Demystifying Entrepreneurial Internationalization through an Entrepreneurial Lens: Case Studies of Australian Information and Communications Technology Small to Medium Enterprises

A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy

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DECLARATION

I certify that except where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program; any editorial work, paid or unpaid, carried out by a third party is acknowledged; and ethics procedures and guidelines have been followed.

Signed: .........................................................

Fahri Benli

Date: ............................................................


ACKNOWLEDGEMENTS

The Doctor of Philosophy was a cognitive journey of intellectual discovery and of humility and patience. Many people at the School of Management helped and inspired me over the course of my journey. I would like to thank everyone for an adventurous experience of a lifetime in helping me push my intellectual, physical and emotional boundaries.

First and foremost, I am truly indebted to my supervisors – Associate Professor David Gilbert and Professor Prem Chhetri. Their guidance in research was complemented by their mentoring in preparing me for an academic career. The combination of these two innovative scholars has shown me a paradigm within and beyond academia. They showed me how to get back on the horse each time I fell off, which has been a reflection of disruptive turbulent times in the 21st century.

Secondly, I would like to thank Firdes, my wife, and Tuba, Ahmet and Hakan, my children, to whom I can finally say that the journey is over. I also wish to extend many thanks to Dr Warren Staples and Dr. Anuja Cabraal, who have provided invaluable support and inspiration throughout my journey.

Thirdly, special thanks go to REDCentre and Austrade, who kindly agreed to participate in this research and provided valuable information for this study. I am also indebted to Dr Shahid Yamin who motivated and assisted me with invaluable information at various stages of the research.

Finally, I would like to thank everyone who assisted me in acquiring the fundamentals to explore knowledge beyond my own environment and to gain an understanding of how turbulent and chaotic the world really is.
ABSTRACT

This thesis examines the entrepreneurial internationalization activities of Australian Information and Communication Technology (ICT) Small to Medium Enterprises (SMEs) through an entrepreneurial theoretical perspective. The field of international entrepreneurship evolved from McDougall’s (1989) study which compared domestic versus international new ventures and provided an early definition of the term ‘international entrepreneurship’ (IE) as new ventures that engaged in international business. Research in IE has mainly focused on new patterns and timing of SME internationalization without reference to entrepreneurship theory as the primary theme.

According to Shane and Venkataraman (2000, p. 218) entrepreneurship theory is ‘the ‘study of discovery, evaluation, and exploitation of opportunities’. Oviatt and McDougall (2005, p. 540) define IE as ‘the discovery, enactment, evaluation, and exploitation of opportunities – across national borders – to create future goods and services’. International new venture creation, a process influenced by founder-managers, firm characteristics and capabilities, and the external environment, is examined through an entrepreneurial theoretical lens.

This thesis was undertaken for three key reasons. The first was to examine entrepreneurial internationalization through an entrepreneurial theoretical lens as opposed to using international business theories. The second was to conduct qualitative studies to investigate and advance theoretical insights. Finally, the examination of entrepreneurial internationalization utilizing entrepreneurship as the primary theme encompassed issues such as opportunity recognition and exploitation.

Case study was the prime methodology for this research and in-depth case interviews were conducted with eight founders and senior managers involved in internationalization. Multiple sources of data were used for validity and reliability through triangulation. The sample consisted of eight internationalized Australian ICT SMEs that produce hardware or software for international markets.

The findings revealed that firstly, opportunity seeking actors have the ability to scan and exploit trends of change and introduce new products, services or processes by starting a new international venture. Secondly, opportunity seeking drives firms to leapfrog stages of international strategies when this suits the opportunity being exploited. Thirdly, agile entrepreneurial firms have the ability to innovate rapidly and simultaneously to adapt and
integrate product, processes, services and strategies to match and create global ICT markets. Finally, agile entrepreneurial firms have the ability to collaborate and manage partnerships with internal and external stakeholders for knowledge creation and risk sharing.

Overall, the findings support other findings that international entrepreneurship is a dynamic and adaptive phenomenon (Evangelista 2005; Coviello, McDougall & Oviatt 2011; Jones, Coviello & Tang 2011). Through the entrepreneurial viewpoint of internationalization, the results reveal that there is a ‘hostile’ and small Australian ICT market which has fostered opportunity-seeking and advantage-seeking behavior for founders and managers of ICT SMEs. Management teams are seeking global opportunities that increase firm sales and profitability. They are seeking global advantages by collaborating with partners that give them the best advantages for knowledge creation and risk minimization. Implications for theory suggest that a holistic view of entrepreneurial internationalization should be dynamic, so that entrepreneurial firms adapt readily and collaborate with internal and external stakeholders to create wealth.
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Chapter 1: Introduction

1.1 Overview

The purpose of this thesis is to investigate the entrepreneurial internationalization activities of Australian Information and Communications Technology (ICT) Small to Medium Enterprises (SMEs) examined through an entrepreneurial viewpoint. This chapter is an introduction to the research, providing background and outlining the broad field of international entrepreneurship. The chapter briefly describes the research aim, the rationale for the research, the gaps in current theory that provide justification for the research, and an explanation of the methodology utilized. It also includes an outline of the thesis.

1.2 Background to the Research

International entrepreneurship is defined as ‘the discovery, enactment, evaluation, and exploitation of opportunities – across national borders – to create future goods and services’ (Oviatt & McDougall 2005, p. 540). The field of international entrepreneurship (IE) evolved from McDougall’s (1989) study comparing domestic and international new ventures. The early definition of the term ‘international entrepreneurship’ focused on new ventures that engaged in international business. However, studies that followed challenged extant theory in international business by examining the formation of international new ventures by multi-national enterprises (McDougall, Shane & Oviatt 1994). Further studies in IE considered ‘the intersection of international business and entrepreneurship’ (McDougall & Oviatt 2000).

The first research on SME internationalization was conceptualized as an incremental static process (Johanson & Wiedersheim-Paul 1975). Further, research in IE has mainly focused on new patterns and the timing of SME internationalization (Johanson & Mattsson 1988; Bell 1995; Coviello & Munro 1997; Bell et al. 2003) without reference to entrepreneurship theory (Coviello, McDougall & Oviatt 2011; Jones, Coviello & Tang 2011). Thus IE has so far been explained through an international business theoretical lens, which substitutes new or smaller firms for large firms (Gamboa & Brouthers 2008). Although, IE research has emerged from small firm internationalization studies they have not necessarily incorporated entrepreneurship theoretical frameworks (Coviello, McDougall & Oviatt 2011). Several recent reviews have critiqued IE research as a field of inquiry. Gamboa and Brouthers (2008, p. 555) stated that IE research is replicating international business studies ‘by substituting smaller/newer firms for larger ones’. Keupp and Gassman (2009) argued that IE research lacks theoretical insights and
precludes efforts to advance generalizable IE theory. Coombs, Sadrieh, & Annavarjula (2009, p. 31) said that ‘a theoretical paucity summarizes the present state of research in IE’ and recommended that qualitative studies be conducted to investigate and advance theory. It is of note that these reviews and critiques come from international business researchers while entrepreneurship researchers have mainly focused on domestic entrepreneurship and new venture creation (Gaglio & Winter 2009; Timmons & Spinelli 2009).

In response to these reviews, several researchers have acknowledged the gaps in IE research. In a recent review of 323 papers in IE research spanning between 1989 and 2009, Jones, Coviello and Tang (2011) identified three major areas of IE research: (1) entrepreneurial internationalization, (2) international comparisons of entrepreneurship and (3) international comparisons of entrepreneurial internationalization. There seems to be a lack of IE research in the process of entrepreneurial activities such as opportunity recognition and exploitation, new venture creation and linking opportunity recognition processes to venture type (Coviello, McDougall & Oviatt 2011; Jones, Coviello & Tang 2011).

Timmons and Spinelli (2009) expressed classic entrepreneurship as the raw start-up company with an innovative idea that develops into a high-growth company. The Information Communications Technology industries create opportunities that allow ideas to be exploited through high-growth firms, for example Microsoft, Google and Apple. According to the Economist Intelligence Unit (EIU), opportunities in the future exist for ICT industries, where demand is increasing for ICT products and services globally, with the global market valued at US$3.8 trillion in 2010 (EITO 2008). Therefore, entrepreneurship could enable results in creation, innovation and adaptation of value for owners and stakeholders in the Australian ICT industry.

Timmons & Spinelli (2009, p. 101) defined the entrepreneurial process as: ‘Entrepreneurship is a way of thinking, reasoning, and acting that is opportunity obsessed, holistic in approach, and leadership balanced for the purpose of value creation and capture’ who focused on high-growth ventures, had a proactive view of the entrepreneurial process starting with creation of opportunities. Therefore, entrepreneurs’ through an entrepreneurial theoretical perspective need the ability to see opportunities in a holistic way from opportunity recognition and exploitation to start-up of a new business and then grow the business through internationalization, innovation and adaptation to create wealth (McDougall & Oviatt 2005).
This thesis investigates entrepreneurial internationalization through an entrepreneurial theoretical perspective. As suggested by Douglas (2009), entrepreneurs see future opportunities, take risks, and exploit entrepreneurial opportunities differently from other business people.

1.3 Research Aim

The topic of this research is the entrepreneurial internationalization activities in the Australian Information and Communications Technology (ICT) Small to Medium Enterprises (SMEs) sector. The research is further focused on the international opportunity recognition and exploitation of internationalization activities. To aid this, an understanding of the industry and its environment is required. The research problem that follows expands on the need for this research.

Research Aim

To investigate the entrepreneurial internationalization activities of Australian ICT SMEs examined through an entrepreneurial theoretical lens.

Therefore, the research problem is:

How do Australian ICT SMEs recognize and exploit international opportunities and internationalize their business?

The review of extant literature covering these topics in Chapter 2 allows the development of a theoretical framework linking entrepreneurship and internationalization. This framework is used to guide the study. The literature review and theoretical framework lead to the development of a number of research questions.

1.3.1 Research Questions

- **RQ 1**: How do Australian ICT SMEs recognize and exploit international opportunities?

- **RQ 2**: How do international opportunities influence Australian ICT SMEs internationalization?
  - **RQ 2.1**: How do firm characteristics influence internationalization?
  - **RQ 2.2**: How do firm capabilities influence internationalization?
- RQ 2.3: How does the external environment influence or impede internationalization?

1.4 Contributions of this Research

This study aims to add to the field of international entrepreneurship research by investigating a critical aspect which has been neglected in previous studies: entrepreneurial internationalization through an entrepreneurial theoretical lens. It addresses the need identified by researchers for a theoretical framework to examine entrepreneurial internationalization to provide insights for entrepreneurs, managers and policy makers in the Australian ICT industry.

IE theory is based on complex phenomena and after four decades of research into SME internationalization no single theory explains internationalization (Evangelista 2005; Mort & Weerawardena 2006; Pla-Barber & Escriba-Esteve 2006; Coombs, Sadrieh & Annavarjula 2009). After two decades of international entrepreneurship research, researchers have recommended further qualitative studies to explain the entrepreneurial internationalization of SMEs (Weerawardena et al. 2007; Coombs, Sadrieh & Annavarjula 2009; Coviello, McDougall & Oviatt 2011; Jones, Coviello & Tang 2011).

The goal of this research is to extend the body of knowledge in the discipline of international entrepreneurship. This research contributes to theory in the following ways:

1. This study's contribution to theory extends Evangelista’s (2005) model of international new venture creation and Oviatt and McDougall’s (2005) model of accelerated internationalization, as well as extending extant theories of SME internationalization which have limited examination of entrepreneurship as the primary theme in opportunity recognition and exploitation and new venture creation (Coviello, McDougall & Oviatt 2011; Jones, Coviello & Tang 2011).

2. This study provides a reconceptualized model by examining entrepreneurial internationalization through an entrepreneurial theoretical lens rather than an international business lens, thus using entrepreneurship as the main theme (Gamboa & Brouthers 2008; Douglas 2009).

3. This study shows that entrepreneurial ventures during start-up or international opportunity exploitation are focused on wealth creation, which is a firm’s measure of business success by achieving their sales, profit and growth goals. These ventures are
not focused on the speed of internationalization and export intensity (the ‘born global’ concept).

4. This study addresses the need identified by other researchers for an examination of entrepreneurial internationalization through qualitative studies to examine how and why SMEs recognize and exploit opportunities, start up new businesses and internationalize their businesses (Weerawardena et al. 2007; Coombs, Sadrieh & Annavarjula 2009; Coviello, McDougall & Oviatt 2011; Jones, Coviello & Tang 2011).

1.4.1 Research Gap

The main gap in IE research is the limited examination of entrepreneurship as the primary theme in particular issues concerning opportunity recognition and exploitation (Coviello, McDougall & Oviatt 2011; Jones, Coviello & Tang 2011). This study fills this gap by adopting entrepreneurship theory to examine the internationalization of Australian ICT SMEs.

The first research on SME internationalization was conceptualized as an incremental static process (Johanson & Wiedersheim-Paul 1975), followed by new patterns and timing of SME internationalization (Johanson & Mattsson 1988; Bell 1995; Coviello & Munro 1997; Bell et al. 2003) without reference to entrepreneurship theory (Coviello, McDougall & Oviatt 2011; Jones, Coviello & Tang 2011). Thus IE has so far been explained through an international business theoretical lens (Gamboa & Brouthers 2008) and have not necessarily incorporated entrepreneurship theoretical frameworks as primary theme such as opportunity recognition and exploitation and new venture creation (Coviello, McDougall & Oviatt 2011).

In response to the gaps identified in IE research on entrepreneurial internationalization (Coviello, McDougall & Oviatt 2011; Jones, Coviello & Tang 2011). This study addresses the gap in literature and looks at the process of entrepreneurial internationalization activities explained in a holistic way from opportunity recognition and exploitation to start-up of a new business and then growing the business through internationalization.

1.5 Methodology

A phenomenological paradigm has been selected for this research due to the exploratory and theory-building nature of the research (Hussey & Hussey 1997; Ticehurst & Veal 1999; Perry 2001). The objective is to describe real-world practice, using the data collected, to refine the theoretical model developed during the literature search. The task for the remainder of the
research project is to use the model as the basis for questions designed to collect further data (Ticehurst & Veal 1999).

Case study was the prime methodology for this research, and was chosen as it is well suited to an understanding of ‘contemporary phenomena’ through investigations performed in a ‘real-life context’ (Audet & d'Amboise 2001; Yin 2003, p. 13); and ‘existing theory seems inadequate’ (Eisenhardt 1989, p. 589).

In-depth interviews were conducted with eight founders and senior managers involved in internationalization. Multiple sources of data were used for validity and reliability through triangulation (Yin 2003, 2009). Interviews were transcribed and then coded using open and axial coding procedures. The sample consisted of eight internationalized Australian ICT SMEs that produce hardware or software for international markets. The sample firm selection was conducted by contacting Austrade and industry experts to gain knowledge about internationalizing Australian ICT SMEs. The founders or senior managers of the firms involved in internationalization were interviewed.

