structure”. Tim drew on his strong ties for financial and physical capital as Figure 4.1 portrays. However, more ‘loosely knit’ relationships, for instance former work colleagues and general acquaintances; people you ‘just know’, are also within the

existing social structure. In this respect, Ian was able to utilize a weak tie for his venture funding, as Figure 4.4 indicates. These two examples give some weight to Anderson and Jack's (2002, p. 195) suggestion that "tapping into an extended pool [of networks] which exist outside the business...may offer an alternative, perhaps even a superior option to the limitations of the finite supply of internal resources". Therefore, tapping into available networks is one way to surmount resource constraints. Social bricolage reflects a leveraging of existing network relationships from within the inner environment, and of enacting the structure of friendship, to facilitate opportunity development.

Strong ties were particularly useful for some of the respondents whose relative youth together with the age of their business, meant they did not yet have access to a wider range of industry relationships:

We basically relied on the generosity of friends, family, colleagues (Tim).

...in terms of using friends and family and what not...my wife does, back then, did quite a bit of work helping us and so did Jim's partner as well, basic design work and stuff and we had a friend who did a bit of accounting work for us...(Rex).

In contrast, those respondents with more years operating within their respective industries had developed greater relationships from which to draw value. The social structures in which they were embedded had a greater reach. Comments made by three respondents refer to the significance of their prior industry experience in establishing useful networks:

I had a very strong network within the industry... I was well connected (Ken).

Having been in that industry I had a few good networks (Ian).

I've got a lot of associates around the world and in New Zealand and so I cash in on that (Bob).

Social bricolage was also a means of tapping into existing entrepreneurial human capital to make the opportunity happen. Guy utilized a strong tie with his brother to draw fraternal human capital into the venture. Similarly, Sue's comment demonstrated how she drew upon her existing friendships to tap into their human capital:

You know trying to keep up with technology is just absolutely impossible... but I do know people who do and so I just make a phone call.

Serving on industry boards seemed to be an additional useful form of tapping into existing social capital. Ken leveraged his position within his social structure, as shown in Figure 4.11, to draw business partners for the venture and contribute to his initial human capital. Ken reflected on the importance of this type of interaction to him, but his comment also raises the question of the degree of symbolic capital associated with board membership. There would be little argument with the suggestion that some people accept board memberships in the expectation that there is a mutually beneficial two way flow. Those boards with symbolic socially constructed value would carry an additional cachet (Zott & Huy, 2007).

I had a very strong network within the industry in that I had sat on the [X] Board and I was Chairman of the [Y], you know stuff like that so I was well connected within the industry (Ken).

Figure 4.9 gives an insight into the relationship between Guy's initial social and organizational capital with the arrow on the lower left hand side indicating a link from existing university relationships to his organizational capital. Thus, he drew upon the university structure in which he was embedded to develop his opportunity. However, as his comments indicate this is an ongoing relationship, which emphasises the dynamic and intertwined nature of these resource relationships:

All of our staff have come from the university; pretty much all our engineers have come from the university so that was very positive. We always use their fourth year students as well...we get a lot of value out of that (Guy).

Guy's insider information meant he knew that the students were worthy of employment. A number of interviewees commented to the effect that you cannot judge a book by its cover. In illustration is Sam's observation that:

...people can look brilliant on paper, they can present in a suit and tie and look really good before you find out if they are a good consultant or not. You can get a lot of damage done in that time.

Following this logic, Jim and Rex's graduates in turn tapped into their own social structures and brought in their own fellow graduates.

Basically the other people we have got and kept have been recommended by him, out of who he studied with (Jim).

This would seem to bear a resemblance to Jack's (2010) idea that 'friends of friends' act as secondary links or 'nodes' to link into other structures.

However, existing relationships did not simply act as a conduit for information and knowledge flows. As previously mentioned, both Tim and Ian tapped into their existing social structures for the initial financial capital with which to make their opportunity happen.

...I have somebody that I know, an acquaintance that I worked with a few years prior...he said to me that he had this big property deal that had fallen through...and do you know of any good investments going around?...(Ian).

Social bricolage is important to the process of tapping into existing resources in order to make opportunity development happen. The next theme further expands the concept of bricolage as an entrepreneurial capability of doing more with less.

5.5 Resource economy: A practice and a mindset

In the last theme I elaborated on social bricolage as a process of tapping into resources at hand that are located within the existing social structure. This theme

further extends conceptualizations of bricolage. The respondents were seen to use the financial resources at hand, which is akin to a process of bricolage. The practice and mindset of resource economy that was evident in the data suggested that financial bricolage is practiced. I interpreted this financial bricolage to be practiced in either, or both of two ways. The first hinted at a financial juggling act and suggested the respondents practiced resource economy by using the financial resources at hand to develop their opportunity. Although financial constraints are likely in themselves to necessitate resource economy, the interviewees provided some insight into how they “created something from nothing” (Baker & Nelson, 2005, p. 329). The second approach suggested a mindset of resource autonomy to make it happen, independent of external finance.

Unprompted in any way by me, Guy chose the “smell of an oily rag” metaphor to describe the need to work within an extreme financial constraint:

Because it is very difficult when you have got a business idea to take it and actually start running with it when you haven't got any available funds to do it, so it is all based on the smell of an oily rag.

In a similar vein, and perpetuating the Kiwi notion of innovation and ingenuity as beginning with a germ of an idea from “blokes in sheds” (Frederick & Carswell, 2001, p. 13), Jim relates how:

The first six months were just operating out of my garage in essence, and just working long hours to try to overcome that thing where we had no money to fund it.

Making do with the funds at hand was not simply a matter of improvisational survival in the early stage of the venture, but also planned, as comments by both Ted and Ian suggest:

We don't waste a whole lot of capital because we haven't got it (Ted).

By saying that, even with investment we rely absolutely on turning over every cent as many times as you can (Ian).

Ian's comments reflect a philosophy of 'cutting their coat according to their cloth', and in practice this resource economy was strategic for a number of the respondents. Many of the respondents crafted solutions to financial constraints by taking on external contract work. For example, income from external contracting contributed to Kit's initial financial capital, as shown in Figure 4.5. Bob's opportunity took longer to develop because he had out of necessity needed to contract his services to finance the venture. His comments also reflect the opportunity costs implicit in starting a venture:

So the first thing is you make yourself destitute. The second thing is that you, um, you go out and you get contracts to do work developing other people's IP and you kind of fit your work in around that so instead of taking one year to develop, you take ten years. It is as simple as that. And there is no way around that.

Conversely, in order to build entrepreneurial financial capital, Tim relied on income from external contracts, as conveyed in Figure 4.1, to keep his venture afloat. Similarly, Kit financed his operation initially by contracting and developing software for others:

...well partly during the first two years I funded it mainly by contracting, external contracting so I had... I was working on other projects and so bringing in money that way...

By contrast, Jim and Rex work full time outside the venture, contracting their services to other companies. Rex also claimed this contracting model was a good vehicle for their venture development as there was a tax advantage.

A number of the respondents referred to being a jack of all trades. For example, Tim:

I mean I do all the accounting, the hr, the sales, the marketing, the legal, the pr, the strategy so... if it's not technical, everything is my thing.

A further extension of doing everything, or sharing around the tasks is “functional flexibility” (de Bruin, Dupuis, & Spoonley, 2004, p. 9) which is a practice employed by Ian who makes do with a small team who do the development themselves:

And I guess pooling all our expertise, working really hard, is literally what has driven us through. We have done it on the smell of an oily rag....

In addition, rather than have employees, Kit and Ben both reduce operating costs by using contractors. By practicing “numerical flexibility” (de Bruin, et al., 2004, p. 9) Ben is able to ensure that his venture remains flexible in the face of adversity as his comment illustrates:

We are still running lean. I haven't got any full time employees, only contractors...because I don't want to offer anyone employment until I've got stability...

Conversely, Jon and Sue deliberately have no employees:

We run it on the smell of an oily rag. We keep very low overheads. You know, we don't have a telephonist. We don't have a ... We choose to be here as opposed to an office in the CBD. We just run a low overhead ethic (Jon).

Those with employees faced a financial juggling act to pay wages, as Ted noted:

...you know there were days when both me and my partner [X] who joined me later, phoned our parents up and begged them to lend us some money to make wages...

Incubator residency also enabled the practice of financial bricolage. There appeared to be a degree of flexibility in rent payments that may not occur in the open market, as two comments suggest:

Yep, at the time we were. I mean, I had a bit of a... with [X], the director here, sometimes I had to say we just couldn't pay the

rent...could it wait a couple of weeks but he was really understanding (Ben).

So what they've provided, yeah it's been good, you know the months when we couldn't quite pay the rent and stuff, sometimes as compared to being in the real world (Jim).

Resource economy as a mindset was manifest in a preference for autonomy over external venture funding. This was not across the board. Bob had deliberately sought venture capital to help develop the potential within his software solution. Ian talked about being prepared to take on partners and a "*smaller bit of the bigger pie*" at harvest. However, bringing on external investors seemed to involve a trade-off, as Ken intimated:

We have just had a venture capitalist come in to help fund that but, again, we have to give away our first board and stuff like that with it so...there are always tradeoffs. So we prefer to fund things through our own resources and cash flow. In one way the most expensive debt in the world is equity even if you have got a successful business. So it is that trade off.

For that reason, a number of the younger respondents expressed a preference for doing it alone or doubted the prudence of bringing in investors, a mindset Ben succinctly portrays:

...so actually bringing on somebody else who wants, who wants a chunk of your business and also wants to direct where it is going...I don't know...

Kit perhaps provided the most comprehensive rationale for not involving external investors:

I guess I'm a bit biased towards funding things through revenue, organic growth rather than investment, because I have seen the added stress and the added problems that having investors can bring... just in terms of you going from this slow organic growth

where you can kind of plan things as you go along to a sudden steep change and if things don't work out in x amount of time because of whatever reason, then suddenly you've got a problem in that you've got someone who's invested half a million or a million dollars and that's a big commitment and if you don't get sales to match that, it's a big problem ...

5.6 Co-construction of opportunity

It became evident that many of the entrepreneurs in this study actively engaged customers within the trajectory of opportunity development. Co-construction of their opportunity by the entrepreneurs in a process of social interaction is captured in this theme. What was apparent was the purposive involvement of customers in shaping and co-constructing the opportunity. The theme captures entrepreneurship as being fashioned in a symbiotic relationship from which each partner draws value.

Mainstream economists view the market as an exogenous 'given', like a 'discovery' opportunity; it exists out there. An alternative view contends that the market is the result of an effectuation process where the market is created by "determining who comes onboard" Sarasvathy (2004, p. 305). Additionally, depending on what these stakeholders commit and expect in return, "two cycles of consequence are set in motion: one is a widening cycle that increases the pool of resources... the other is a converging cycle that pushes the group toward increasingly specific goals" (Sarasvathy, 2004, p. 306). Building upon Sarasvathy's market creation argument and viewing the market as a 'virtual' structure (Giddens, 1984) and a "joint social construction" (White, 1981, p. 517), the entrepreneur then interacts with that market structure to make the structure more conducive to their own purposes and more constraining for others. This two way and mutually beneficial process is hinted at by Ian:

You know what's in it for you? What's in it for us?

The idea of co-construction implies that the structure becomes a "medium of exchange" (Anderson & Jack, 2002, p. 194) between an entrepreneur and their stakeholders. This means that the structure in effect acts as a bridging medium,

facilitating the exchange of information and resources. Within the exchange process entrepreneurs can enact the future and bring their opportunity into existence. The link between the entrepreneur and the stakeholders acts as a conduit for information so that the entrepreneur both draws from and gives to the structure. In this way the opportunity becomes a co-construction between the entrepreneur and the stakeholder. For example, customers were actively pulled into the co-construction process creating a context in which knowledge was created, used and shared (Augier, Shariq, & Vendelø, 2001). In the context of that co-construction, the entrepreneur derives value in the form of knowledge and the customer derives value in the form of individualized product specifications. In line with Woo et al. (1994) who hold that learning is predicated on feedback, there appeared to be a strong association between the feedback process and knowledge construction to ensure that the system met identified needs. The feedback loop shaped and adjusted knowledge. As discussed earlier in section 5.2.2, where on-going learning emerged as a theme, feedback and the knowledge shared and created in the circular process was seen as crucial to opportunity development. Figures 4.5, 4.7, 4.8 and 4.10 all demonstrated how the feedback process was a part and parcel of the ongoing refinement of technology knowledge with a flow through to technological capital. Thus, the co-construction process was crucial to further building their entrepreneurial human capital.

The content of some of the narratives spoke of the importance of customer involvement in the software development process. Jim and Roy both refer to their bespoke approach to software development:

We have gone to customers and we are building ‘what do you need,’ ‘what do you want’ type things (Jim).

Roy said he “*massaged*” the client relationship to keep information flowing, to the extent that he was developing customized software on the basis of customer feedback:

This is what they wanted out of the system so I have built this in for them.

Similarly, Guy mentioned:

We had a customer who was effectively sponsoring us here because they had issues... that was actually feedback from the client.

Thus the 'structure' in which the entrepreneur and client interact becomes the medium and the outcome of that mutually beneficial exchange. In essence the relationship between the customer and the entrepreneur could be seen as a collective opportunity construction – a co-construction. It was not an opportunity just waiting to be exploited but rather was created through this entrepreneur-customer interaction. In this respect two transcript excerpts serve to underscore a structuration view that entrepreneurial ventures are “recursive processes that evolve as the entrepreneur interfaces with the sources of the opportunity and engages in the venturing process” (Sarason, et al., 2006, p. 288). That is to say, opportunity is both generated and developed amidst the actions and reactions between the entrepreneur and the customer:

He was telling me about his immense difficulties in trying to find appropriate software that was ideally suited to his market (Rex).

...we started off just with a development concept really, the design, then we developed the product then we did the beta testing with a few customers. After that we went to the early adopters (Ian).

Sarasvathy (2008, p. 58) in her theory of effectuation, advances the idea that effectuators “transform current means into co-created goals with others who commit to building a possible future”. By this it can be intimated that the current or extant reality is transformed to the future, desired reality by a network of stakeholders, in effect bringing opportunity into existence. Figure 4.6 outlines how Ben and his fellow colleagues exemplify this proposition in the way they have sought knowledgeable individuals within New Zealand from whom they can draw knowledge and further build entrepreneurial human capital. In this way, knowledge is then reinterpreted and applied to bring opportunity into existence:

We just looked around and found people that had vast experience in related areas...basically lots of people that hail from different areas that can contribute in different ways (Ben).

Co-construction with stakeholders therefore is yet another aspect of the design process whereby opportunity is linked with external knowledge resources. In this instance by embedding into external social structures, knowledge that the entrepreneur needs is brought into the opportunity development process and utilized to make it happen.

5.7 Innovative solutions

All of the entrepreneurs in this study were problem solvers and therefore naming this theme ‘innovative solutions’ was the most useful way to convey the unique problem-solving interpretations the respondents were bringing to existence. The research sample consisted of technology entrepreneurs innovating in differing knowledge intensive sectors. The ventures were overwhelmingly what Samuelsson and Davidsson (2009, pp. 231-232) refer to as “creative change” ventures. These innovative ventures are either where entrepreneurs create, or are the first to enter, a new product-market arena. By comparison, “optimizing change” ventures simply involve transactions within an existing product-market place and are imitative by nature. None of the fourteen entrepreneurs were creating imitative ventures but were all involved in “creative change” and creating innovative solutions, as a selection of comments indicate:

We came up with a better solution (Jon).