Case study was the methodology chosen as most suitable to this research, using a research design that was reviewed and revised as the research progressed. Aspects of grounded theory were applied to the data analysis process.

1.6 Structure of Thesis

The research adopts the five-chapter model proposed by Perry (2002).

Chapter 1: Introduction

This chapter provides background and outlines the broad field of study. Its aim is to orient the reader by setting the scene for the rest of the thesis; it lays the foundations for the thesis. The chapter includes: a brief description of the research problem, issues and contributions; the gaps in current theory that provide justification for the research; and an explanation of the methodology. It also includes an outline of the thesis and the working definitions used throughout the thesis.

Chapter 2: Literature Review and Research Questions

Chapter 2 builds a theoretical foundation for the research through a review of the existing literature. This review identifies pertinent research questions by exploring the parent disciplines of international business and entrepreneurship. The investigation of these
disciplines places the research in context, establishes the boundaries for the research and identifies gaps in existing research. This chapter also discusses the Australian ICT sector, to further contextualize the research.

As this research is exploratory, Chapter 2 is used for theory building and the development of a theoretical framework. The theoretical framework is designed to address the gaps in current theory and to be a guide to question development for data collection.

**Chapter 3: Methodology**

This chapter outlines the methodology used in the research – the case study approach – and justifies the choice of this particular methodology. It gives details of the research procedures and instruments used and their limitations. It also discusses the unit of analysis, ethical considerations, and validity and reliability issues.

Chapter 3 describes the research methodology that collects data that will reliably confirm or contradict the theory developed in Chapter 2.

**Chapter 4: Data Analysis**

Chapter 4 presents a profile of the respondents and organizations used in the study. A cross-case analysis covers each of the research questions presented in Chapter 2, following the same sequence. Any patterns found in the data that relate to the research questions are discussed in relation to the extant literature (Perry 2002).

**Chapter 5: Conclusions and Implications**

This chapter presents a reconceptualized model based on the findings and then explores the implications for theory in the parent disciplines of entrepreneurship and internationalization, before going on to discuss the implications for policy and practice. It identifies the limitations of the research and finishes with a discussion of the implications for further research.
1.7 Definitions

Effective communication requires the communicator and the audience to have an overlap in their fields of experience, to share some common knowledge (Robbins et al. 2000; Zikmund 2000). Table 1.1 provides the working definitions that have been sourced or developed for this research (Robbins et al. 2000).

Table 1.1: Definitions

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynamic capabilities</td>
<td>‘— are the organizational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve and die’</td>
<td>(Eisenhardt &amp; Martin 2000, p. 1107).</td>
</tr>
<tr>
<td>Entrepreneurial activity</td>
<td>Intentionally planned behavior and not a reflex action.</td>
<td>(Krueger, Michael &amp; Carsrud 2000; Shook, Priem &amp; McGee 2003)</td>
</tr>
<tr>
<td>Entrepreneurial awareness</td>
<td>Awareness is based mainly on the ability of the individual to evaluate the chosen opportunity</td>
<td>(Aviram 2010)</td>
</tr>
<tr>
<td>Entrepreneurial lens</td>
<td>Entrepreneurs’ ability to see and understand ‘things entrepreneurial’ better than non-entrepreneurs. This ability relates to their previous experience in entrepreneurial situations and their behavior.</td>
<td>(Douglas 2009, p.6)</td>
</tr>
<tr>
<td>Entrepreneurship</td>
<td>‘the scholarly examination of how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited.’</td>
<td>(Shane &amp; Venkataraman 2000, p. 218)</td>
</tr>
<tr>
<td>Entrepreneurial process</td>
<td>‘Entrepreneurship is a way of thinking, reasoning, and acting that is opportunity obsessed, holistic in approach, and leadership balanced for the purpose of value creation and capture’</td>
<td>(Timmons &amp; Spinelli 2009, p. 101)</td>
</tr>
<tr>
<td>Firm capabilities</td>
<td>‘Firm capabilities include all assets, capabilities, organizational processes, information, knowledge, and so forth, controlled by a firm that enables it to develop and implement value-creating strategies.’</td>
<td>(Dess, Lumpkin &amp; Eisner 2007, p. 92)</td>
</tr>
<tr>
<td>Firm resources</td>
<td>Firm resources include physical, human, and organizational capital.</td>
<td>(Barney 1991)</td>
</tr>
<tr>
<td>International business</td>
<td>– is business whose activities are carried out across national borders. This definition includes not only international trade and foreign manufacturing but also the growing service industry in areas such as transport, tourism, advertising, construction, retailing, wholesaling and mass communications.</td>
<td>Ball 2008</td>
</tr>
<tr>
<td>Category</td>
<td>Definition</td>
<td>Source</td>
</tr>
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<td>----------------------------------</td>
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</tr>
<tr>
<td>International entrepreneurship</td>
<td>‘the discovery, enactment, evaluation, and exploitation of opportunities – across national borders – to create future goods and services.’</td>
<td>(Oviatt &amp; McDougall 2005, p. 540).</td>
</tr>
<tr>
<td>International marketing</td>
<td>— is the multinational process of planning and executing the conception, pricing, promotion and distribution of ideas, goods, and services to create exchanges that satisfy individual and organizational objectives.</td>
<td>(Onkvisit &amp; Shaw 2004)</td>
</tr>
<tr>
<td>International strategy</td>
<td>Firms begin with low-risk export involvement and as sales revenues increase firms commit more resources through a series of steps.</td>
<td>Guillen 2003</td>
</tr>
<tr>
<td>International new venture</td>
<td>An international new venture (born global firm) is defined in this study, as one that has achieved a high level of sales from foreign markets and has made considerable foreign commitments in terms of sales efforts and other investments within a conventionally accepted short period after formation.</td>
<td>(Evangelista 2005, p. 186)</td>
</tr>
<tr>
<td>Large business</td>
<td>Australian firms employing more than 200 employees.</td>
<td>(ABS 2007b)</td>
</tr>
<tr>
<td>Medium business</td>
<td>Australian firms employing between 20 and 199 employees.</td>
<td>(ABS 2007b)</td>
</tr>
<tr>
<td>Multinational corporation (MNC)</td>
<td>By definition an MNE has activities in more than two countries or it is one large industrial company with operations in multiple countries and a centralised chain of command. For the purposes of this thesis, the following expanded definition will be used: ‘if a firm has sales operations in multiple countries, or some other permutation of international business activities physically present in multiple countries, then it is a multinational.’</td>
<td>(Grosse 2004, p. 83)</td>
</tr>
<tr>
<td>Small business</td>
<td>Australian firms employing fewer than 20 employees.</td>
<td>(ABS 2007b)</td>
</tr>
<tr>
<td>Strategic entrepreneurship</td>
<td>‘taking entrepreneurial actions using a strategic perspective’. This definition is used interchangeably with ‘entrepreneurial strategy’.</td>
<td>(Hanson et al. 2008, p. 417)</td>
</tr>
</tbody>
</table>
1.8 Summary

In summary, this chapter introduced the research, its background, and an outline of the broad field of study, to orient the reader by setting the scene and laying the foundations for the thesis. The chapter included a brief description of the research problem, issues and contributions; the gaps in current theory which provide justification for the research; and an explanation of the methodology. It also included an outline of the thesis. The next chapter reviews the extant literature and builds a theoretical framework for this research.
Chapter 2: Literature Review

2.1 Introduction

The aim of Chapter 1 was to set the scene for the thesis as a whole. The purpose of this chapter is to build a theoretical framework for the research through a review of the extant literature. This review identifies relevant research questions by exploring the parent disciplines of entrepreneurship and internationalization. An examination of entrepreneurial internationalization activities practiced by Australian ICT SMEs set the scene for the research and develops the research aim. Following this, the gaps discovered in existing research in Australia are identified and a theoretical framework is presented, along with research questions.

This chapter is divided into the following sections. Section 2.2 reviews the extant literature in entrepreneurship. Section 2.3 reviews the extant literature on international business. Section 2.4 reviews theories of the firm. Section 2.5 reviews the literature on SME internationalization before moving onto the external environment. Section 2.6 builds a theoretical framework from the review of the literature, and the chapter is summarized in Section 2.7.

Traditionally, scholarship in entrepreneurship has strongly focused on the entrepreneurial activity of individuals and to a lesser extent on that of organizations (Oviatt & McDougall 2005). Internationalization has discussed the international activity of large firms, mostly multinationals, to the exclusion of the international entrepreneur (Etemad 2004a). Figure 2.1 summarizes the findings of McDougall and Oviatt (2000) in the domain of academic literature on organizations. They have noted that substantial literature exists in quadrants I, II and IV. Quadrant I has been the domain of entrepreneurship scholars and quadrant IV has been the focal point of international business scholars. Multiple functions have concentrated on quadrant II. There is a lack of literature in quadrant III, described as the intersection of international business and entrepreneurship and called ‘international entrepreneurship’ (McDougall & Oviatt 2000).

The field of international entrepreneurship evolved from McDougall’s (1989) study comparing domestic and international new ventures and providing an early definition of the term ‘international entrepreneurship’ (IE), which focused on new ventures that engaged in international business. However, studies that followed challenged extant theory in
international business by explaining the formation of international new ventures mainly in the context of research into multinational enterprises (McDougall, Shane & Oviatt 1994). Further studies considered ‘the intersection of international business and entrepreneurship’ (McDougall & Oviatt 2000) for scholarly enquiry in the field of IE.

**Figure 2.1: The domain of international entrepreneurship**

![Diagram](image)

Source: McDougall and Oviatt (2000)

Research in IE has mainly focused on new patterns and the timing of SME internationalization (Johanson & Mattsson 1988; Bell 1995; Bell et al. 2003), without reference to entrepreneurship theory as the primary theme (Coviello, McDougall & Oviatt 2011; Jones, Coviello & Tang 2011). Attempts to combine entrepreneurship theory have included entrepreneurial orientation (McDougall & Oviatt 2000; Knight & Cavusgil 2004) to determine the entrepreneurial behavior of firms. Currently the state of IE is defined as ‘the discovery, enactment, evaluation, and exploitation of opportunities – across national borders – to create future goods and services’ (Oviatt & McDougall 2005, p. 540). Oviatt and McDougall (2005) incorporated Shane and Venkataraman’s definition of entrepreneurship (2000, p. 218) in ‘the scholarly examination of how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited’. Thus IE has so far been explained through an international business theoretical lens (Gamboa & Brouthers 2008).

Several recent reviews have critiqued IE research as a field of inquiry. Gamboa and Brouthers (2008, p. 555) stated that IE research replicates international business studies ‘by substituting
smaller/newer firms for larger ones’. Keupp and Gassman (2009) argued that IE research lacks theoretical insights and precludes efforts to advance generalizable IE theory. Coombs, Sadrigh and Annarvarjula (2009, p. 31) expressed that ‘a theoretical paucity summarizes the present state of research in IE’. It is interesting that these reviews and critiques come from international business researchers and that entrepreneurship researchers have mainly focused on domestic entrepreneurship.

In response to these reviews, several researchers have acknowledged the gaps in IE research. Jones, Coviello and Tang (2011) identified three major areas of IE research: (1) entrepreneurial internationalization, (2) international comparisons of entrepreneurship and (3) international comparisons of entrepreneurial internationalization. The main research lack is in explanations of entrepreneurial internationalization where entrepreneurship is the primary theme, and the sub-themes are opportunity recognition and exploitation, new venture creation and linking opportunity recognition processes to venture type (Coviello, McDougall & Oviatt 2011; Jones, Coviello & Tang 2011).

The aim of this thesis is to investigate entrepreneurial internationalization in Australian ICT SMEs through an entrepreneurial perspective. Which Douglas (2009) referred to as entrepreneurs’ ability to see and understand ‘things entrepreneurial’ better than non-entrepreneurs do. This ability relates to their previous experience and behavior in entrepreneurial situations. Entrepreneurship is reviewed from economic and behavioral points of view in the next section.

2.2 Entrepreneurship

According to Schaper and Volery (2007), there are two basic schools of thought on entrepreneurship: (1) the economists who consider entrepreneurs as agents of change and (2) the behaviorists who concentrate on the intuitive characteristics of entrepreneurs. Recent research into entrepreneurship has extended the economic and behaviorist views to focus on opportunity recognition and exploitation (Shane & Venkataraman 2000) and new venture creation in domestic markets (Gaglio & Winter 2009).

Economic View

‘Entrepreneurs have been all but banished from the theory of the firm and the market’ (Schaper & Volery 2007, p. 36). Hence, the economic view of entrepreneurship is considered a microeconomic function where entrepreneurs pay wages and interest rates, and make decisions on cost-effective production techniques, but they do not reinvent or revolutionize
them. The role of the entrepreneur has been analyzed in terms of a division of labor that explains their function as risk bearer, arbitrageur, coordinator of scarce resources and entrepreneurial innovator.

**Risk Bearer**

Cantillon (1755) described an entrepreneur as the calculated risk-taker who pays a certain price for a product to resell it at an uncertain price, and decides which resources to use in obtaining the product. For example, manufacturers bear the risk of buying labor before the product of that labor is sold. Consequently, an entrepreneur is prepared to pay for an uncertain risk that cannot be transferred through insurance.

Knight (1921) first identified the difference between risk, which is insurable, and uncertainty, which insurers will not touch due to the difficulty of calibrating it. Therefore, uncertainty cannot be eliminated or insured against, but it is the source of profit. Entrepreneurs must rely on their own judgment when faced with uncertainty as they have no external information to refer to. Based on good judgment, entrepreneurs can earn a profit.

**Arbitrageur**

Austrian economists such as Hayek (1959) and Kirzner (1973) have viewed the entrepreneur as the key figure in the market economy. In turbulent environments, entrepreneurs move the economy towards equilibrium through speculation and arbitrage, meaning that the entrepreneur takes advantage of a discrepancy in prices in the marketplace. The motivation for price discovery is the potential temporary monopoly gain and the reward of profit for recognizing a market opportunity and providing the intermediary function.