We know that there is nothing really around, even on a global basis that does what ours does... we have a unique point of difference (Rex).

He also affirmed that what we were doing was unique (Bob).

It was very much designed in quite a different way to other systems (Ian).

Let’s build the world’s first online X software. And that’s what we have done (Jim).

Under the premise that entrepreneurs craft, “create or enact” (Zahra, et al., 2006, p. 937) workable solutions to problems, customer feedback was seen to act as a conduit to knowing about problems. In effect these respondents were establishing new means-ends relationships (Shane, 2000) by using customer knowledge as a key external resource. However, Hsieh et al. (2007, p. 1256) argue that entrepreneurs actually “identify valuable problems that if solved would create value”. But because problems do not present in a ‘one-size-fits all’ package they also fundamentally differ in the degree of knowledge required to solve them. Hsieh et al. (2007) suggest that in the context of searching for solutions to known problems, the learning ability of an entrepreneur relates to the ability of an entrepreneur to “acquire, accumulate and apply knowledge” (Hsieh, et al., 2007, p. 1260) in order to create innovative solutions. In addition, the individual’s subjective interpretation will influence the framing of the problem solution (Campbell, 1997), in which case historical or accumulated knowledge has a practical significance. Here, de Bruin and Ferrante (2009, p. 3) argue that there exists a “bounded space where opportunity is linked to problem solving”. Therefore, the mental tools with which an entrepreneur approaches this bounded solution space are inherently linked to existing knowledge. Problem-solving activity is “driven by localised knowledge, especially learning by doing” (de Bruin & Ferrante, 2009, p. 4). In this case, the elements central to the previous co-construction theme become enmeshed in innovative solutions. Since the sample consisted of technology entrepreneurs, the solutions involved technological innovation.

Schoonhoven et al. (1990) intimate that technological innovation has two dimensions. Within the first dimension, innovation is achieved by creating new knowledge afresh. Conversely the second dimension involves a process of combining already available technical knowledge in unique ways to create a new product. This opens up the possibility that such “knowledge synthesis” (Schoonhoven, et al., 1990, p. 180) could represent a further form of bricolage; using technical knowledge as a resource at hand. A careful re-examination of the transcripts led to consideration of technological innovation in a new light and I considered whether such knowledge synthesis was a part of the innovative solutions the entrepreneurs were delivering. Kit’s academic background would suggest he had been creating new knowledge. The following comment offers some confirmation towards the possibility that technical

bricolage may be an entrepreneurial capability to consider. Against the ‘new knowledge’ he had created he was able to test and assess already available knowledge in the form of existing technology:

...and then as part of the research we started out using some commercial speech analysis technology but it really wasn't suitable for singing because it didn't display the feedback in any kind of musical way so we developed our own software which was based on the work we had done...

Arguably what might be technical bricolage was similarly apparent in Guy's innovative solution. He was alerted by client feedback to existing technology and he combined that disseminated knowledge with new knowledge formed through his formal R & D process. In effect, his extensive research and development contributed to a “knowledge conversion capability” (Zahra, Van de Velde, & Larraneta, 2007, p. 570) that reflects Guy's capacity to transform research into commercial value:

Ours is the only real commercial one out there.

Jim and Rex's development of a cloud computing model provided them with a real point of difference in the marketplace and is another example of an innovative solution. Rex explained where they had been innovative:

We had to change our business model in terms of the way we delivered it to the customers. So we had to take the costs out of the system.

Kim and Mauborgn (2005, p. 16) describe this type of value innovation “where a company's actions favourably affect both its costs structure and its value proposition to buyers” as “blue ocean strategy”. By developing an online rather than a desk top application they had made customer access continuously available and reduced their costs in the process.

An additional consideration is that many of the entrepreneurs were also enacting workable solutions to their own problems. These solutions hinged on the ability to

build an on-going independent cash flow. For example, the need to create software that had a ‘clipping the ticket’ component was expressed both by Rex and Guy:

...using that McDonald’s philosophy of ‘do you want fries with that?’ we just clip on an additional \$x a month... (Rex).

...you know, we get \$x for that so we only need 10 customers because we get an ongoing revenue stream as well... in New Zealand we clip the ticket a bit higher” (Guy).

In this respect, when Tim’s sole customer failed to launch his product, he had to overcome that unanticipated problem because he had already factored in the customer’s need to keep buying licenses off him forever:

...and we don’t actually have to do anything more...

This explains why Tim had to then actively search for new contract work to compensate for the financial shortfall caused by losing his planned self-sustaining finance model.

5.8 Retrospective sensemaking

The terminology of retrospective sensemaking derives from Schutz’s (1967, p. 74) analysis of “meaningful lived experience”. Such “sensemaking” is, according to Weick (1993a, p. 635), an “ongoing accomplishment that emerges from efforts to create order and make retrospective sense of what occurs”. Furthermore, individuals “realize their reality, by reading into their situation patterns of significant meaning” (Morgan, Frost, & Pondy, 1983, p. 24). My interpretation of the data is that retrospective sensemaking emerged during the course of the interviews as the respondents recounted and made sense of their opportunities to me. Their stories were reconstructions of opportunity and resource development that were unique to that time and place. Friedel (2001, p. 37) makes the point that “to discover something is to uncover that which is not in view”. Thus, only in recounting their actions did elements of the opportunity and resource development make sense and fall into place. From this perspective an ‘opportunity’ is not an opportunity until after the fact.

While there were two components that fell within this theme it seemed fitting to incorporate them within a retrospective sensemaking overview because, to coin billionaire entrepreneur Warren Buffet, “in the business world, the rear view mirror is always clearer than the windshield”.¹⁴ There were a number of ways in which respondents read meaning and made sense of their actions. Notably this sensemaking was manifested in terms of opportunity in timing and the benefit of hindsight.

With regard to opportunity in timing, Bhidé (2000, p. 19) comments that “chance events and serendipity” play important roles in new ventures, in tandem with the entrepreneur’s ability to “influence their luck”. In a similar vein Gartner et al. (2003, p. 122) suggest that “to talk about favourable circumstances allows us to become aware of them, in our own situations” which aptly reflects the retrospective sensemaking encapsulated within this theme. Anecdotal evidence exists of entrepreneurs who attribute opportunity to being in the right place at the right time. A recent book title even correlates the right place at the right time to entrepreneurial opportunity (Clydesdale, 2010). In making sense of their opportunity, time was seen as a facilitator by Sue:

A lot of our success in getting us up and running was luck, then there was being in the right place at the right time (Sue).

However, time, or the lack of it, was also seen as a constraint:

I knew we had limited funds and I knew we had limited time to get ahead (Ian).

Time and place were not alone in being attributed to opportunity in timing. The ‘right person’ also arose as being as a factor in the timing of the opportunity. Bob felt that the confluence of time and place would also facilitate an opportune meeting with the right person. By virtue of being in the right place at the right time and interacting with the right person Bob would benefit from “contingent knowledge” (Dew, Velamuri, & Venkataraman, 2004, p. 664). Conversely, Sam

¹⁴ <http://thinkexist.com/quotation/in-the-business-world-the-rearview-mirror-is/357219.html>.

inferred that he was the right person; only he could have created the opportunity at that time. These views also succinctly capture the discovery versus creation perspectives that the two entrepreneurs had of their opportunity, as shown in Table 4.2. The following comments illustrate these differing perceptions:

...if you associate with certain people, certain things are going to happen...(Bob).

...I think it is just the right time, the right person... put things together (Sam).

In seeking to understand the role of timing in opportunity, Bouchikhi (1993) turns to structuration theory (Giddens, 1984) to provide an alternative representation of the entrepreneurial process. Within this duality of structure framework “the outcome is determined neither by the entrepreneur nor by the context, but emerges in the mere process of their interaction” (Bouchikhi, 1993, p. 557). On a local scale entrepreneurs must address a number of forces that impact the venture. A point also made by Sarasvathy (2003, p. 218) for whom “successes and failures are always local”. Bouchikhi (1993, p. 559) argues that chance events that occur during the process of starting and developing a venture and that are not predictable from personality/behaviour or context “transform in an unexpected way, either the context or some important dimension of the venture itself, resulting in dramatic consequences”. A chance event that qualifies Bouchikhi’s (1993) argument occurred for Ian when an acquaintance transformed his venture:

...so, yeah! You know... a bit of a miracle actually happening at that stage because he really, you know...he looked at the plans and said he would lend me some money. So, at that stage we had done a little bit of development already. He came on board and we started the business.

Furthermore, Sarasvathy (2008, p. 45) comments that “common sense suggests that there must be numerous ways of failing and succeeding that have nothing to do with what the expert entrepreneur knows how to do and does well”. Thus by introducing chance into the entrepreneurial process the lack of predictability in the outcome is

reinforced (Bouchikhi, 1993). Bob commented frequently on his perception of the confluence of timing and opportunity:

I just said, well the only way I am going to find the opportunity is to stick myself in the right place at the right time...

If you put yourself in the right place at the right time you'll ultimately make the right contact...

So, I think the best thing for me was they enabled me to be in the right place at the right time...how did they do that? By giving me some money to travel which meant that I could travel twice as much as I could, so therefore...you know I squared the opportunity possibility, being in the right place at the right time has got a lot going for it in my books.

However, it is simplistic to suggest that Bob's opportunity came down to chance in timing or some pre-determined path in his life. On top of sheer determination and passion, his extensive industry knowledge, technical background and extensive research meant the opportunity was embedded within him simply awaiting his actions and interactions with others. But the future is uncertain and unpredictable (c.f. Knight, 1921) so did he really believe what he was saying; that it was simply a matter of being in the right place at the right time? The logical answer is that Bob was "intuiting", a process Weick (1995, p. 25) describes as the "preconscious recognition of the pattern and/or possibilities inherent in a personal stream of experience". An additional consideration is that offered by Friedel (2001, p. 38) who suggests that "insight is every bit as important as the accident". In Bob's case this 'preconscious recognition' or 'insight' presented itself as a hunch:

...so I just started working on a hunch basically...

Schumpeter (1934, p. 85) stated that the success of the entrepreneur "depends upon intuition, the capacity of seeing things in a way which afterwards proves to be true, even though it cannot be established at the moment". Knight (1921, p. 227) also alluded to the role of intuition when dealing with uncertainty and risk, proposing that

“we must simply fall back upon a ‘capacity’ in the intelligent animal to form more or less correct judgments about things, an intuitive sense of values. We are so built that what seems to us reasonable is likely to be confirmed by experience, or we could not live in the world at all”. Building upon this logic, Sarasvathy (2008, p. 92) suggests that entrepreneurs in fact “confirm by experience” what seems possible. Additionally, “in other words they first devise actionable-hypotheses and then actually reify or falsify them through actions upon the world and through interactions with others”. This suggestion seems a very plausible explanation for the circumstances of time and place that Bob felt so significant to his opportunity. By telling his story, Bob was making sense of his experiences.

To this effect Bob was attributing time and place as being significant to his opportunity in a process of retrospective sensemaking, as he sought to make order out of his experiences. In this respect ‘time and place’ are Bob’s own subjective reality, rather than objective elements that would have formed an opportunity of their own accord without his actions. In other words there was no pre-condition without his entrepreneurial action. Under this premise, retrospective sensemaking is a means of opportunity enactment; opportunities are the “outcome of the sensemaking activities of individuals” (Gartner, et al., 2003, p. 109). Thus people more or less invent what they think they see and in Bob’s case, the circumstances of time and place; the ‘serendipity’ of timing is recognition of his particular entrepreneurial activity. As Weick (1995, p. 24) states “the reality is that people can only know what they are doing after they have done it”.

The benefit of hindsight is another way to rationalize and make sense of what has been. It reflects that learning has taken place and that their knowledge is no longer “not yet-embodied” (Scharmer, 2001, p. 139). Experience has made them wiser.

Looking back we made a lot of mistakes but we have learnt from them (Jim).

At the end of the day we looked at where we were, where we wanted to go and what we were currently doing (Roy).

Guy, for example, is able to make sense of what he should have done differently:

In hindsight we should have done B2B and marketed that well because we had the skills and it was before anyone was, plus we had the top customers in New Zealand.

It seems fitting to give the final voice to Tim, who in making sense of his opportunity revealed that opportunity development is “inherently linked to the dynamics of experience and is thus a learning process” (Dimov, 2007b, p. 562):

We didn't know what we were getting into and if we knew what we were getting into we would never have done it.

The past seven sections of this chapter have drawn together the themes that arose from the Interpretive Phenomenological Analysis and related them to the actual lived experiences of the entrepreneur by drawing from their opportunity and resource stories.

5.9 Making the connections: Integrating the findings

This section draws together the two chapters of findings from my study in order to delineate and better understand the design-resource-opportunity connections of the design “black box” (Augier & Sarasvathy, 2004, p. 188). To accomplish this I hark back to two figures used in the introduction of this thesis. Figure 1.2 was developed by Sarasvathy (2004b) and portrayed entrepreneurship as a process of design of the interface between the inner and outer environments. I emphasise this argument on design within this section although I reiterate here, that the outer environment I consider in this study is confined to the resource environment, which is narrower than that that envisaged by Sarasvathy (2004b). Figure 1.3 encapsulated my original questioning with regard to the design-resource-opportunity relationship. I revise and build on this latter figure in two figures which follow.

The design process I investigate in this thesis is intertwined with both opportunity and resources. In order to provide a clear and logical exposition of this process, however, I firstly separate out the resource element to concentrate on the inner and outer resource environments. My conception of these environments is that the entrepreneur's initial entrepreneurial capital belongs within the inner environment

and the outer environment correlates to augmented entrepreneurial capital. Figure 5.1 incorporates the themes in relation to these environments to depict the design-resource connection. Thereafter I introduce Figure 5.2 which brings opportunity back into the equation in order to build an encompassing picture of the design-resource-opportunity connection.

5.9.1 The design-resource connection

This sub-section integrates the themes that captured the meaning of the entrepreneurs' experiences with the associated entrepreneurial capital development pathways. It positions the themes to shed further light on the dynamic resource connections underlying the design process of entrepreneurship.