**Coordinator of Scarce Resources**

Another economist, Say (1803), has described the entrepreneur as a coordinator and supervisor of production. Entrepreneurs may have the insight or knowledge to take advantage of an opportunity. However, they may lack the resources (e.g., finance, labor, technology) required to start a new venture. In this case, the role of the entrepreneur is to convince resource holders to invest in the new venture and to coordinate these scarce resources (Casson 2005). In order to achieve this, the entrepreneur must have judgment, perseverance and knowledge of the world (Schaper & Volery 2007).
Entrepreneurial Innovator

In contrast to the view of traditional economics, Schumpeter (1934) said that an entrepreneur is the innovator who implements change within markets through creating innovative combinations. Innovative combinations can take several forms: (1) the introduction of a new good or service; (2) the introduction of a new method of production; (3) the opening of a new market; (4) the acquisition of a new source of supply of materials or parts; and (5) the start-up of a new venture in any industry. Schumpeter equated entrepreneurship with the concept of innovation applied to a business context. As such, the entrepreneur moves the market away from equilibrium. Schumpeter's definition also emphasized the combination of resources. Thus, managers of established firms are not entrepreneurs according to Schumpeter. The Schumpeterian entrepreneur was not an imitator or emulator but rather an innovator (Galunic & Roden 1998). He was not required to invent; but he would have to possess the ability to take the necessary inventions, including even disruptive inventions, to the marketplace and commercialize them successfully.

Naturally, innovators thrive on creating value-added products and disrupting the equilibrium of lower-valued products. Disruptive innovators organize and re-organize the industry structure and the nature of work in their industry, forcing the industry to consider the market as the context for entrepreneurial endeavors as opposed to the economists’ traditional industry context, which could potentially be destroyed from within and by its own entrepreneurial entities (Galunic & Roden 1998). It could be argued that the entrepreneurs starting new ventures in the ICT industry exploiting disruptive technologies are the entrepreneurial innovators in the 21st century.

Behaviorist View

The second view of entrepreneurship is that of the behaviorists, who include psychologists and sociologists. Early studies in entrepreneurship mainly focused on the psychological characteristics and personality of the individual as determinants of entrepreneurial behavior. Among a long list of entrepreneurial traits, only three have received wide attention in the extant literature and have a high level of validity: the need for achievement, internal locus of control and a risk-taking propensity (Gartner 1985; Schaper & Volery 2007).

The need for achievement

The need for achievement is a person’s desire either for excellence or to succeed in competitive situations. It is a key personal attribute for successful entrepreneurs (McClelland
Successful entrepreneurs are highly motivated and are self-starters internally driven to compete against their own self-imposed standards.

**Internal locus of control**

Locus of control, according to McCombs (1991), refers to the extent to which people believe they can control the events that affect them. The theory is that individuals’ thoughts control their actions and when they realize this executive function of thinking, they can positively affect their beliefs, motivation and to a certain extent their performance. Effective entrepreneurs believe in themselves and have a perception that they can control the events in their lives and can therefore guide their own destiny.

**Risk-taking propensity**

In a global and turbulent environment of change, risk and ambiguity, entrepreneurs learn to manage risk. Drucker (1985) emphasized the importance of risk taking in evaluating opportunities and he characterized entrepreneurs as calculated risk-takers. Brockhaus (1980, p. 514) defined the propensity for risk taking as ‘the perceived probability of receiving the rewards associated with success of a proposed situation, which is required by an individual before he will subject himself to the consequences associated with failure, the alternative situation providing less reward as well as less severe consequences than the proposed situation’. Such a definition might best describe the situation that faces the potential entrepreneur when deciding to establish a new business venture. Entrepreneurs may thus view opportunities and the risk involved in starting up a new venture differently from non-entrepreneurs.

The behaviorist view eventually reached a dead end, as it could only partially answer the question: ‘What makes people setup new ventures?’ (Schaper & Volery 2007). In the 21st century, entrepreneurship research has advanced from economic and behaviorist views towards opportunity recognition and exploitation and new venture creation. According to Gaglio and Winter (2009), entrepreneurship has struggled since its inception with the academic version of a new venture’s liability of newness; the field was considered pre-paradigmatic (Ireland, Webb & Coombs 2005), lacking theory or conceptual frameworks and creating ambiguity for researchers who could not agree on what constituted the phenomenon of entrepreneurship (Zahra & Dess 2001; Phan 2004).
Shane and Venkataraman (2000, p.218) published an article with the aim of legitimizing the scholarly study of entrepreneurship rather than it being ‘only a research setting or teaching application’. They defined entrepreneurship as a discipline for ‘the scholarly examination of how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited… the field involves the study of the sources of opportunity, the processes of discovery and evaluation, and the exploitation of opportunities and the sets of individuals who discover, evaluate and exploit them’ (p. 218). The fundamental question regarding entrepreneurship is whether it is either opportunity recognition and exploitation or new venture creation.

Gaglio and Winter’s (2009) examination of 150 papers published since Shane and Venkataraman’s (2000) definition revealed three themes of entrepreneurial opportunities: (1) introducing new raw materials, goods, services or processes, (2) starting a business and (3) introducing new goods, services or processes by starting a business. Their review provided evidence through an entrepreneurial viewpoint that entrepreneurs have the ability to see and exploit opportunities and that entrepreneurship is not about ‘dumb luck’ (Demsetz 1983). It suggested that without the exploitation of new products, services or processes, starting a new business are not an entrepreneurial act (Holcombe 2003). Hence, one can suggest that entrepreneurship research in the ICT industry is based on the entrepreneurial innovator introducing new goods, services or processes by starting a business as described by Schumpeter (1934).

**Opportunity Recognition and Exploitation**

Kirzner (1979, p. 48) led the field of opportunity recognition with his definition of ‘alertness’ as ‘the ability to notice without search opportunities that have hitherto been overlooked’. The attempt to translate entrepreneurial alertness into a cognitive process has not been successful to date, as entrepreneurs and non-entrepreneurs differ in the perception and interpretation of change described by Schumpeter (1934).

Shane (2000) proposed that effortless discovery can be explained as the result of the interaction between a person’s idiosyncratic knowledge store and market events. Essentially, a person’s background allows (or inhibits) them to apprehend the value of new information (the market event) and thus they can apprehend an opportunity intuitively. Unfortunately, Shane’s study does not really address the question of search versus discovery; participants’ acquired knowledge (existing mental models) directs the interpretation of information.
According to Aviram (2010), alertness is based on a schema acquired by the individual through cognitive means. He proposes entrepreneurial awareness as a more precise process related to a specific opportunity potential which may develop into a new venture. Awareness is based mainly on the ability of the individual to evaluate a specific opportunity. Therefore, the creation of a new venture depends on the existence of these two traits: alertness and awareness. Without the first, the individual would not discover the opportunity, and without the second, the individual would not have the power to put the discovery to work.

Holcombe (2003) argued that all of the cognitive behaviors discussed so far are necessary but not sufficient. They lay the groundwork but do not constitute an entrepreneurial act as there is no exploitation, whether one adopts an explanation of creativity or alertness or problem-solving or recognition or any other explanation. Demsetz (1983) critiqued Kirzner’s alertness with a characterization conveying an image of pleasant strolls in a sunny meadow where one meets the opportunity leprechaun, which he called ‘dumb luck’. This conceptualization contradicts the evidence that people deliberately look for business opportunities because they are aware of their ability to evaluate and exploit opportunities (Gaglio & Winter 2009).

In order to see through the entrepreneurial theoretical perspective, Gartner’s (1985) new venture creation framework described a complex phenomenon, also utilized by Evangelista (2005), to explain international new venture creation (see section 2.3.7). Thus the framework is suggested to be appropriate for explaining theory in entrepreneurial internationalization in Australian ICT SMEs through an entrepreneurial framework.

**New Venture Creation**

Gartner (1985) developed a framework for new venture creation (Figure 2.2) that included four dimensions: (1) individuals, (2) organization, (3) process and (4) environment. This is a complex, multi-dimensional framework used for the generalization of new venture creation. It was developed to explain the new venture creation phenomenon of domestic ventures. The framework covers the exploitation of an innovation which is reactive in identifying opportunities and is not a strategic framework for seeking opportunities long term. The framework does not address international new venture creation or the exploitation of international opportunities.
Following on from Gartner’s (1985) new venture creation framework, Timmons et al. (1987) stated that creation and/or recognition of opportunities lie at the heart of the entrepreneurial process, followed by the will and initiative to seize opportunities, taking calculated risks for potential reward (Timmons & Spinelli 2009).

Timmons and Spinelli (2009) expressed classic entrepreneurship as the raw start-up company with an innovative idea that develops into a high-growth company. They defined the entrepreneurial process as: ‘Entrepreneurship is a way of thinking, reasoning, and acting that is opportunity obsessed, holistic in approach, and leadership balanced for the purpose of value creation and capture’ (Timmons & Spinelli 2009, p. 101). Therefore, entrepreneurship results in creation, innovation and adaptation of value for owners and stakeholders. Timmons and Spinelli (2009), who focused on high-growth ventures, had a proactive view of the entrepreneurial process starting with creation of opportunities in contrast to Shane and Venkataraman (2000), who suggested a reactive process of discovery, evaluation and exploitation. Therefore, entrepreneurs’ need the ability to see opportunities in a holistic way from opportunity recognition and exploitation to start-up of a new business and then grow the business through innovation and adaptation to create wealth.
Entrepreneurial Lens

Gamboa and Broughers (2008) identified that international entrepreneurship has been explained through an international business theoretical lens. Jones, Coviello and Tang (2011) added that explanations of entrepreneurial internationalization are lacking from an entrepreneurial theoretical framework where entrepreneurship is the primary theme, and the sub-themes are opportunity recognition and exploitation, new venture creation and linking opportunity recognition processes to venture type. International business theories have viewed entrepreneurship from the MNE perspective and regard opportunity exploitation after the start-up stage of a new business via a static process of internationalization. Hence, according to Douglas (2009) entrepreneurs’ have the ability to see through a clear entrepreneurial lens and understand ‘things entrepreneurial’ better than non-entrepreneurs? This ability relates to their previous experience in entrepreneurial situations and their behavior.

Abilities specific to entrepreneurship for some people may have learned entrepreneurial abilities and behaviors at school, university and/or from work experience. In effect, entrepreneurs’ have acquired knowledge that allows them to see entrepreneurial opportunities clearly. For example people with more technical and industry knowledge in ICT technologies such as social media may regard a specific opportunity in social media as low risk compared to someone without the specific technical knowledge in social media may perceive the same opportunity as high risk. Shane and Venkataraman (2000) argue that entrepreneurs who possess proprietary knowledge about new venture opportunities appear to be willing to accept greater risk.

Due to greater knowledge entrepreneurs’ may also see themselves more competent than non-entrepreneurs and have higher self-efficacy, which refers to a person’s confidence that he/she can accomplish a specific task or related set of tasks (Krueger and Dickson 1994). Thus, possession of superior knowledge about an entrepreneurial opportunity in terms of market needs and potential of the innovation to create wealth gives the entrepreneur to exploit the opportunity with low risk.

The world of entrepreneurship is not neat, tidy, linear, consistent and predictable (Stevenson 1998; Evangelista 2005). To thrive in a disruptive industry such as ICT, an entrepreneur needs to be adept at coping with ambiguity, chaos and uncertainty, and at building management skills that create predictability. Many entrepreneurs think too small and one of the biggest mistakes they make is thinking short term.
2.2.2 Strategic Entrepreneurship

Firm survival and success is a function of a firm’s ability to continuously find new opportunities and quickly produce innovations to pursue them (Shepherd & DeTienne 2005). Hanson et al. (2008, p. 417) state: ‘Strategic entrepreneurship is taking entrepreneurial actions using a strategic perspective’. When engaging in strategic entrepreneurship, the firm focuses on finding opportunities in its external environment that it can exploit through innovations. Identifying opportunities to exploit through innovations is the entrepreneurship part of strategic entrepreneurship, while determining the best way to manage the firm’s innovation efforts is the strategic part. Thus, strategic entrepreneurship finds firms integrating their actions to find opportunities and to successfully innovate as a primary means of pursuing the opportunities. This results in creating wealth for the firm by increasing sales and profit (Ireland et al. 2001).

In the global competitive landscape, the long-term success of new ventures and established firms is a function of their ability to meld entrepreneurship with strategic management (Ireland, Hitt & Sirmon 2003). Newer entrepreneurial firms are often more effective than larger established firms when it comes to identifying entrepreneurial opportunities (Ireland, Hitt & Sirmon 2003). As a consequence, it seems that new entrepreneurial ventures produce more radical innovations than larger established firms. The strategic flexibility and willingness to take risks of new entrepreneurial ventures may account for their ability to spot opportunities and then develop radical innovations to pursue them. Innovation and entrepreneurship are vital for young and old firms and for large and small firms, for service companies as well as manufacturing firms, and for high-technology ventures (Smith, Collins & Clark 2005).

Larger firms often have more resources and capabilities for exploiting identified opportunities (Ireland, Hitt & Sirmon 2003). New entrepreneurial firms generally excel in the opportunity-seeking part of strategic entrepreneurship while more established firms excel in the advantage-seeking part. However, to compete effectively, firms must not only identify and exploit opportunities but must do so while achieving and sustaining a competitive advantage (Hitt et al. 2002). Thus, newer entrepreneurial firms must learn how to gain a competitive advantage and older established firms must relearn how to identify entrepreneurial opportunities. In general, new entrepreneurial ventures need to improve their advantage-seeking behavior while larger firms need to improve their opportunity-seeking skills.
In some large organizations, action is being taken to deal with these matters by giving entrepreneurial responsibility to certain managers. Their essential responsibility is to find entrepreneurial opportunities for their firms. If innovations are to be developed to pursue one or more identified opportunities, this person also leads the analysis to determine if the innovations should be internally developed, pursued through a cooperative venture or acquired. The objective is to help firms successfully develop both incremental and radical innovations.

2.2.3 Innovation Trends

Most innovations fail. And companies that do not innovate die. (Chesbrough 2006, p. xvii)

Global and turbulent ICT environments have led to a new era of innovation appropriate to the ICT industry that is open and collaborative. Thomas Kuhn (1962) coined the term *paradigm shift* for a change in the fundamental model of events. Globalization and the internet have increased competition. Firms have had to adapt to dynamic external environments through cooperative strategies, and changes have also forced firms to be open to external innovation. In the next section, emerging theories of innovation such as disruptive innovation and open innovation are discussed.

The advantages of cooperation are increasing in the open innovation era. As the focus shifted from purely internal research and development activities, the academic community started emphasizing that firms should be open to outside innovation (Rigby & Zook 2002; Christensen, Olsen & Kjaer 2005). ‘Not all the smart people work for us. We need to work with smart people inside and outside our company’ (Chesbrough 2003, p. 38).

Once the notion of inter-organizational innovation collaboration has entered an industry, everyone who does not participate will have serious competitive disadvantages (Enkel, Gassmann & Chesbrough 2008). Even worse, Koschatzky (2001, p. 6) found that ‘firms which do not cooperate and which do not exchange knowledge reduce their knowledge base on a long-term basis and lose the ability to enter into exchange relations with other firms and organizations’. Therefore, cooperation with external firms is core for innovation and to reduce time to market.