Figure 5.1

The Design-Resource Connection

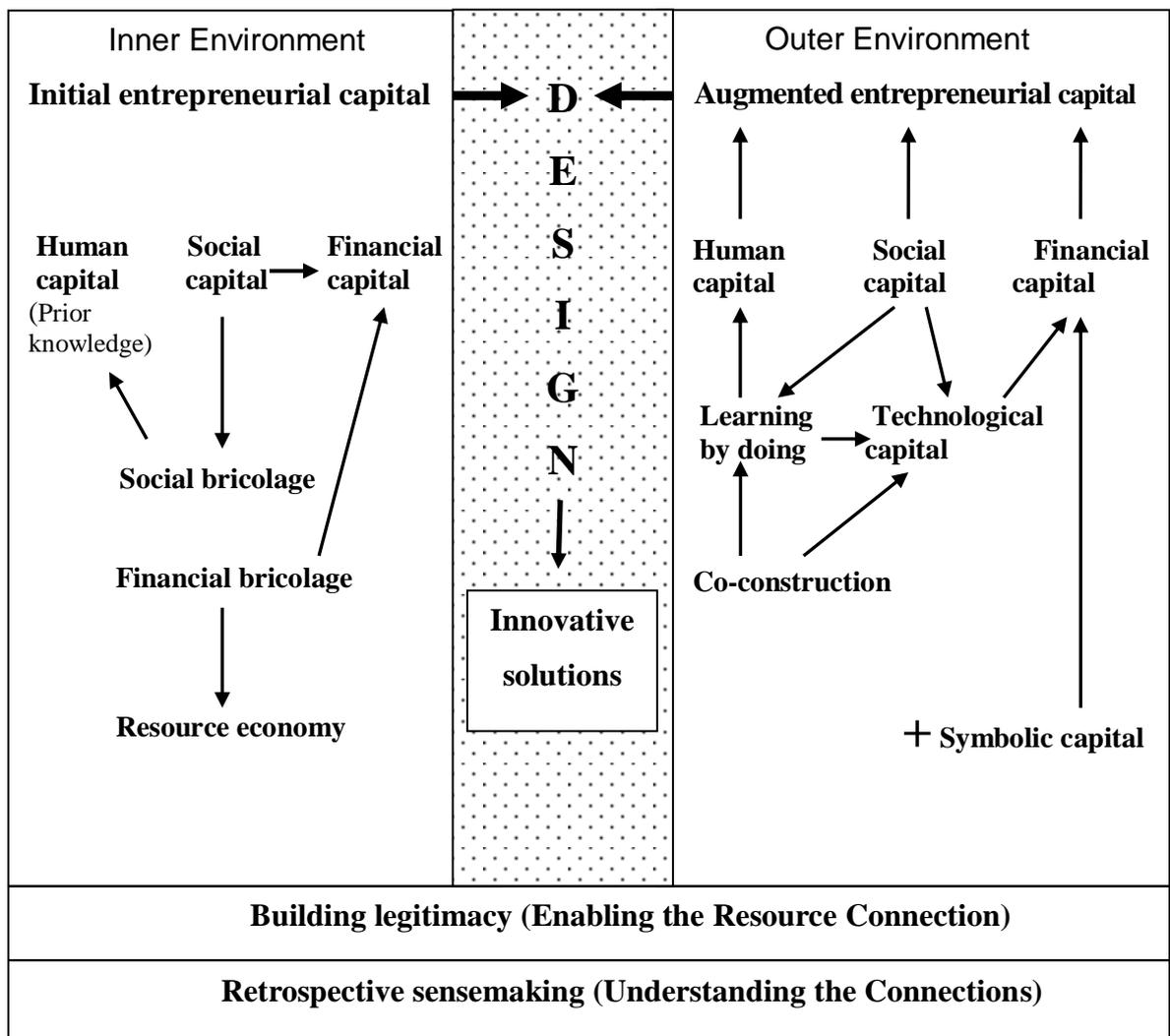


Figure 5.1 depicts within the inner environment, three main components of initial entrepreneurial capital that this study found to be significant: human capital, social capital and financial capital. Technological capital is not drawn out separately but is taken to be part and parcel of initial human capital. Four of the fourteen entrepreneurs brought existing technological capital to the venture as a manifestation of their human capital. Nevertheless, technological capital becomes a crucial consideration in the outer environment of augmented entrepreneurial capital. Physical capital does not feature in either the inner or the outer environments in Figure 5.1 because in itself, it was of little importance to the design process. Similarly, organizational capital does not merit separate consideration.

The first theme related to the human capital of the entrepreneur. In this regard the initial human capital - the stocks of experience, industry knowledge and skills that constitute prior knowledge, formed the basis of opportunity. Social bricolage was an interesting practice that emerged from the findings. Entrepreneurs tapped into their existing relationships and in this way supplemented their own human capital. For example, Guy brought his brother into the venture to supplement his technical knowledge and Ken brought in business partners for their differing areas of professional expertise.

Another theme situated in the inner environment focused attention on resource economy. The narratives suggested a practice and mindset of making do with available financial resources. The mindset was reflected in a preference for autonomy which necessitated practising resource economy. Therefore resource economy 'makes do' in a process of financial bricolage, by utilizing existing financial capital. In addition, financial bricolage tapped into the financial resources of those in the entrepreneur's existing social structure. Table 4.3 indicated that funding from family and friends was part of a bootstrapping strategy.

Thus, a picture emerged of the inner environment where entrepreneurs utilize resources at hand. I recall now my suggestion in the introduction that bricolage might be thought of as an entrepreneurial capability of doing more with less. (See section 2.3.1). In this fashion the entrepreneurs in my study were able to surmount initial

resource constraints by extracting value from existing human, social and financial resources at hand.

As Figure 5.1 indicates, there were two overarching themes that cross cut both the inner and outer resource environments. Building legitimacy facilitated resource relationships and was seen as an enabler in both environments. Similarly, retrospective sensemaking to me seemed as if it were enabling entrepreneurs to understand the whole process of opportunity enactment and implicitly therefore the exercise of their capital for entrepreneurial purposes. Therefore, this theme is shown in figures, 5.1 and 5.2, to underpin the entire design process.

The outer environment in Figure 5.1 shows how human, social and financial capital is increased to contribute to augmented entrepreneurial capital. A dynamic learning by doing process, as captured in one of the themes, directly feeds expansion of human capital. As the entrepreneurs built a stream of experience by learning by doing, on-going knowledge development enhances their human capital. Figure 5.1 also indicates that co-construction (yet another theme) results in a feedback loop with learning by doing. These two processes also feed directly into the development of technological capital. In turn the development of technological capital directly benefits the acquisition of additional financial capital, as the arrow indicates.

Social capital was drawn into the learning by doing knowledge acquisition process and the technological capital development process as the two downward arrows from social capital illustrate. For example, industry relationships were instigated as a means of facilitating knowledge flows, which also contributed to software development and intellectual property. Again, this interrelationship between learning by doing and technological development is reflected in financial returns as the upward arrow from technological capital to financial capital portrays.

The entrepreneurial capital development explanations in chapter four delineated how symbolic capital is generated by an interplay between human, social and financial capital. In the interests of clarity in Figure 5.1, it stands alone, underpinned by this interplay but its crucial significance to financial performance and ultimately venture survival is simply reflected by an upward arrow.

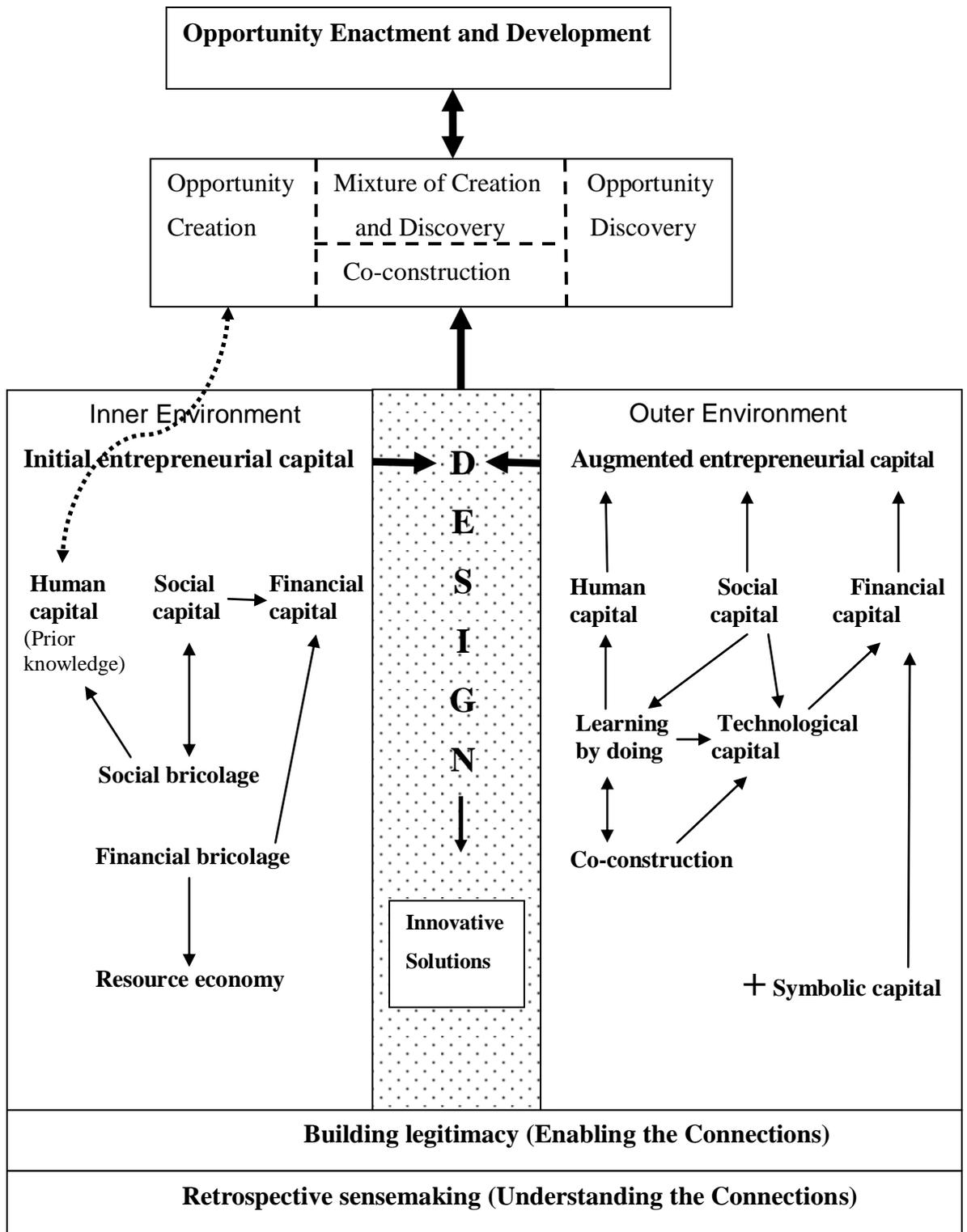
So far, I have explained the resource connections underpinning initial entrepreneurial capital in the inner environment and the processes that augment entrepreneurial capital in the outer environment, of Figure 5.1. I now point out that ‘Design’, which sits in the centre of the figure, is the interplay of these two entrepreneurial capital environments. ‘Innovative solutions’, which was a key theme of this study, are the outcome of this process of design. This is captured in the figure with a downward arrow from design.

5.9.2 The design-resource-opportunity connection

This sub-section draws opportunity into the equation and brings together the three elements of the design-resource-opportunity connection. Figure 5.2 now builds on Figure 5.1 to delineate the opportunity connection in relation to the design process. It depicts opportunity enactment and development as resulting from this design process. In other words, opportunity is the outcome of the resource environment linking process of design. This figure also incorporates the opportunity creation and discovery views that were explored via metaphor in the opportunity stories of chapter five. Thus, opportunity is represented as created, discovered, or a mixture, in line with the respondents’ perspectives. Because the co-construction theme was aligned with opportunity I have introduced it for a second time and show it in Figure 5.2 to represent a mixture of the creation and discovery elements of opportunity. I felt this was appropriate because co-construction straddles both of the opportunity perspectives. The opportunity discovery view holds that opportunity exists in some sense, waiting for the alert entrepreneur whereas the created opportunity forms from the subjective beliefs and actions of the entrepreneur. Co-construction, on the other hand was seen to incorporate both aspects. For example, Jim and Rex believed their opportunity fell within discovery parameters and yet actively engaged customers in the software development process and actually creating the opportunity. As the dotted arrow suggests, opportunity creation is more allied to the inner environment, often arising from the initial human capital of the entrepreneur, but it is imprudent to definitively state that it is solely an inner environment phenomenon. Since opportunity creation and enactment are difficult to separate, outer environment factors could well play some role.

Figure 5.2

The Design-Resource-Opportunity Connection



As in Figure 5.1, building legitimacy and retrospective sensemaking are seen as umbrella themes spanning both inner and outer resource environments. The narratives left little doubt of the need to build legitimacy and establish credibility throughout the opportunity development process. In a similar manner, retrospective sensemaking was a theme that captured the meaningful lived experiences of opportunity development.

5.10 Chapter conclusion

This chapter captured the meaning of the entrepreneurs' experience in opportunity and resource development. The themes that emerged from the Interpretive Phenomenological Analysis were introduced and combined with excerpts from the interviews. When combined with the findings in chapter four, a holistic picture shed light on the dynamic relationships that contribute to the design process of entrepreneurship. This was also encapsulated in two figures.

The first, Figure 5.1 integrated the themes by positioning them in relation to the inner and outer resource environments that are the sites of initial and augmented entrepreneurial capital. The design process was portrayed as the exercise of entrepreneurial capital in a linking process of the two environments. The second Figure 5.2 amplifies 5.1 to show opportunity enactment and development as the outcome of this design process of entrepreneurship.

Conclusion

The overall aim of this study was to extend current understanding of entrepreneurship as a process of design. In order to advance this understanding I distilled the central components underlying this design process by adopting an interpretive lens and semi-structured interviews with fourteen entrepreneurs. This empirical data provided the resource and opportunity stories of these entrepreneurs. It gave me a wealth of first-hand experience from which to glean information on two crucial aspects of design that this study revolved on, namely resources and opportunity.

I constructed twelve (because information from the two sets of co-founders was merged) narrative accounts from the fourteen interviews. From these accounts I was able to understand their resource development pathways within the conceptual entrepreneurial capital framework I utilized. I also obtained insights into their perceptions on opportunity. Additionally, I was able to obtain some sense of fit with the “No. 8 wire” mentality.

Interpretive Phenomenological Analysis captured the meaning of the entrepreneurs’ experiences. This generated seven themes. Integration of these themes with the resource environments that were linked to the use and augmentation of entrepreneurial capital (as visually portrayed in Figure 5.1); enabled me to better comprehend the nature of the design process in terms of the design-resource connection. Overlaying my findings on opportunity with this knowledge, in turn illuminated the design process by which an entrepreneur with an existing resource set was able to link from a current situation to a preferred future state and opened up the design black box of my study. Along the route to my destination, I had also obtained novel insights into how an entrepreneur utilizes existing resources at hand by practising different types of bricolage.

6.1 Answers to my questions

In this study, investigation of the design process of entrepreneurship was encompassed in an overarching research question:

What is the design-resource-opportunity connection?

Under the umbrella of this question, two main questions were formulated to separately capture each of the connections that were encompassed within the entirety of the ‘design-resource-opportunity connection’.

The first main question of the study sought to understand the connection between design and resources by asking:

1. How does an entrepreneur exercise resources within the design process?

As the conceptual framework for answering this question, I turned the lens to an examination of the entrepreneurial capital of the entrepreneur. Within this entrepreneurial capital framework, I examined the initial stock of resources of the entrepreneur. This examination of the initial entrepreneurial capital, or the ‘resources at hand’ and how these were augmented, seamlessly flowed into answering the related sub-question:

1.2 Does an entrepreneur make do with existing resources by practising bricolage, or do they seek additional resources?

In this regard, the entrepreneurial capital frameworks showed how the entrepreneurs made do with their initial resources. The individual frameworks clearly indicated the key role of initial human and social resources in the practice of bricolage.

With Figure 5.1 I integrated the themes with the overall entrepreneurial capital framework to capture the substance of the design-resource connection of the design process. The prior knowledge embedded in the entrepreneur was central. Indeed as my findings showed, for all but one of the respondents, industry knowledge and

experience were crucial initial resources, to the extent that this idiosyncratic knowledge formed the basis of the opportunity.