A closed innovation approach does not serve the increasing demands of shorter innovation cycles and reduced time to market. However, similar to an excess of cooperative strategies, too much openness can negatively impact on companies’ long-term innovation success, because it can lead to a loss of both control and core competencies (Enkel, Gassmann &
Chesbrough 2008). The future lies in an appropriate balance of an organization utilizing every available tool to create successful products and services faster than its competitors and at the same time fostering the building of core competencies and protecting its intellectual property.

Enkel, Gassman and Chesbrough (2009) discussed the new developments in open innovation utilizing a firm’s process perspective in three core processes:

1. The outside-in process enriches the company’s own knowledge base through the integration of suppliers, customers and external knowledge sourcing, as well as the use of innovation intermediaries, such as Innocentive, NineSigma, or yet2.com (Lakhani 2008; Piller 2009).

2. The inside-out process refers to earning profits by bringing ideas to market, selling IP and multiplying technology by transferring ideas to the outside environment. Companies that establish the inside-out process as their key process focus on externalizing their knowledge and innovation in order to bring ideas to market faster than they could through internal development. The decision to shift the locus of exploitation outside the company’s boundaries means generating profits by licensing IP and/or multiplying technology, thus transferring ideas to other companies. The firm no longer restricts itself to the markets it serves directly. Instead, it participates in other segments using licensing fees, joint ventures and spinoffs. These different streams of income create more overall revenue from the innovation (Gassman & Enkel 2005; Lictenthaler & Ernst 2007).

3. The coupled process refers to co-creation with complementary partners through alliances, cooperation and joint ventures, during which give and take are crucial for success. Companies that establish the coupled process as their key process combine the outside-in process with the inside-out process and, in doing so, jointly develop and commercialize innovation.

Most open innovation research has been conducted on large firms. There is limited research on entrepreneurial ventures and SMEs. Researchers in open innovation have focused on the outside-in process, according to Lictenthaler and Ernst (2007), and there is a lack of a clear understanding and theory of the inside-out or outbound activities. As markets shift towards the new paradigm of disruption and open innovation, studies into entrepreneurial firms which adopt emerging innovation methods are clearly required.
Disruptive Innovation

According to Christensen (1997), disruptive innovations do not attempt to bring better products to established customers in existing markets. Instead, they introduce products and services which are not as good as existing products, but which are simpler, more convenient and less expensive than existing items. In contrast, established firms commit resources to their core business. They listen to their best customers and, in the process, industry leaders become blindsided by disruptive innovations such as new products, services, or business models which initially target small, seemingly unprofitable customer segments, but which eventually grow to take over the marketplace. This is the innovator’s dilemma and no company or industry is immune. Whether they realize it or not, executives and managers regularly make decisions based on a set of theories drawn from their past experiences. The problem is that the theories that work well in running an established business do not apply when launching a new growth venture. This is exhibited in the Disruptive Innovation Model (Figure 2.3), which has three critical elements of disruption.

Figure 2.3: The disruptive innovation model

**Disruptive Innovations:**
A driver of failure and the source of new growth opportunities

The pace of technological progress usually outstrips the ability of customers in any given tier of the market to use the innovation, in part because companies keep striving to make better products that they can sell for higher profit margins to their most demanding, high-end customers. The rate of improvement that customers can fully use or absorb is represented by
the dotted line in the figure. The rate of improvement of products is shown by the two solid lines.

In contrast to a disruptive innovation, a sustaining innovation targets demanding, high-end customers by providing better performance than previously available, whether that performance is an incremental improvement or a breakthrough leapfrog over competitors’ products.

**Value Networks**

Disruptions create and exist in value networks, within which companies respond profitably to the needs of customers through processes and also channel partners. Two kinds of disruptions can create new value networks:

**New-market disruptions:** Based on their affordability and simplicity, these disruptions create a need in customers. For example, Canon’s desktop photocopier made photocopying at the office easier and people made more photocopies. As improvements are made in new-market disruptions, the companies that foster them are able to pull customers out of old mainstream value networks and into new ones.

**Low-end disruptions:** Disruptions that start at the beginning of the low-end original, mainstream value network do not create new markets, but simply feature low-cost models that attract an established firm’s least profitable customers.

Disruptive innovations do not attempt to bring better products to established customers in existing markets. Instead, they introduce products and services which are not as good as existing products, but which are simpler, more convenient and less expensive than existing products. Disruption often paralyses industry-leading companies, which are more accustomed to introducing sustaining innovations. In other words, established companies are motivated to focus on developing innovations to meet the needs of their profitable high-end customers. This leaves the door open for a new entrant to target the low-end customers. However, the new entrant will make improvements and move up-market, now targeting the high-end customers. Innovators need to find a customer need, a niche, to develop the marketing and to create a new value network model through internal and external innovation.
Open Innovation

The theory behind open innovation stated by Chesbrough (2006, p. xx) is a paradigm shift witnessed by him in the changing landscape of ‘how companies commercialize industrial knowledge’. In the process of this change, firms are moving from closed innovation to open innovation. In the closed innovation paradigm, the firm view is that successful innovation requires control and that firm’s should generate their own ideas and take them to market. In the open innovation paradigm the assumption is that ‘firms can and should use external paths to market, as the firms look to advance their technology’ (2006, p. xxiv). A transition towards open innovation is occurring in many industries such as computing hardware, telecommunications, pharmaceuticals, biotechnology, military weapons and communications systems.

Closed Innovation

In closed innovation, firms generate, develop and commercialize their own ideas (Figure 2.4). This philosophy of self-reliance dominated the research and development operations of MNEs like IBM, DuPont, Xerox and AT&T. MNEs invested in research and development on the basis of gaining market monopolies to achieve economies of scale through a single business model (Chesbrough 2006). Hence, MNE processes invested in research and development for products that would return high margins and profitability with quick returns and monopolization –what Christensen, Kaufmann and Shih (2008) refer to as ‘innovation killers’. Closed innovation philosophies have not only shifted towards open innovation but seem to have created opportunities for disruptive innovation.

In the past, internal research and development was a valuable strategic asset and a barrier to entry by competitors in many markets. Ethernet and the graphical user interface (GUI) are two innovations developed by Xerox. However, these inventions were not viewed as promising business for Xerox, which was focused on high-speed copiers and printers. The technologies were false negatives and they weakened inside Xerox, only to be commercialized by other companies that in the process reaped tremendous benefits. David Metcalfe, a former employee of Xerox, developed Ethernet; a local area computer networking system used to connect PCs, and founded 3Com for its exploitation. Apple Computers exploited the GUI in its Macintosh operating system while Microsoft did the same in its Windows operating system.

Cisco implemented different strategies in innovation leadership. It acquired its technology needs externally by investing in promising start-ups or partnering. Using these strategies,
Cisco kept up with the research and development output of the world’s finest industrial research and development organizations by conducting little research of its own and focusing on improving its business model for faster market entry.

The main factors that eroded the closed innovation model were: firstly, the mobility of knowledge workers who took their ideas and expertise to competitors or created new ventures; and secondly, the growing availability of venture capital which helped to finance new ventures to commercialize ideas that spilled out from the monopolistic research and development laboratories.

**Figure 2.4: The closed innovation model**

![Diagram of the closed innovation model]

Source: Chesbrough (2006, p. 31)

The cycle that sustained closed innovation was broken by the factors mentioned above. If the firm that funded a discovery did not commercialize the product or service, the developers involved could start a new venture financed by venture capital. The successful start-up would generally not invest in its own research and development but instead, like Cisco, it would look outside for another technology to commercialize. Thus, the virtuous cycle of innovation was shattered; the firm that originally funded a discovery did not profit from the investment, and the firm that did reap the benefits did not invest its profits to finance the next generation of discoveries. This was the end of the era of theories of monopolistic firm industrial research (Rosenbloom & Spencer 2002). Now a more open and collaborative model is needed for innovation.
The Open Innovation Model

Firms profit more from the diffusion of innovations by collaboration and multiple business models rather than by keeping knowledge archived. Figure 2.5 shows that in this new model of open innovation, firms commercialize external ideas as well as internal ideas by deploying outside as well as in-house pathways to the market. The boundary between the firm and its environment is porous (represented by a dashed line), enabling innovations to move easily between the two.

Open innovation is based on a landscape of abundant knowledge which must be used readily if it is to provide value for the company that created it. However, a company should not restrict the knowledge that it uncovers in its research to its internal market pathways, nor should those internal pathways necessarily be constrained to bringing only the company’s internal knowledge to market. Firms should not lock up their intellectual property but instead should find ways to profit from other firms’ use of that technology through licensing agreements, joint ventures and similar arrangements.

Figure 2.5: The open innovation model

Source: Chesbrough (2006, p. 44)

One major difference between closed and open innovation lies in how companies screen their ideas. In any research and development process, researchers and their managers must separate
the bad proposals from the good ones so that they can discard the former while pursuing and commercializing the latter. A firm with a closed innovation approach is prone to miss a number of those opportunities because many of them will fall outside the organization’s current business or will need to be combined with external technologies to unlock their potential. This can be especially painful for firms that have made substantial long-term investments in research, only to discover later that some of the projects they abandoned had tremendous commercial value.

Today, in many industries, an internally oriented, centralized approach to research and development has become obsolete (Chesbrough 2006). These changes offer novel ways to create value – along with new opportunities to claim portions of that value. Innovators must integrate their ideas, expertise and skills with those of others outside the organization to deliver the result to the marketplace, using the most effective means possible. In short, firms that can harness outside ideas to advance their own business while leveraging their internal ideas outside their current operations will be likely to thrive in this new era of open innovation.

2.2.4 Global Opportunities for Australian ICT Entrepreneurs

According to the Economist Intelligence Unit (EIU), opportunities in the future exist for ICT industries, with an expectation that the forecast of 5.6% growth in global ICT spending will continue in 2011–12. Worldwide economic recovery has been a factor in spurring demand for ICT products and services globally, with the global market valued at US$3.8 trillion in 2010 (EIOT 2008). The chief markets were:

1. The USA, the largest ICT spender with a world market share of 41.9%
2. Europe (including Eastern Europe) at 31.6%
3. Japan at 12.2%.

The key export markets for Australian ICT exporters working with Austrade are the US, the UK and Singapore, although Taiwan, Indonesia, the UAE and Malaysia are also yielding good results from focused Austrade programs in these markets (Harrison 2008).

The global ICT market presents an enormous opportunity for Australian ICT SME that would contribute to job creation and to decreasing the ICT trade deficit. It is essential for Australia to invest in research designed to generate solutions for a knowledge-based economy that
offers management training and addresses the skills deficiency in strategic management, entrepreneurship, internationalization and internet technologies (Temperley, Galloway & Liston 2004). However, entrepreneurs and managers should acknowledge the hostile home market in Australian ICT and develop strategies to seek global opportunities to increase firm growth and sales.

### 2.2.5 International Entrepreneurship

Table 2.1 indicates the evolution of international entrepreneurship definitions for international new ventures. There is little research into international new ventures with entrepreneurship as the primary theme (Coviello, McDougall & Oviatt 2011; Jones, Coviello & Tang 2011).

#### Table 2.1: Definitions of international entrepreneurship

<table>
<thead>
<tr>
<th>Definition</th>
<th>Source</th>
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<tr>
<td>International entrepreneurship is defined in this study as ‘the development of international new ventures or start-ups that, from their inception, engage in international business, thus viewing their operating domain as international from the initial stages of the firm’s operation’.</td>
<td>McDougall (1989, p. 387)</td>
</tr>
<tr>
<td>‘a business organization that, from inception, seeks to derive significant competitive advantage from the use of resources and sale of outputs in multiple countries.’</td>
<td>Oviatt and McDougall (1994, p. 49)</td>
</tr>
<tr>
<td>Firm-level activity that crosses national borders and focuses on the relationship between businesses and the international environments in which they operate.</td>
<td>Wrights and Ricks (1994, p. 699)</td>
</tr>
<tr>
<td>‘International ventures derive sales revenue from foreign countries comprised of 5% or more of their total sales.’</td>
<td>McDougall and Oviatt (1996, p. 24)</td>
</tr>
<tr>
<td>‘A combination of innovative, proactive, and risk-seeking behavior that crosses or is compared across national borders and is intended to create value in organizations.’</td>
<td>McDougall and Oviatt (2000, p. 903)</td>
</tr>
<tr>
<td>‘International entrepreneurship is the discovery, enactment, evaluation, and exploitation of opportunities – across national borders – to create future goods and services.’</td>
<td>Oviatt and McDougall (2005, p. 540)</td>
</tr>
<tr>
<td>An international new venture (born global firm) is defined in this study, as ‘one that has achieved a high level of sales from foreign markets and has made considerable foreign commitments in terms of sales efforts and other investments within a conventionally accepted short period after formation.’</td>
<td>Evangelista 2005, p. 186</td>
</tr>
</tbody>
</table>

Source: Developed for this thesis
In a recent review of 323 papers in IE research published between 1989 and 2009, Jones, Coviello and Tang (2011) identified three major areas of IE research – entrepreneurial internationalization, international comparisons of entrepreneurship and international comparisons of entrepreneurial internationalization – and multiple thematic areas within each. The themes identified in entrepreneurial internationalization are: (1) venture type, (2) internationalization, (3) networks and (4) organization. These themes as discussed by McDougall & Oviatt (2000) were covered in the previous sections and presented in Figure 2.1. International entrepreneurship has been explained through an international business lens, but little research has been conducted in entrepreneurship, which is the primary area of the discipline (Coviello, McDougall & Oviatt 2011). Coviello, McDougall and Oviatt (2011) recommended that more attention be paid to exploring the amount and type of entrepreneurial experience that founders have and how those experiences relate to entrepreneurial internationalization.

**International New Ventures**

Casson (1985) highlighted the need to include the role of the entrepreneur in explaining the dynamics of the MNE. In response to this, Oviatt and McDougall (1994) developed a model (Figure 2.6) for defining sustainable international new ventures. The most important contribution of this model was to integrate: (1) the traditional MNE concepts of internalization and location advantage, (2) entrepreneurship research on alternative governance structures and (3) developments in strategic management on the requirements for sustainable competitive advantage. The theoretical framework describes international new ventures as controlling assets, mainly unique knowledge creating value in more than one country. As internal competitive forces prevent entry to domestic markets, they focus on controlling rather than owning assets, a result of the scarce resources common to new ventures (Oviatt & McDougall 1994).

It is interesting to note that the model of a firm’s perspective on international new ventures builds on MNE theories such as internalization (Williamson 1985), foreign location advantage (Dunning 1988) and unique resources (Barney 1991). Oviatt and McDougall (Oviatt & McDougall 1994) stated that this model of new international ventures is the most radical as it derives significant competitive advantage from extensive coordination among multiple organizational activities across diverse locations.
These firms respond to globalizing markets and proactively act on opportunities to add value by selling outputs from acquired resources. Their international new ventures still operate at the firm level but do not rely on an entrepreneur, opportunity recognition and exploitation, and new venture creation. These international new ventures rely on unique resources for sustainability (Barney 1991) and not on product innovation. In contrast, ICT firms are innovative and diffuse their innovations similarly to the innovation export model (Lim, Sharkey & Kim 1991).

**An Integrative Model of Small Firm Internationalization**

Bell et al. (2003) conducted a study on internationalizing SMEs in the UK. As depicted in Figure 2.7, the study found three pathways that SMEs adopt for internationalization: (1) traditional, (2) born-again global and (3) born global.

Traditional firms and born-global firms (INV) were discussed in section 2.4. The international marketing perspective illustrates the evolution of international trade from the macroeconomic level to the global marketing level (Joshi 2005), where TNCs regard global markets as the same as domestic markets (UNCTAD 2007). TNCs use the RBV (Barney 1991; Grant 1991) to utilize firm resources and capabilities to gain a competitive advantage (Porter 1985). That qualitative case study was conducted on a variety of industries such as electrical and mechanical engineering, food and beverage production, information and communications technology, printing and textiles in the UK, Australia and New Zealand.

Porter’s (1985) study found significant insights that born-global firms were knowledge-based and knowledge-intensive firms. Coviello and Munro (1997) defined these firms as ‘having a high added value of scientific knowledge embedded in both product and process. Often, this knowledge is also required in sales and marketing functions’. Knowledge-based firms exist
due to emerging technologies such as ICT or biotechnology, and knowledge-intensive firms accelerate internationalization whether they are technological innovators or adopters. Covello and Munro’s (1997) study lacks an entrepreneurial view of born-global internationalization. While the model explains pathways of internationalization of born-global firms, it does not define how international opportunities are recognized and exploited.

**Figure 2.7: An integrative model of small firm internationalization**

Born-Global Firms

Rennie (1993) was the first to establish the term ‘born global’. In his pioneering investigation, Rennie (1993) found numerous small and medium sized firms in Australia that internationalized their operations at or near founding. Despite their small size these born global firms were able to compete successfully in the international marketplace. In their study Knight and Cavusgil (2004) define ‘born-globals’ as business organizations which, from or near their founding, seek superior international business performance from the application of knowledge-based resources for the sale of outputs in multiple countries. Figure 2.8 represents the born-global firm based on a study conducted on 900 US manufacturing SME exporting firms, using the export venture as the unit of analysis (Knight & Cavusgil 2004).
Knight and Cavusgil’s (2004) study revealed that global success is no longer dependent on international experience and firm resources for large-scale internationalization. This study has shown that born-global firms with the characteristics and capabilities shown in the model can achieve successful exporting compared to MNEs that rely on the international marketing and the RBV discussed earlier.

According to Knight and Cavusgil (2004), entrepreneurs with a global vision utilize capabilities at the organizational culture and business strategy levels of the firm to internationalize from their inception to succeed in international markets. Hence, due to their small size, born-global firms acquire experience rapidly compared to MNEs and are able to respond faster to opportunities. This study made an important contribution concerning how born-global firms can succeed in international markets.

**Figure 2.8: The born-global firm**

![Diagram of the born-global firm model](source: Knight and Cavusgil (2004, p. 129))
**Entrepreneurial Internationalization**

Oviatt and McDougall (2005) later adopted a different approach to international entrepreneurship from their previous theory (McDougall & Oviatt 2000) that focused on forces which: (1) focus on opportunities, (2) permit without the requirement of forming a new organization, (3) allow corporate entrepreneurship, (4) supersede the number of entrepreneurial orientation dimensions required and (5) emphasize entrepreneurial activity across national borders.

Figure 2.9 depicts the four forces that determine the speed of internationalization: (1) enabling, (2) motivating, (3) mediating and (4) moderating.

**Figure 2.9: Modelling internationalization speed**

Source: Oviatt and McDougall (2005)

**Enabling Force:** The cost of foreign trade and investment is reduced by quicker and efficient transport. Information and communications technology such as wireless technology and the internet enable communication to be feasible in every country, and make this technology the foundation for enabling accelerated internationalization.
**Motivating Force:** While ICT makes accelerated internationalization feasible, the existence of competitors or potential competition motivates entrepreneurs to respond faster to opportunities.

**Mediating Force:** The entrepreneurial actor is the key to discovering and acting on international opportunities. The entrepreneur’s perceptions clarify decision making to exploit opportunities. This increases the speed of internationalization.

**Moderating Force:** There are two types of moderating forces – (1) the knowledge intensity of the opportunity and (2) the international network of the entrepreneur – which influence the speed of internationalization.

While this model (Figure 2.9) discusses the forces for accelerated internationalization, it has not been established whether accelerated internationalization increases export intensity or whether it is more effective than traditional internationalization models (Oviatt & McDougall 2005).

**International New Venture Creation**

An international new venture (born global firm) is defined in this study, ‘as one that has achieved a high level of sales from foreign markets and has made considerable foreign commitments in terms of sales efforts and other investments within a conventionally accepted short period after formation’ (Evangelista 2005, p. 186). Evangelista (2005) used a qualitative approach to capture a holistic view of international new venture creation based on case studies conducted in six Australian software firms. The model (Figure 2.10) is based on Gartner’s (1985) new venture creation model, which in turn was based on a generalization of domestically based new ventures. The four elements – (1) founders, (2) organization, (3) processes, and (4) environment – have been adapted to reflect international new venture creation.

Of the six companies in Evangelista’s research, five were founded by two or more entrepreneurs. Education, previous industry experience, founding experience and international experience were among the characteristics that stood out as important to the founding of the firms in this study. Although this model concentrates on the international new venture, theories of opportunity recognition and exploitation were not used in the study.
Network Capability Model in Born-Global Firms

Mort and Weerawardena’s (2006) findings highlight the critical role played by international entrepreneurial founder-managers in networking capability building in the rapid internationalization of born-global firms. These firms display innovativeness, proactiveness and risk taking in their strategic decisions, reflecting the behavioral characteristics of IE (Knight 2000; McDougall and Oviatt 2000).

Interestingly, Mort and Weerawardena’s (2006) findings suggest that dynamic networking capabilities enable born-globals to minimize the risks associated with global market entry decisions. A networking activity must take the form of a competitive capability complemented by entrepreneurial opportunity-seeking behavior. The firms studied were drawn from both hi-tech and low-tech industries. Networking capability was found not only to be central to the growth of firms in the hi-tech sector but also to play a similarly important role for firms in the low-tech sector. Specifically, the findings suggest that the evolution of networking capability is path dependent and conforms to the capability view of competitive strategy.
Dynamic Born-Global Firms

Over the past decade academics have attempted to explain how born-globals internationalize and to identify the factors driving their accelerated internationalization. In a review of born-global literature spanning more than a decade, Rialp, Rialp and Knight (2005) found an absence of a well-developed theoretical framework that could be effectively used to explain born-global firm internationalization. In a more recent attempt to conceptualize the born-global firm internationalization process, Weerawardena et al. (2007) proposed a model which is shown in Figure 2.11. This model includes the key dynamic capabilities facilitating the born-global’s accelerated internationalization.

Figure 2.11: Dynamic born-global firm

![Dynamic born-global firm diagram](source: Weerawardena et al. (2007))

Weerawardena et al. (2007) argued that the knowledge developed prior to the legal birth of a firm is what facilitates rapid and early internationalization. They identified the importance of three types of learning capabilities: market focused learning, internally focused learning and network learning. This knowledge has been acquired by the entrepreneurial founder(s) of a firm during their previous employment. The conceptual model of born-global firm internationalization suggests that the owner/manager profile is a key driver of the born-global internationalization process. Entrepreneurial owners or managers pursuing
internationalization build and nurture capabilities in market-focused learning, internally focused learning and networking, which enable them to develop cutting-edge knowledge-intensive products. These firms also invest resources in developing superior marketing capabilities which enable them to take their innovative products to niche markets that fit with their products and capabilities.

**Owner/manager profile**

The born-globals are founded by highly entrepreneurial owners, managers or management teams. In general they have developed some form of specialized knowledge; this may be in technology such as electrical engineering or artificial intelligence, or in marketing and venture creation. The owner/manager profile is characterized by an international entrepreneurial orientation, a geocentric or global mindset, significant previous international experience and a learning orientation.

The born-global internationalization process is argued to be driven by entrepreneurial owners or managers. McDougall and Oviatt (2000) defined international entrepreneurship as ‘a combination of innovative, proactive and risk-seeking behavior that crosses national borders and is intended to create value in organizations’.

Internationalization demands an active, committed and entrepreneurial management. The entrepreneurial orientation emphasizes risk-taking, innovation and proactiveness in international expansion. The proactive firm pursues opportunities boldly and aggressively. It has a preference for high-risk projects such as internationalization and attempts to be first in developing new markets (Covin & Slevin 1991). Similarly, it is highly proactive in its search for profitable international market opportunities, in contrast to the reactive exporter who sells overseas to dispose of surplus capacity or simply in response to unsolicited orders.

The owners or managers of born globals view the world as their market. They possess a geocentric mindset (Balabanis & Katsikea 2003) or a global mindset (Knight & Cavusgil 2004) that enables them to seek and exploit international market opportunities. A geocentric mindset can be defined as ‘the propensity of managers to engage in proactive visionary behaviors in order to achieve strategic objectives in international markets’ (Harveston, Kedia & Davis 2000).

The owner’s or manager’s previous experience is cited as a key factor that distinguishes born-globals from other exporting firms (Oviatt & McDougall 1997; Harveston, Kedia & Davis
(1997) suggested, ‘international experience is a key necessary condition for their international expansion, but it also creates the motivation and ambition to become born global’.

Another key feature in the born-global owner/manager profile is the owner/manager’s learning orientation. That owners/managers are active learners provides some of the impetus for the development of specific learning capabilities within their firms that moves them rapidly to internationalization.

**Networking capability**

According to Mort and Weerawardena (2006) Born-global firms are relatively vulnerable compared to larger MNCs, because they possess fewer financial and other resources that can be directed to their internationalization efforts and that cushion market fluctuations. Many such firms are frequently dependent on a single product that they commercialize in lead markets first, regardless of where those markets are situated geographically. These firms often seek partners who complement their own competencies in these lead markets. Networks are vital to the discovery of opportunities, to the testing of ideas and to the garnering of resources for the formation of the new organizational structure. Networks are often critical in providing the type of information that contributes to reducing the risk and uncertainty inherent in international operations, and they facilitate the acquisition of knowledge and the development of complementary resources.

**Marketing capability**

Marketing capability is the result of an integrative process designed to apply the collective knowledge, skills and resources of the firm to the market-related needs of the business (Day 1994). Marketing capability captures the firm’s capacity to formulate effective marketing strategies that are critical to identify and access international opportunities. The previous experience of the firm, a key component of the born-global firm profile, provides the ability to position products in predominantly niche markets to conform to the needs of the niche market, to communicate the credibility of the firm and its offerings, to find appropriate distribution options and to price appropriately for the value of the product in its market.

**Knowledge-intensive and cutting-edge products or services**

Born-globals develop highly innovative, knowledge-intensive (but not necessarily high-tech) products, both goods and services, that enable positional advantages in global markets. In
order to survive and prosper, born-globals must remain at the cutting edge of the developments in their product market niche. Knowledge-intensive products are those embedded with high knowledge content through innovation and personal creativity, cutting-edge product design, technological know-how and in-depth understanding of the market. These highly innovative, knowledge-intensive products enable born-globals to gain positional advantages in global markets.

**Accelerated internationalization**

Born-globals enter their market shortly after their inception and therefore traditional measures of firm performance are not appropriate to capture their performance; accelerated internationalization is the most appropriate measure of their performance. This includes the speed to first international activity (e.g., exporting and sourcing), the quantity of exports as a percentage of total revenue and the scope of the firm’s internationalization measured as the number of countries entered with exports. As we have seen, these dimensions reveal different facets of the process of internationalization. This composite index could provide a good indicator of the degree of internationalization of the firm, as each variable reflects a different dimension of the commitment to foreign markets (Pla-Barber & Escriba-Esteve 2006).

**2.3 International Business**

The word ‘international’ conjures up images of activities between two or more nations. It could be related to travel, immigration, emigration or politics. The term ‘internationalization’ is used interchangeably with international marketing, international trade, international business and globalisation. Throughout this thesis internationalization is used to refer to the international entrepreneurial activities of firms.

Although the existence of international business is traceable to 3000 BC in India, during the 20th century international business activities underwent an extraordinary change (Joshi 2005). During the latter half of the 20th century, MNEs from the US, Europe and Japan expanded their markets’ production facilities across national borders, which resulted in the accumulation of vast amounts of international sales and assets for MNEs (UNCTAD 2007). But before the evolution of international business is discussed, it is worthwhile to consider the precursor of international trade theories.
2.3.1 International Trade

Theories of international business evolved from the theories of international trade developed to understand the basic reasons behind the evolution of a country as a supply base or a market for specific products. Mercantilism, Absolute Advantage, International Product Life Cycle, National Culture and Competitive Advantage are macroeconomic theories that have influenced organizations and governments in international business (McDougall & Oviatt 2000).

Mercantilism

According to Vaggi (2002), the theory of mercantilism aims at creating trade surplus which in turn contributes to the accumulation of a nation’s wealth measured in terms of gold and silver, which used to be the currency of international trade. During 1500–1800 AD, the European colonial powers actively pursued international trade so as to increase their treasury of goods, which were in turn invested to build powerful armies and infrastructure. The international trade pursued by colonial powers was primarily for the benefit of their respective mother countries, which treated their colonial nations as exploitable resources. Mercantilism was implemented by active government interventions which focused on maintaining trade surplus and expanding colonization. The national governments imposed restrictions on imports through tariffs and quotas while they promoted exports by subsidizing production. The colonies served as a cheap source of primary commodities such as raw cotton, grains, spices, herbs and medicinal plants, tea, coffee and fruit, and also raw material for industries. Thus, mercantilism greatly assisted and benefited the colonial powers in accumulating wealth.

However, Joshi (2005) argued that there are three limitations to the theory of mercantilism:

1. In this theory, accumulation of wealth takes place at the cost of a trading partner. Therefore, international trade is treated as a win-lose game resulting in virtually no contribution to global wealth. Thus, international trade becomes a zero-sum game.

4. If all countries were to follow restrictive trade policies which promote exports, restrict imports and create several trade barriers in the process, the result would be a highly restrictive environment for international trade.

5. Mercantilist policies were used by colonial powers as a means of exploitation, whereby they charged their colonial markets high prices for finished industrial goods and they bought raw materials from their colonies at a very low cost.
**Absolute Advantage**

The theory of absolute advantage, developed by Adam Smith in 1776, explained the basic patterns of international trade (Smith 2008). Countries such as Saudi Arabia export oil to Australia, Australia exports beef to Japan and China exports clothing to the US. In each of these examples the exporting country has an advantage in the cost and availability of the goods sold. This is the principle of absolute advantage (Fraser, Gionea & Fraser 2005). Adam Smith evaluated the mercantile trading policies and found that the wealth of a nation does not lie in building huge stockpiles of gold and silver in its treasury; the real wealth of a nation is measured by the level of improvement in the quality of living of its citizens reflected in per capita income.