Stocks of experience also facilitated social relationships. The entrepreneurial capital frameworks portray initial social capital as encompassing strong ties of family and weak ties of acquaintances and industry relationships. The practice of social bricolage emerged as an important theme and accounted for the entrepreneurs' ability to make do by utilizing these social relationships for their own benefit, in order to make the opportunity happen. The social structure in which the entrepreneur was enmeshed contained human and social resources which were drawn into initial entrepreneurial capital to facilitate opportunity development. It also contained financial resources that some of the entrepreneurs tapped into, in a process of financial bricolage, in order to make do rather than seek external venture funding. Figure 5.1 depicts these two bricolage processes and their relationship with the initial human, social and financial entrepreneurial capital that were brought to the venture. Therefore, question 1.2 was answered to the extent that it was now clear that entrepreneurs can make do with existing resources by practising bricolage; however this was only one side of the coin. The other side of the coin is that an entrepreneur also seeks additional resources and often moves beyond bricolage.

It was clear from the narrative accounts and the analysis that fed into the themes, that there is more to the design process of entrepreneurship than the existing resource base. The respondents in my study told of accessing additional resources. The entrepreneurial capital frameworks depicted how the entrepreneurs further augmented their entrepreneurial capital by building a web of new relationships in order to access resources in the outer environment. This was corroborated by two interrelated themes that were based on learning by doing and co-construction, which feature in Figure 5.1. Central to these themes was knowledge. In order to further develop the knowledge base embedded in the entrepreneur and develop opportunity, there were two allied imperatives. Learning by doing was seen as pivotal in acquiring practical 'knowing-in-action'. Also, in tandem with building this new stream of experience, knowledge was created, used and shared in a process of entrepreneur-customer co-construction. In this way, social interaction with customers provided a context for accessing external knowledge.

Figure 5.1 positions building legitimacy as straddling both the existing resources and the augmented resources and provides an important pointer in answering the main question. The design process of entrepreneurship is underpinned by building legitimacy. The experiences of each of the entrepreneurs in opportunity and resource development recounted in way or another how vital legitimacy, credibility and trust were in forming and maintaining stakeholder relationships. Figure 5.1 thus portrays legitimacy as an enabler of resource connections.

The visual presentation in Figure 5.1 provided a holistic answer to the first question of how an entrepreneur exercises resources within a design process. It shows that an entrepreneur exercises resources by utilizing those at hand (initial entrepreneurial capital) in the inner resource domain whilst also augmenting entrepreneurial capital by accessing further resources within the external resource domain. Thus the design process is the exercising or leveraging of entrepreneurial capital by linking these resource environments. Innovative solutions are a consequence or outcome of this design process. Furthermore, retrospective sensemaking enabled the entrepreneurs to understand the resource connections underlying the design process.

The two corollary resource questions of my study were:

1.2.1 Does Kiwi ingenuity (the No. 8 wire mentality) play a role in the process of bricolage?

1.2.2 Can bricolage be thought of as an entrepreneurial capability?

In relation to finding answers to these two corollary questions, I found little evidence of Kiwi ingenuity playing a role in the process of bricolage. I rationalise this finding by suggesting that this is because the non-physical nature of the knowledge intensive sector largely precludes a ‘cobbled together’, No. 8 wire approach of ‘creating something from nothing’. The only indication of Kiwi ingenuity was in regard to creating a physical product which was mentioned by one of the interviewees (Ben). I might further suggest that maybe Kiwi ingenuity will cease to have any practical usefulness, as the ‘weightless’ industries continue their evolution. It may also be that generational shifts dilute the significance of the metaphor. The more ‘throw-away’

oriented society of today may not need the innate resourcefulness so characteristic in the past.

I sought to explore whether entrepreneurs practice a bricolage process in applying available resources to enact workable solutions to problems and opportunities. My findings support the proposition of question 1.2.2 that bricolage is an entrepreneurial capability closely affiliated with the design process. Bricolage, as a process of utilizing existing resources, was corroborated in a number of ways and therefore the concept of bricolage benefited from this empirical insight. I also developed the notions of social bricolage and financial bricolage to account for this.

The answer to the first question established that the design process is a linking of the initial and augmented entrepreneurial capital; that is the inner and outer resource domains. I now explain how I answered the second question:

2. How is opportunity connected to the design process?

I introduced an opportunity discovery versus opportunity creation element into the interviews by drawing upon the mountain climbing versus mountain building metaphor used by Alvarez and Barney (2007). The responses characterized the varied perceptions of the entrepreneurs in my study to their opportunity. Table 4.2 represents opportunity as created, discovered, or a mixture in line with the respondents' views. Figure 5.2, captures my conceptualization of the 'mixture' together with co-construction of opportunity. Thus, I bring co-construction into the empirical literature to show that rather than opportunity being the domain of a sole entrepreneur, evidence from my study suggests that opportunity can also emerge out of a co-construction process with the customer.

Figure 5.2 graphically answers the question of how opportunity is connected to the design process. As with Figure 5.1 it depicts 'innovative solutions' as the outcome of the design process that links the two entrepreneurial capital resource domains. In turn opportunity is itself an outcome. From these innovative solutions, opportunity is enacted and developed.

2.1 Does the opportunity exist prior to commencement of the design process, or is it part and parcel of the design process?

In order to answer this sub-question I draw attention again to the first theme, which focuses on the centrality of human capital to opportunity. The theme found that opportunity was embedded in the entrepreneur on the basis of their prior industry knowledge, skills and experience. Figure 5.2 alludes to the close association between opportunity creation and initial human capital (dashed arrow connecting prior knowledge to opportunity creation). However, my findings clearly showed that initial entrepreneurial human capital was insufficient for opportunity to be enacted and developed; there is an inner and outer resource environment interconnected process of design. Entrepreneurs create the capability to develop an opportunity by generating value from their entrepreneurial capital. It is the entrepreneurs' actions that are the essential source of the opportunity, and opportunity is the outcome of this entrepreneurial activity. Thus, opportunity does not exist prior to the design process but is an outcome of the resource interaction. Opportunity is part and parcel of the design process.

At this point, I reintroduce an earlier observation that entrepreneurship is “constructed in social interaction between individuals” (Lindgren & Packendorff, 2009, p. 26), a view with which I have come to believe the design-resource-opportunity connection shares much in common. The design process that links the two resource environments is inherently a social process. It requires social interaction in both forming initial entrepreneurial capital and augmenting that entrepreneurial capital in order to enact and develop opportunity.

6.2 Contributions of the study

This study explored the relatively uncharted territory of the design rubric of entrepreneurship. Spring-boarding from the work of Sarasvathy (2004a, 2004b) I

narrowed down the design process to be at the interface of two resource environments of the entrepreneur. I envisaged that the inner resource environment correlated to initial entrepreneurial capital and the outer resource environment consisted of those resources that were accessed to augment entrepreneurial capital. In this way, albeit limitedly so, I had operationalized Sarasvathy's perspective on design and gained new empirical insight into how it might be experienced by entrepreneurs in New Zealand. By carefully capturing the meaning of the entrepreneurs' experiences in relation to the exercise of resources, I have built an original and useful picture of the process of design by which opportunity is created or discovered, enacted and developed.

My adoption of entrepreneurial capital as a framework with which to understand the design-resource connection has provided evidence that entrepreneurial capital is a valuable concept with which to glean insight into the complex process of resource use and acquisition. Shaw, Lam and Carter (2008) and Stringfellow and Shaw (2009), successfully extended the limited literature on the concept of entrepreneurial capital (c.f. Firkin 2003). My study has corroborated their perspective, to show-case the usefulness of this concept. In particular, my findings illustrate the significance of symbolic capital to an entrepreneur, building on the empirical work of Shaw, Lam and Carter (2008). My findings reveal that in practice, entrepreneurs employ a number of strategies to overcome the liabilities of size and newness and importantly the generation of symbolic capital enables establishment of legitimacy in the eyes of their stakeholders. This finding has particular significance for those operating in knowledge intensive sectors deemed central to economic performance. Because these new ventures are frequently cutting edge, with little but the embedded knowledge and skill base of the entrepreneur, it is challenging to turn that intangibility to commercial advantage.

Additionally, the practice of co-option that I found to be prevalent with many of the entrepreneurs in my study was involved with legitimacy building. However, since I envisaged co-option within an entrepreneurial capital perspective, it supports and extends existing literature on co-option (c.f. Starr & MacMillan, 1990).