Adam Smith emphasized productivity and advocated free trade as a means of increasing global efficiency. A country’s standard of living can be enhanced by international trade with other countries by importing goods not produced by them or by exporting large quantities of goods through specialization. **Absolute advantage** is the ability of a nation to produce a product more efficiently and cost-effectively than any other country. Thus, instead of producing all products, each country should specialize in manufacturing products which it can produce with competitive advantage. The efficiency gained is described below (Joshi 2005).

Firstly, repetitive production increases the skills of the labor force. Secondly, labor time is saved by not having to switch production from one product to another. Thirdly, long product runs provide incentives to develop more effective work methods over a period of time. Therefore, a country should use the increased production to export those products and then acquire more goods by way of imports, which would in turn improve the living standards of its people. A country’s advantage may be either natural or acquired as explained below.

Natural factors such as a country’s geographical and agro-climatic conditions and its mineral or other natural resources, and additional factors such as a specialized labor force, contribute to a country’s natural advantage in certain products. For instance, the agro-climatic condition in India is an important factor for the sizeable export of agro-produce such as spices, cotton, tea and mangoes. The availability of relatively cheap labor contributes to India’s edge in the export of labor-intensive products (Layton, Robinson & Tucker 2012).

Today, international trade is moving from traditional agro-products to industrial products and services, especially in developing countries such as India. In these cases, factors related to a product or its process technology creates a country’s acquired advantage in those products or
processes. The ability to differentiate or produce a different product is an advantage in product technology, while the ability to produce a product more efficiently is an advantage in process technology. For example, the export centers in India for precious and semi-precious stones—Injaiipur, Surat, Navasari and Mumbai—have emerged not because of their raw material resources but because of their skills in processing imported raw stones (Joshi 2005).

**Comparative Advantage**

David Ricardo (1772-1823) advocated the theory of comparative advantage, wherein a country benefits from international trade even if it is less efficient than other nations in the production of commodities. Comparative advantage occurs when a country cannot produce a particular product more efficiently than other countries, but it can produce that product more efficiently than it produces any other products. Thus, the country is at absolute disadvantage with respect to the commodity but the absolute disadvantage is less for that commodity than for any others. Therefore, the country should specialize in the production and export of the commodity in which its absolute disadvantage is less than for other commodities, thus providing a comparative advantage.

Gittins and Forsyth (2007) identified that the Chinese and Australian economies have a comparative advantage. China is a big net exporter of manufactured goods and a big importer of raw materials. Conversely, Australia is a big net importer of manufactured goods and a big net exporter of raw materials. While this sounds positive for the Australian economy, it demonstrates that Australia has lost some focus regarding other export industries.

**The limitations of theories of specialization**

The theories of comparative and absolute advantage emphasize specialization with an assumption that countries are driven only by maximization of production and consumption. However, the attainment of economic efficiency in a specialized field may not be the only goal of countries. For instance, Middle East countries have spent enormous resources and pursued a sustained strategy to develop their agriculture and horticulture sector in which they have very high absolute and comparative disadvantage so as to become self-sufficient (Fraser, Gionea & Fraser 2005). The limitations of theories of specialization can be summarized as follows:

1. Specialization in one commodity or product may not necessarily result in efficiency gains. The production and export of more than one product often have a synergistic effect on developing overall efficiency levels.
2. Theories of specialization assume that production takes place in a condition of full employment and labor is the only resource used in the production process.

3. The division of gains is often unequal among trading partners, which may alienate the partner perceiving or getting lower gains, who may forgo absolute gains to prevent relative losses.

4. The original theories were proposed on the basis of two countries and two commodities situations. However, even when applied to situations of multiple commodities and multiple countries, the same logic applies.

5. The logistics cost, which may defy the proposed advantage of international trading, is overlooked in these theories, and the size of the economy and production runs is not taken into consideration.

**International Product Life Cycle**

Vernon (1996) suggested that international markets follow a cyclical pattern over time due to a variety of factors, which explains the shifting of markets as well as the location of production. The pattern of international product life cycle depends upon the market size of the innovating country. If the innovating country has a large market size, as in case of the US, India and China, for example, it can support mass production for domestic sales. A mass market facilitates the achievement of cost efficiency, which enables the producers to become internationally competitive. However, if the market size of a country is too small to achieve economies of scale from the domestic market, the companies in this country can achieve economies of scale by setting up their marketing and production facilities in other countries where they would be cost effective. Thus, the economics of scope enables the achievement of economies of scale by expanding into international markets. The product life cycle theory explains the emerging pattern of international markets but it has limitations in the present marketing era with fast proliferation of product information, as products are launched more or less simultaneously in various markets.

**National Culture**

Research on the management effects of national culture can be traced back to the pioneering work of Hofstede (1980). The application of Hofstede’s work to entrepreneurial phenomena has contributed to explaining the impact of cultural values on entrepreneurial behavior entrepreneurs’ beliefs in themselves (McGrath & Macmillan 1992), and the impact on national rates of innovation and invention (Shane 1992, 1993). However, Hofstede’s work
was limited to a study on the cultural dimensions of employees in IBM across their international offices. It concluded that employees from individualistic societies such as the US, Canada and the UK are more entrepreneurial than employees in collectivistic societies such as China and India (Hofstede 1980). His work has limitations for MNEs and does not explain why individuals identify opportunities and create new ventures across national borders. Thus, his study may need to be reviewed as collectivistic societies such as Brazil, Russia, India and China (BRIC) become dominating economic powers in the future.

**Competitive Advantage**

Michael Porter, in his book *The Competitive Advantage of Nations* (1990), presents the theory of competitive advantage which concentrates on a firm’s home-country environment as the main source of competencies and innovations. The model is often referred to as the diamond model, wherein four determinants interact with each other, as indicated in Figure 2.12. Porter’s diamond consists of factor conditions, demand conditions, related and supporting industries, firm strategy, structure and rivalry, chance and government.

The theory refers to how well-endowed a nation is as far as resources are concerned. These resources may be created or inherited and they include human resources, capital resources, physical infrastructure, administrative infrastructure, information infrastructure, scientific and technological infrastructure, and natural resources. The efficiency, quality and specialization of underlying inputs that firms draw on while competing in international markets are influenced by a country’s factor conditions.

The sophistication of demand conditions in the domestic market with the pressure from domestic buyers is a critical determinant for a firm to upgrade its product and services. The major characteristics of domestic demand are the nature of demand, the size and growth patterns of demand, and the way a nation’s values are spreading across foreign markets.

The availability and quality of local suppliers and related industries and the state of development of clusters play important roles in determining the competitiveness of a firm. They determine the cost-efficiency, quality and speedy delivery of inputs, which in turn influence a firm’s competitiveness.

Firm strategy, structure and rivalry in the diagram refer to the type of strategy, the extent of corporate investment and the intensity of local rivalry, respectively. Differences in management styles, organizational skills and strategy perspectives create advantages and disadvantages for firms competing in different types of industries. The intensity of domestic
rivalry also affects a firm’s competitiveness. Two additional external variables of Porter’s model for evaluating national competitive advantage are chance and government.

**Figure 2.12: Competitive diamond advantage**

![Diagram of Porter's Diamond Model]

Source: Porter (1990, p. 137)

Occurrences which are beyond the control of firms, industries and usually government have been termed chance, which plays a critical role in determining competitiveness. It includes wars and their aftermaths, major technological breakthroughs, innovations, exchange rates, and shifts in factor or input costs (e.g., rise in petroleum prices). Examples of major chance factors in the context of Australia are the opening up of the Chinese market and the Gulf War.

The government’s role is important in influencing the determinants of a nation’s competitiveness. The role of government in formulating policies related to trade, foreign exchange, infrastructure, labor, and product standards influences determinants in the Porter’s diamond. Hence, it could be inferred that the Australian Government played a significant role in the stagnation of ICT exports between 1996 and 2006 (OECD 2008).
2.3.2 International Marketing

Cateora et al. (2009) argued that firms used to believe that in order to compete in international markets, they needed to be competitive in the domestic market. Following globalization, a firm operating in the domestic market cannot rely on that market due to the firm’s home market becoming an export market for foreign firms. In view of globalization, firms need to be competitive in both domestic and international markets.

Terpstra and Sarathy (2000) explained that international marketing is all about identifying and satisfying global customers’ needs better than the competitors, both domestic and international, and coordinating marketing activities within the constraints of the global environment. Cateora and Graham (2002) defined international marketing as the performance of business activities designed to plan, price, promote and direct the flow of a company’s goods and services to consumers or users in more than one nation for a profit. International marketing takes place when marketing or trade is carried out ‘across the border’ or between ‘more than one nation’. Global marketing is the process of focusing the resources and objectives of an organization on global marketing opportunities and needs (Keegan & Green 2009). As these definitions suggest, research in international marketing and global marketing has mainly focused on MNEs, who have the resources to market in many geographic regions.

2.3.3 Internationalization Strategies

Firms need to choose a strategy to enter foreign markets. Technological advances and rapidly changing political and economic conditions are making it easier than ever before for firms to market their products and services internationally as well as at home. International marketing involves developing and performing marketing activities across national borders (Pride & Ferrell 2010). Firms are finding that international markets provide tremendous opportunities for growth. Entrepreneurial firms such as eBay, Google and Logitech were founded with the knowledge and resources to expedite their spread and investment in the global marketplace. Born-global firms are typically small technology-based firms earning as much as 70% of their sales overseas. They export their products almost immediately after being established in a niche market in which they compete with larger, more established firms (Knight & Cavusgil 2004). Whether the traditional approach, the born-global approach or an approach that merges the attributes of both approaches is adopted to market a firm’s products and services, international marketing strategy is a critical element of the firm’s global operations. Today, global competition in most industries is intense and becoming increasingly fierce with the addition of newly emerging markets and firms.
As depicted in Figure 2.13, firms begin with low-risk export involvement and as sales revenues increase firms commit more resources through a series of steps (Guillén 2003; Cateora et al. 2009; Pride & Ferrell 2010; Rix 2011).

As indicated in Table 2.2, importing and exporting require the least amount of effort and commitment of resources. Domestic firms that want to export with minimal effort and investment should seek export intermediaries. Once a company becomes involved in exporting, it usually develops more knowledge of the target country and becomes more confident in its competitiveness.

The global economic environment creates opportunities and potential problems for the international firm. It may have an impact on a firm’s international entry strategy by favoring direct investment, because one of the basic rationales is to generate favorable conditions for local production and regional trade (Czinkota & Ronkainen 2010). By design, larger markets are created, with potentially more opportunity. Efforts may result in standardized regulations, which in turn affect production and marketing in a positive manner.
Table 2.2: Internationalization strategies

<table>
<thead>
<tr>
<th>Internationalization Strategies</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet</td>
<td>Publishing company information that has minimal interaction with users in domestic markets</td>
</tr>
<tr>
<td>Exporting</td>
<td>Exporting directly or through export agencies</td>
</tr>
<tr>
<td>Company Sales Branches</td>
<td>Opening a local office can overcome the product support problem, but now the responsibility for managing, financing and marketing lies with the exporter.</td>
</tr>
<tr>
<td>Contracting</td>
<td>This involves a legal relationship that allows a firm to enter a foreign market indirectly.</td>
</tr>
<tr>
<td>Licensing/Franchising</td>
<td>This strategy is an alternative to direct investment. The licensee (the owner of the foreign operation) pays commission or royalties on sales or supplies used in manufacturing. Franchising is a form of licensing in which a company (the franchiser) grants a franchisee the right to market its products and services, using its name, logo and methods of operations.</td>
</tr>
<tr>
<td>Joint Ventures/Strategic Alliances</td>
<td>These are partnership arrangements with local firms. Control can become a problematic management issue, but these arrangements can achieve an ideal combination of the expertise and resources of both participants.</td>
</tr>
<tr>
<td>Foreign Direct Investment</td>
<td>Here the firm builds or acquires production or distribution facilities in the foreign country. The firm then has total control over its destiny in the foreign market.</td>
</tr>
<tr>
<td>Wholly Owned Subsidiary</td>
<td>This is the multinational enterprise in which both foreign and domestic operations are integrated. Business opportunities in all countries are viewed and assessed in the same way as in the home country.</td>
</tr>
</tbody>
</table>

Adapted from Guillen 2003; Cateora et al. 2009; Pride and Ferrell 2010; Rix 2011

Decisions regarding global markets must be assessed from four different perspectives: the range and impact of changes resulting from integration; the development of strategies to relate to these changes; organizational changes needed to exploit these changes; and strategies to influence change in a more favorable direction (Pride & Ferrell 2010).

2.3.4 Summary

Theories have evolved to explain the reasons for international trade. The earliest theory of mercantilism emphasized accumulated treasures of wealth and the creation of trade surpluses by encouraging exports and discouraging imports. The subsequent theory of absolute advantage advocated that a country should export the products in which it has absolute advantage and use the export proceeds to acquire imported goods. The theory of comparative advantage suggested that if a country does not have absolute advantage for any of its products, it can benefit by exporting the products for which it has comparative advantage, i.e., what it produces more efficiently than it does any other product. Vernon (1996) found that
international markets follow a cyclical pattern over time due to a variety of factors which explain the shifting of markets as well as location by their production.

The globalization of markets accelerated liberalization in economic policies around the world and the integration of economic policies with the World Trade Organization has remarkably increased the significance of international business. Revolutionary break-throughs in modes of communication and transport have assisted traders to conquer time and distance to a great extent. They have also contributed to convergence in consumer tastes and preferences across national borders and have significantly affected the tools and techniques used in reaching international markets. In simple terms, global marketing means marketing across national borders.

Various definitions of international marketing have been examined. To facilitate an understanding of the terminology, terms such as international trade, international business, international marketing and global/world marketing have also been defined. International marketing is much more complex than domestic marketing because a marketer has to operate in a foreign business environment where uncontrollable factors such as economic, political, socio-cultural, legal and geographical factors, competition and logistics vary substantially from those factors in the domestic market. These environmental differences are also more complex when a firm is operating in a number of foreign markets.

Marketing practices which have been effective in the domestic market may not succeed in foreign markets and domestic marketing experiences and strategies may not be effective in international marketing efforts. The ability of an international marketer to objectively evaluate the influence of environmental factors on marketing is compromised by the marketer’s cultural conditioning and lack of experience with the nuances of other cultures. The culturally sensitive adaptation of marketing to the overseas marketing environment is the secret of success in international markets (Cateora et al. 2009).

### 2.4 Theories of the Firm

According to Ruzzier, Hisrich and Antoncic (2006), international research started with the economic approach in the late 1950s and focused on the international activities of MNEs, resulting in theoretical and empirical data in the area. Dunning stated that ‘we define MNEs as companies which undertake productive activities outside the country in which they are incorporated’ (Dunning 1977, p. 400), which provides a broad perspective of the MNE. Gross
(2004) provided a more detailed explanation including sales and production in multiple countries. It is argued that theories of internationalization related to the larger firm context are inadequate to explain SME internationalization processes. In particular, researchers have found that highly entrepreneurial SMEs have found strategic ways of overcoming the resource constraints to internationalization that relate to their smallness (Hanson et al. 2008). The next section discusses MNE theories before reviewing firm resources, firm capabilities, firm size, dynamic capabilities and cooperative strategies.

### 2.4.1 Multinational Enterprise Theories

#### Internalization Theory

Buckley and Casson (1993) stated that the basis of the internalization theory is that a firm aims to develop its own internal markets if the firm’s transaction costs can be reduced. Internalization involves the formation of vertical market integration of new activities and operations that were previously carried out by intermediate markets under the ownership of the firm. The driver to market internalization is the process of information gathering and assessment for management to determine the best international expansion method. Thus the internalization of transactions across national borders leads to the creation of the MNE (Ruzzier, Hisrich & Antoncic 2006).

#### Transaction Cost Theory

The internalization theory was a precursor of the transaction cost theory (Etemad 2004a), which Williamson (1985) defined as focusing on the cost of transactions within firm hierarchies and outside firm markets in light of the inherent uncertainties involved in contracting or sub-contracting firms’ activities, irrespective of their industry membership and market context.

#### Eclectic Theory

The eclectic theory is based on the internalization theory and explains the selection of a country for foreign direct investment (FDI) or the different forms of international production. According to Dunning (1988), the internalization of economic activity is determined by the recognition of three types of advantages: (1) ownership advantages which are unique to the firm and related to the accumulation of product innovations, technological capacities and intangible assets, (2) the internalization advantages of having the firm capacity to manage activities internally in the value chain, which is the integration of transactions into MNEs
through FDI, and (3) location advantages, referring to manufacturing products in the selected country where transaction costs are reduced and the internal market can be used by operating through foreign subsidiaries.

**Monopolistic Advantage Theory**

The basis of the monopolistic advantage theory is that MNEs exist due to their acquisition of unique sources of superiority over foreign firms in their own markets (McDougall, Shane & Oviatt 1994). One type of monopolistic advantage is the superior ability which is owned by the MNE and cannot be acquired by other firms. Hymer (1960) argued that MNEs have superior knowledge, superior manufacturing processes, differentiated products, organizational talents, brand names or patented technology. Monopolistic advantage theory also states that once a firm has developed superior knowledge, it can exploit this advantage abroad at no additional cost over that of exploiting that advantage in the domestic market because local entrepreneurs are unable to compete in the local market as they would have to pay full price for this knowledge (Ruzzier, Hisrich & Antoncic 2006).

**2.4.2 The Resource-Based View of the Firm**

The resource-based view of the firm (RBV) regards organizations as ‘a broader set of resources’ (Wernerfelt 1984, p. 171). It is a perspective on strategic management with an emphasis on internal analysis, and an attempt to address a perceived imbalance with Porter’s (1980, 1985) positioning school. As such, it is a complementary aspect of the strategic management process (Henderson & Cockburn 1994).

**Figure 2.14: The relationship between SWOT and the RBV**

![Diagram of the relationship between SWOT and the RBV](source: Barney 1991, p. 100)
Figure 2.14 illustrates Porter’s focus on the analysis of the industry and the market that a firm operates in, a predominantly outward-looking view, the main thrust of which is the examination of competitive forces, and the opportunities and threats in the external environment (Barney 1991; Grant 1991). The resource-based view, however, focuses on firm-specific resources. The resources referred to in RBV include assets, capabilities, organizational processes, attributes, information and knowledge (Barney 1991, p. 101).

**Firm Resources**

There are many definitions of firm resources. Table 2.3 compares some of the definitions in strategic management literature. The terms ‘competence’ and ‘capability’ tend to be used interchangeably (Mills, Platts & Bourne 2003). Although the dictionary meaning of both includes ‘ability’, there are differences. For people, competencies are their basic skills, while capabilities are the combination of a person’s competencies that describe a holistic picture of their capacity to act. Capable people are creative, know how to learn and how to adapt (Hamel 2002).

<table>
<thead>
<tr>
<th><strong>Table 2.3: Firm resources</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Three classes:</strong> (1) physical capital resources (infrastructure, geographic location, access to raw materials); (2) human capital resources (the training, judgment, intelligence, relationships, insight of individual managers and workers); and (3) organizational capital resource (formal reporting structure, formal and informal planning processes, controlling and coordinating systems, internal and external networks).</td>
</tr>
<tr>
<td><strong>Resources:</strong> capital equipment, skills of individual employees, patents, brand names, reputation, financial resources, physical resources, human resources, technological resources, organizational resources.</td>
</tr>
<tr>
<td><strong>Capabilities:</strong> complex patterns of coordination, routines.</td>
</tr>
<tr>
<td><strong>Core Competencies:</strong> Know-how, skills, capabilities</td>
</tr>
<tr>
<td><strong>Strategic Assets:</strong> What a firm owns – brands, patents, infrastructure, proprietary standards and customer data.</td>
</tr>
<tr>
<td><strong>Core Processes:</strong> What people in the firm do — methodologies, routines, activities</td>
</tr>
<tr>
<td><strong>Resources:</strong> ‘anything which could be thought of as a strength or weakness’; examples are brand names, in-house knowledge of technology, employment of skilled personnel, trade contacts, machinery, efficient procedures, capital.</td>
</tr>
</tbody>
</table>

Source: Developed for this thesis
Firm resources include physical, human and organizational capital (Barney 1991), a mixture of tangible and intangible assets, skills or competencies (Hall 1993). Grant (1991, p. 119) posits ‘while resources are the source of a firm’s capabilities, capabilities are the main source of competitive advantage’. Firm resources in the form of capabilities are developed, integrated, protected and exploited to give competitive advantage (Barney 1991). It is a firm’s core capabilities that make the most significant contribution to competitive advantage (Hamel & Prahalad 1990).

**Firm Capabilities**

The positioning school approach is to select an industry to compete in, choose a strategic position to adopt and acquire the core capabilities required to compete successfully. The RBV approach, however, is to assess the capabilities the firm has and which additional capabilities are required, and then select the industry and position based on its core capabilities (Leavy 2003). Table 2.4 provides a summary of firm capabilities.

Hamel and Prahalad (1990, pp. 83-4) propose three tests for core competencies:

1. A core competency provides potential access to a wide variety of markets.

2. A core competency should make a significant contribution to the perceived customer benefits of the end product.

3. A core competency should be difficult for competitors to imitate.

The last test closely aligns to the RBV position on strategic resources.

Porter’s (1996) view is that competencies on their own are not sufficient to deliver a sustainable competitive position. Porter (1996, p. 61) states that ‘the essence of strategy is choosing a unique and valuable position rooted in systems of activities that are much more difficult to match’. However, if one adopts the view that activities, for example, routines and processes, are capabilities, Porter’s view is closely aligned with the resource-based view.

The definition proposed by Dess, Lumpkin and Eisner (2007, p. 92) – ‘firm capabilities include all assets, capabilities, organizational processes, information, knowledge, and so forth, controlled by a firm that enable it to develop and implement value-creating strategies’ – is used in this thesis.
Table 2.4: Firm capabilities

<table>
<thead>
<tr>
<th>Description</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>A competency that is capable of being the competitive basis of many of its businesses</td>
<td>Aaker 2001, p. 141</td>
</tr>
<tr>
<td>Capabilities that are valuable and profit producing in the marketplace, and are those capabilities that a company relies on for its competitive advantage. A set of abilities describing efficiency and effectiveness that can be found in any one of the company’s activities</td>
<td>April 2002, pp. 448-449</td>
</tr>
<tr>
<td>Skills, technologies, collective values and norms, business processes and endowments such as brands</td>
<td>Andriessen 2004, p. 182</td>
</tr>
<tr>
<td>The company’s characteristic areas of expertise, and consist of the synergy of ‘intellectual assets’ such as motivation, employee effort, technological and professional expertise, and methods of collaboration and management processes</td>
<td>Godbout 2000, p. 78</td>
</tr>
<tr>
<td>The collective learning in an organization; the organization of work and the delivery of value; communication, involvement and deep commitment to working across organizational boundaries; the glue that binds existing businesses</td>
<td>Hamel &amp; Prahalad 1990, pp. 80-82</td>
</tr>
<tr>
<td>A bundle of skills and technologies that enables a company to provide a particular benefit to customers</td>
<td>Hamel &amp; Prahalad 1996, p. 219</td>
</tr>
<tr>
<td>An organization’s major value-creating skills, capabilities and resources that determine its competitive weapons</td>
<td>Robbins et al. 2000, p. 866</td>
</tr>
<tr>
<td>Competencies that define a firm’s fundamental business as core.</td>
<td>Teece, Pisano &amp; Shuen 1997, p. 516</td>
</tr>
<tr>
<td>Firm capabilities include all assets, capabilities, organizational processes, information, knowledge, and so forth, controlled by a firm that enable it to develop and implement value-creating strategies</td>
<td>Dess, Lumpkin &amp; Eisner 2007</td>
</tr>
</tbody>
</table>

Source: Developed for this thesis

Resource Distribution in Industry

RBV theory is based on the assumptions that strategic resources within an industry are heterogeneously distributed and that they are not perfectly mobile between firms (Barney 1991; Teece, Pisano & Shuen 1997). This is another point of difference from Porter’s (1980, 1985) approach to industry analysis, where Porter assumed homogeneous resource distribution and highly mobile resources (Barney 1991). However, resource heterogeneity introduces the concept of resource barriers, which in part are analogous to Porter’s (1985) barriers to entry (Wernerfelt 1984). The heterogeneous distribution, when combined with
imperfect mobility, is where firms can gain a competitive advantage. Perhaps if resources were homogeneously distributed in industry, there would be no difference in profitability, sustained competitive advantage and first mover advantage between firms (De Toni & Tonchia 2003), and barriers to entry could not exist. If resources were homogeneously distributed, all the firms in the industry could develop and execute common strategies (Barney 1991; Grant 1991).

**Sustainable Competitive Advantage**

Resources are developed or acquired for the purpose of providing a product or service. To add value to an organization, resources generate customer value and provide an enduring basis of competition to prepare the organization for the future. Superior performance comes from an organization’s capacity to create and exploit capabilities not available to competitors (Barney 1991).

From the RBV perspective, to provide sustainable competitive advantage (SCA), firm resources, which are valuable to the organization by enabling the exploitation of opportunities and the neutralization of threats, should be rare or if possible unique. The competitive environment the organization operates in should be difficult to copy or imitate, and finally there should not be substitutes for the resources (Barney 1991; Hamel & Prahalad 1996; Porter 1996; Teece, Pisano & Shuen 1997).

**Firm Size**

The question of small versus big starts with the notion of growth and the reasons so many organizations grow in size. (Daft, Murphy & Willmott 2010, p. 351).

Today, the business world is in the era of the mega-corporation. Companies in all industries from aerospace to telecommunications to the internet strive for growth to acquire the size and resources needed to compete profitably on a global scale, to invest in new technology and to control distribution channels and secure access to markets (Potter 2000). An aspiration of many entrepreneurs is to have their firm become a member of the FT Global 500 or the Fortune 500 lists to grow fast and to grow big (Peters 1992). A decade ago, analysts and management scholars were heralding a shift away from large corporations toward small, nimble companies that could quickly respond in a fast and dynamic environment. Yet despite the proliferation of new small organizations, the giants such as Toyota, Procter & Gamble, Tesco and Wal-Mart have continued to grow (Useem 2003).
There are other pressures for organizations to grow. Many executives have found that firms must grow to stay economically healthy. Often, to stop growing is to stagnate. Innovative companies such as Apple and Google that started as small entrepreneurial firms continue to grow and dominate the global ICT markets. Greater size gives these companies power in the marketplace and thus increases revenues (Treece 1993). Growing organizations are vibrant, exciting places to work, which enables these companies to attract and keep good quality employees. When the number of employees is expanding, the company can offer many challenges and opportunities for advancement.

However, large firms are often standardized, mechanically run and complex. The competing argument says ‘small is beautiful’ because the crucial requirements for success in a global economy are responsiveness and flexibility in fast-changing markets. Small scale can provide significant advantages in terms of quick reactions to changing customer needs or shifting environmental and market conditions (Daft, Murphy & Willmott 2010). Small organizations typically have a comparatively flat structure and a more organic, free-flowing management style that enables entrepreneurship and innovation.

**The Agile Firm**

The paradox is that the advantages of small firms sometimes enable them to succeed and hence grow large. Small companies can become the victims of their own success as they grow large, shifting to a mechanistic structure with vertical hierarchies and spawning ‘organization men’ rather than entrepreneurs. MNEs are ‘built for optimization, not innovation’ and tend to become committed to their existing products and technologies and have a hard time supporting innovation for the future. However, size is not necessarily at odds with speed and flexibility, as evidenced by large companies such as Google, Apple, Canada’s RIM (manufacturer of the BlackBerry) and Britain’s Virgin Group, which all continue to try new ventures and move quickly to change their rules of business. In order to grow, firms need to adapt their capabilities to support their expansion.

### 2.4.3 Value Chain Analysis

Value chain analysis describes the activities that take place in a business and relates them to an analysis of the competitive strength of the business. Influential work by Michael Porter (1985) suggested that the activities of a business could be grouped under two headings: primary activities, which are directly concerned with creating and delivering a product (e.g., component assembly); and support activities, which, while not directly involved in
production, may increase effectiveness or efficiency (e.g. HRM) (Figure 2.15). It is rare for a business to undertake all primary and support activities.

**Figure 2.15: Value chain**

Value chain analysis is one way of identifying which activities are best undertaken by a business and which are best provided by others (outsourced). What activities a business undertakes is directly linked to achieving competitive advantage. For example, a business which wishes to outperform its competitors through differentiating its products or services through higher quality has to perform its value chain activities better than the opposition. By contrast, a strategy of seeking cost leadership requires a reduction in the costs associated with the value chain activities or a reduction in the total amount of resources used. Table 2.5 provides an explanation of primary and support activities.