Interesting findings on making do with resources at hand or bricolage, emerged from my study. In this connection I also developed two new versions of bricolage: social

bricolage and financial bricolage, thus contributing to the development and understanding of the bricolage construct.

My conceptualization of co-construction of opportunity provides a further novel contribution. As my findings demonstrated there was purposive involvement of customers in shaping and co-constructing the opportunity. This I argue broadens thinking on the nature of opportunity, as it extends the standard creation-discovery dichotomy to envisage an additional element in a continuum of opportunity.

Metaphors were fruitfully used in my study to gather additional dimensions. However, in the next section I highlight that one respondent mixed her metaphors. Therefore this caveat on the caution and care with which questions should be posed when metaphors are used, is a useful lesson that I draw-out from my research and is a contribution to help researchers embarking on similar journeys.

6.3 Limitations

This research may be limited by the research site. With the exception of my pilot interview, my sample was drawn from a single incubator. Thus, the sample I accessed comprised a sub-sector of entrepreneurs operating in incubators in New Zealand. They were participants in the knowledge intensive technology sector and resident in an incubator associated with a university. In New Zealand, not all incubators target the technology sector. For example there is an incubator for fashion design. However, shared experience within this single incubator did provide a common reference point and provided some evidence of the benefits associated with incubation. The sole entrepreneur in my sample who had not been through the incubation process was the interviewee from my pilot study. I made the decision to utilize his interview data because I felt his experiences added richness to my study. At the outset there was no intention to have a control group of ‘non-incubator entrepreneurs’.

At the time of my research there was only one female new venture founder in the incubator so the sample is heavily masculine in its orientation. However, across the male respondents there was a wide age range. As a group there was also a shared

characteristic in that they were highly educated, with only three of the fourteen participants having no formal education beyond secondary school. Although this might limit my findings, in mitigation I point out that the participants were all operating in different technology sectors.

The small size of my sample may be considered a limitation. It could be argued that a sample of fourteen interviewees is not reflective of a larger population but studies using Interpretive Phenomenological Analysis typically have small sample sizes in order to do justice to each participant's account of their individual experience. On that basis the fourteen interviews generated rich narratives and insight into the venture development process. Commonalities in experience across the sample suggested that a degree of saturation was achieved. It must be stressed however that my findings are not intended to be replicable or generalizable. They are my interpretation of the meanings and experiences of each individual participant.

While it might be asserted that my sample was limited in size and scope, there is variation across the stages of venture development. This provided the opportunity for me to develop an understanding of the different resources that a new venture requires over those of more established ventures. This meant that I was able to discern different patterns of bricolage between the newer entrepreneurs and those who had more developed entrepreneurial capital.

A further limitation may be that as the entrepreneurs made sense of their past experience, hindsight bias (Cassar & Craig, 2009) might mean that they incorrectly recalled their venture development process. Notwithstanding this possibility, my study was not seeking to explore success or failure or find an objective 'truth' but rather an understanding of the nuances and subtleties of individual experience. In mitigation, one theme even captured a retrospective sensemaking aspect.

An additional limitation of my study is that despite calls for context to be taken into greater account when researching entrepreneurship, this thesis takes a micro focus on the interplay between the resource environments, and the entrepreneur in opportunity development. I am taking an explicitly narrow view of context and placing the

entrepreneur at the centre of activity in order to capture the nuances and understand the individual experiences of a selection of New Zealand entrepreneurs.

6.4 Future research

Exploratory studies such as this, often find areas with potential for future research. Several suggestions have emerged from my research.

The usefulness of the entrepreneurial capital framework has potential to be extended further. In this respect, a sample drawn from a different sector might be considered. Symbolic capital was found to be an important legitimizing capital within the technology sector from which I drew my sample. Whether symbolic capital has such significance to other sectors could be an interesting expansion of the framework. Additionally, how or whether gender or age impacts on the entrepreneurial capital development/augmentation process may well offer further insights to enhance our understanding.

Bricolage is also worthy of further investigation. In pondering about technical knowledge and its significance to innovative solutions I wondered whether using existing technical knowledge as a 'resource at hand' might be a form of bricolage. This may be an area of further research potential. Additionally, entrepreneurs developing opportunity in sectors other than the knowledge-intensive sector in my study, may have resource practices that are akin to bricolage.

Similarly, metaphors might be useful in eliciting further insights into the opportunity and resource development process. In hindsight I believe I may have incorporated too much into my metaphors. One respondent who perceived their opportunity to be discovered, referred in the next breath to the opportunity being built, effectively mixing the metaphors. However, that may be circumvented by for example, using flash cards to provide a more graphic portrayal of the metaphor. Alternatively, incorporating a quantitative element to the interview may make it easier for the respondent.

6.5 Concluding comments

In bringing this thesis to a close, I have reason to reflect on the personal journey I have taken and those I have thought about along the way. My father was a classic

Kiwi ingenuity, No. 8 wire inventor. His 'Baeyertz Tape' invention features in many New Zealand publications about our ingenuity as a nation (e.g. Bridges & Downs, 2000; Riley, 1995) and even on the Encyclopaedia of New Zealand website¹⁵. It was the culmination of years of professional knowledge accumulation manifested in a tangible way to assist doctors in calculating birth due dates. I recall him forever tinkering in the garage, using what he could find or improvise with to make his early prototypes.

I also thought about his grandfather; my great grandfather, who was among early settlers arriving in New Zealand with "little more than the clothes on his back and a generous amount of chutzpah" (Woods, 2008, p. 37). He was astute enough to see that there was an untapped market for a cultural magazine. He founded and edited the *Triad*, which ran from 1893 until the late 1920s, using nothing initially but entrepreneurial flair and showmanship (Woods, 2008). Limited access to financial capital did not operate as a barrier to opportunity development. Instead starting with his own human capital, he leveraged his considerable musical knowledge and expertise to develop social resources and relationships and secure the vital credentials necessary to establish his venture. New Zealand was shaped by such early entrepreneurs as they found a way to both adapt to and reshape the environmental constraints they faced.

Thinking about this story of my ancestor, I am now able to frame it in terms of the findings of my research. I realise that for him, opportunity was probably of the discovery type since there was already demand for a cultural magazine. However, my research has alerted me to the fact that it might be rather futile to classify opportunity without first-hand perspectives from the entrepreneurs themselves. For example in my study, I moved one entrepreneur (Sue) from the opportunity discovery perspective she claimed to fit with, into the mixed category (See Table 4.2). Although she perceived opportunity as being an existing mountain just waiting to be climbed, her subsequent language was of building mountains. This apparent dichotomy led me to believe that the process of opportunity development is more

¹⁵ <http://www.teara.govt.nz/en/inventions-patents-and-trademarks/2/3>

relevant than the nature of the opportunity. Nevertheless creation and co-construction of opportunity is integrally linked to the resource base. My great grandfather's story and history also illustrates that it is possible to leverage human capital and through entrepreneurial action overcome paucity of financial resources.

It is my hope that this thesis has some material impact. By exploring how entrepreneurs actually convert and exercise existing resources and then augment these, we may begin to better understand the behaviour, processes and skills required to grow new ventures. With a better understanding of actual praxis, we can go beyond textbook a priori strategies and offer useful and relevant advice to both aspiring and practising entrepreneurs on how they can 'do more with less'. Given the current climate of world economic recession and its impact on the business environment any insight into entrepreneurial ingenuity and resourcefulness merits further academic investigation.

I have learned that one of the key components in opportunity is industry knowledge and experience embedded in the entrepreneur. That being so, government policy publications should place less emphasis on the environment as containing existing opportunities and more emphasis on the centrality of human capital to opportunity creation, enactment and development.

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Appendix

Information Sheet

Participant Consent Form

Authority for the Release of Digital Transcripts

Fact Sheet