**Table 2.5: Value chain activities**

<table>
<thead>
<tr>
<th>Primary Activities</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inbound logistics</td>
<td>All those activities concerned with receiving and storing externally sourced materials</td>
</tr>
<tr>
<td>Operations</td>
<td>The manufacture of products and services – the way in which resource inputs (materials) are converted to outputs (products)</td>
</tr>
<tr>
<td>Outbound logistics</td>
<td>All those activities associated with getting finished goods and services to buyers</td>
</tr>
<tr>
<td>Marketing and sales</td>
<td>Essentially an information activity – informing buyers and consumers about products and services (benefits, use, price etc.)</td>
</tr>
<tr>
<td>Service</td>
<td>All those activities associated with maintaining product performance after the product has been sold</td>
</tr>
</tbody>
</table>

Source: Porter (1985)
<table>
<thead>
<tr>
<th>Support Activities</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procurement</td>
<td>This concerns how resources are acquired for a business (e.g., sourcing and negotiating with materials suppliers).</td>
</tr>
<tr>
<td>Human resource management</td>
<td>Those activities concerned with recruiting, developing, motivating and rewarding the workforce of a business</td>
</tr>
<tr>
<td>Technology development</td>
<td>Activities concerned with managing information processing and the development and protection of ‘knowledge’ in a business</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Concerned with a wide range of support systems and functions such as finance, planning, quality control and general senior management</td>
</tr>
</tbody>
</table>

Source: Porter (1985)

Value chain analysis can be broken down into three sequential steps. First is to break down a market or organization into its key activities under each of the major headings in the model. Second is to assess the potential for adding value via cost advantage or differentiation, or to identify current activities where a business appears to be at a competitive disadvantage. Third is to determine strategies built around focusing on activities where competitive advantage can be sustained.

### 2.4.4 The Knowledge-Based View of the Firm

In the past decade, the RBV movement has led to something similar called the knowledge-based view of the firm (KBV) (Spender & Grant 1996; April 2002; Gehani 2002). The basis of the knowledge-based view is that competitive advantage comes from intangible assets such as firm-specific knowledge, the tacit knowledge of a firm’s people gained from combining their knowledge and the ability to create knowledge (Grant 1996). KBV considers knowledge assets, resources and capabilities as the prime strategic resources (Grant 1996; Spender 1996).

The discussion on firm resources includes resources such as skills and know-how and capabilities such as methodologies, routines, activities, ability to innovate and ability to learn. These are all examples of knowledge and the cognitive processes required to deploy knowledge. According to KBV, resources are the personal knowledge possessed by the firm’s people, while capabilities are the organizational knowledge possessed by the firm (Gehani 2002). Grant (1996) claimed that firms exist so that individuals, as resources, can integrate their knowledge through a firm’s routines, as capabilities.

The notion of knowledge integration is important in that it implies complementary knowledge and not universal knowledge within a firm. Indeed, the transfer of tacit knowledge between all people in a firm would be inefficient (Grant 1996).
2.4.5 Dynamic Capabilities

Kianto and Ritala (2010) suggested that the dynamic capabilities theory addresses strategy in changing environments. The paradigm of dynamic capabilities has been introduced in the recent strategic management literature as a theoretical answer to the question of how firms are able to achieve sustained competitiveness in turbulent environments. Dynamic capabilities, consisting of ‘a firm’s ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments’ (Teece, Pisano & Shuen 1997, p. 516), are argued to be the key to the mastery of continuous change required in rapidly and unpredictably transforming competitive environments.

There seems to be a close association between entrepreneurship and resource-based theory, especially the theory of dynamic capabilities (Kianto & Ritala 2010). A firm’s degree of entrepreneurship is, as dynamic capabilities, important to new combinations of resources (Penrose 1959; Brown & Eisenhardt 1998; Eisenhardt & Martin 2000). Therefore, concepts are attached to how the firm deploys and develops resources, as well as to the strategy development and performance of the firm. While entrepreneurial strategy explains how a firm exploits simultaneous innovations at a strategic level, dynamic capabilities theory relates to operational activities which are essentially concerned with the development of the organization and carrying out diverse operations (for example, product development, alliance building, foreign market entry).

The environment seems to be important in connection with entrepreneurship, and dynamic capabilities theory has essentially been concerned with the firm and its management as reactive in respect to changes in the environment (Teece, Pisano & Shuen 1997; Eisenhardt & Martin 2000). This suggests that the need to develop and change resources must essentially be seen as a function of changes in the environment. Entrepreneurship could be claimed as being counter to this. The primary assumption concerning entrepreneurship is that firm management acts in a proactive manner, is innovative and willing to take risks (McDougall & Oviatt 2000). Based on this, it can be said that management attempts to be forward-looking, to take initiative and to implement measures which ensure future results. In this respect, the management regards its firm as being one step ahead. This is more than just reacting to a change in the environment, even though environmental change may be a reason for the firm modifying its entrepreneurial orientation (Covin & Slevin 1989; Lumpkin & Dess 2001).

Based on this interpretation, a rationale was developed concerning why resources ought to be changed and reconfigured. Many researchers have maintained that entrepreneurship can be a
key factor in improving or increasing a firm’s output or results (Shane & Venkataraman 2000; Madsen 2007). This suggests that entrepreneurship can contribute to an increased understanding of the establishment and utilization of firm resources. Studies have confirmed a positive association between entrepreneurship and dynamic capabilities (Mort & Weerawardena 2006; Weerawardena et al. 2007). Consequently, it seems that entrepreneurship supports the development of dynamic capabilities.

2.4.6 Cooperative Strategy

A cooperative strategy is where firms work together to achieve a shared objective (Hemphill 2003). Cooperating with other firms is a strategy used to create value for customers that is less than the cost of providing that value and to establish a favorable position relative to the competition (Singh & Mitchell 2005). The increasing importance of cooperative strategies as a growth engine should not be underestimated (Hanson et al. 2008). Various cooperative strategies are being used by firms to gain competitive advantage such as domestic strategic alliances, international strategic alliances and network cooperative strategy. Managing cooperative strategies requires managing partners; this is discussed next.

Strategic Alliances

A strategic alliance is a cooperative strategy in which firms combine some of their resources and capabilities to create a competitive advantage (Ireland, Hitt & Vaidyanath 2002). Strategic alliances involve firms with some degree of exchange and sharing of resources and capabilities to cooperatively develop or distribute goods or services (Subramaniam & Venkataraman 2003). Strategic alliances allow firms to leverage their existing resources and capabilities while working with partners to develop additional resources and capabilities as the foundation for new competitive advantages (Kuratko, Ireland & Hornsby 2001).

Many firms, especially large global competitors, establish multiple strategic alliances. This is evident in the opening case with Fujitsu forming alliances with AMD, Cisco, Dell and Microsoft, among others. Focusing on developing advanced technologies, Lockheed Martin has formed over 250 alliances with firms in more than 30 countries as it concentrates on its primary business of defense modernization (Antoine et al. 2003). In general, strategic alliance success requires cooperative behavior from all partners. Actively solving problems, being trustworthy and consistently pursuing ways to combine partners’ resources and capabilities to create value are examples of cooperative behavior known to contribute to alliance success (Gerwin 2004).
A competitive advantage developed through a cooperative strategy is often called a collaborative or relational advantage (Das & Teng 2001). Rapid technological changes and the global economy are examples of factors challenging firms to constantly upgrade current competitive advantages while they develop new ones to maintain strategic competitiveness (Kim & Lee 2003).

Cooperative strategies have become an integral part of the competitive landscape and are important to many companies. For example, surveyed executives of technology companies stated that strategic alliances are central to their firms’ success (Kelly, Schaan & Jonacas 2002). Speaking directly to the issue of technology acquisition and development for these firms, a manager noted that ‘you have to partner today or you will miss the next wave’. One company cannot possibly acquire the technology fast enough, so partnering is essential (Hinterhuber 2002).

Among other benefits, strategic alliances allow partners to create value that they could not develop by acting independently and to enter markets more quickly (Fuentelsaz, Gomez & Polo 2002; Kelly, Schaan & Jonacas 2002). Moreover, most (if not all) firms lack the full set of resources and capabilities needed to reach their objectives, which indicates that partnering with others will increase the probability of reaching them (Harrigan 2001).

The effects of the greater use of cooperative strategies – particularly in the form of strategic alliances – are noticeable. In large firms, for example, alliances account for more than 20 per cent of revenue (Dent Jr 2001). Supporting this expectation is the belief of many senior executives that alliances are a prime vehicle for firm growth (Gonzalez 2001). In some industries, alliance versus alliance is becoming more prominent than firm versus firm as a point of competition. In the global airline industry, for example, competition is increasingly between large alliances rather than between airlines (Oesterle & Macharzina 2002).

Essentially, firms form strategic alliances to reduce competition, enhance their competitive capabilities, gain access to resources, take advantage of opportunities and build strategic flexibility. To do so means that they must select the right partners and develop trust (Saparito, Chen & Sapienza 2004). Thus, firms attempt to develop a network portfolio of alliances in which they create social capital that affords them flexibility (Inkpen & Tsang 2005).
**International Cooperative Strategy**

A cross-border strategic alliance is an international cooperative strategy in which firms with headquarters in different nations combine some of their resources and capabilities to create a competitive advantage. While cross-border alliances can be complex, they may be necessary to improve technology, as indicated by the international alliance of IBM, Sony and Toshiba to develop a new microprocessor (Hamm 2005).

In general, multinational corporations outperform domestic-only firms (Hitt, Hoskisson & Kim 1997). Although cross-border alliances are more complex and risky than domestic strategic alliances, the fact that firms competing internationally tend to outperform domestic-only competitors suggests the importance of learning how to diversify into international markets. Careful and thorough study of a proposed cross-border alliance contributes to success as do precise specifications of each partner’s alliance role (Sebenius 2002).

**Network Cooperative Strategy**

In addition to forming their own alliances with individual companies, a growing number of firms are joining forces in multiple networks (Zhao, Anand & Mitchell 2005). A network cooperative strategy is a cooperative strategy wherein several firms agree to form multiple partnerships to achieve shared objectives.

In regard to the ICT industry, a network cooperative strategy is particularly effective when it is formed by geographically clustered firms, as in California’s Silicon Valley and Singapore’s Silicon Island (Copp & Ivy 2001; Ferrary 2003). Firms involved in networks gain information and knowledge from multiple sources. They can use these heterogeneous knowledge sets to produce more and better innovation. As a result, firms involved in networks of alliances tend to be more innovative (Bell 2005). However, there are disadvantages to participating in networks as a firm can be locked into its partners, precluding the development of alliances with others.

**Alliance Network Types**

An important advantage of a network cooperative strategy is that firms gain access to ‘their partners’ partners’ (Cline 2001). Having multiple collaborations increases the likelihood that additional competitive advantages will be formed as the set of shared resources and capabilities expands (Rudberg & Olhager 2003). In turn, the development of new capabilities
further stimulates the development of the product innovations that are so critical to strategic
competitiveness in the global economy (Young, Charns & Shortell 2001).

The set of a strategic alliance partnership resulting from the use of a network cooperative
strategy is commonly called an alliance network. The alliance networks that companies
develop vary according to industry conditions. A stable alliance network is formed in mature
industries where demand is relatively constant and predictable. Through a stable alliance
network, firms try to extend their competitive advantages to other settings while continuing to
profit from operations in their core, relatively mature industry. Thus, stable networks are built
for exploitation of the economies of scale and/or scope available between firms (Garcia-Canal
et al. 2002).

**Dynamic alliance networks** are used in industries characterized by frequent product
innovation and short product life cycles (Shankar & Bayus 2003). For instance, the pace of
innovation in the IT industry is too fast for any one company to maintain success over time.
Therefore, the ability to develop and nurture strategic partnerships can make the difference
between success and failure. As such, independent software vendors earn more than 40 per
cent of their revenue through successful partnering. After IBM’s ‘near-death experience’ in
the early 1990s, the power of its alliances with more than 90,000 business partners helped to
shape its turnaround. By partnering, companies play on ‘teams’, fielding the best players at
every position and thus providing stamina and flexibility for customers. Through partnerships,
a company can offer a broader range of IT solutions and improve the probability of market
success (Duncan 2003).

Thus dynamic alliance networks are primarily used to stimulate rapid, value-creating product
innovations and subsequent successful market entries, demonstrating that their purpose is
often the exploration of new ideas (Simsek, Lubatkin & Kandemir 2003). Often, large firms
in such industries as software and pharmaceuticals create networks of smaller entrepreneurial
start-up firms to accomplish this goal (King, Covin & Hegarty 2003). Small firms also build
credibility faster by being engaged in such network relationships (Goldberg, Cohen &
Fiegenbaum 2003).

Firms are regularly using strategic alliances to enter international markets; the alliances help
these firms to survive in those markets early and to be competitive later. In fact, firms are
increasingly participating in international network alliances. For example, IBM has alliances
with Sony and Toshiba to develop the cell microprocessor and another alliance with Microsoft
and ATI Technologies to develop a different chip. However, Microsoft and ATI gain value indirectly from IBM’s other alliance because it adds to IBM’s technological capabilities. While these alliances appear to be successful, there are risks with alliances as well.

One cooperative strategy risk is that a partner may act opportunistically. Opportunistic behavior surfaces either when formal contracts fail to prevent it or when an alliance is based on a false perception of partner trustworthiness. The opportunistic firm wants to acquire as much of its partner’s tacit knowledge as it can. Full awareness of what a partner wants in cooperative strategy reduces the likelihood that a firm will suffer from another’s opportunistic actions (Hitt et al. 1997).

Managing Cooperative Strategies

As our discussion has shown, cooperative strategies represent important strategic alternatives for firms competing in the global economy (Larsson et al. 2003). However, our study of cooperative strategies also shows that they are complex and challenging to manage successfully (Ireland, Hitt & Vaidyanath 2002).

Firms gain the most benefit from cooperative strategies when they are effectively managed. The firm that learns how to manage cooperative strategies better than its competitors may develop a competitive advantage in terms of this activity (Dyer, Kale & Singh 2001). Because the ability to effectively manage cooperative strategies is unevenly distributed across organizations in general, assigning managerial responsibility for a firm’s cooperative strategies to a high-level executive or to a team improves the likelihood that the strategies will be well managed.

The relative lack of detail and formality that is part of the contract developed by firms using the second management approach of opportunity maximization means that firms need to trust each other to act in the partnership’s best interests. A psychological state, trust is the willingness to be vulnerable because of the expectations of positive behavior from the firm’s alliance partner (Hutt et al. 2000). When partners trust each, there is less need for detailed formal contracts to specify each firm’s alliance behavior, and the cooperative relationship tends to be more stable (Jennings, Artz & Cristodoulou 2000; Steensma, Marino & Weaver 2000). Trust tends to be relatively more difficult to establish in international cooperative strategies than in domestic ones. Differences in trade policies, cultures, laws and politics that are part of cross-border alliances can generate problems. When trust exists, partners’
monitoring costs are reduced and opportunities to create value are maximized. Essentially, in these cases, the firms have built social capital (Inkpen & Tsang 2005).

Research showing that trust between partners increases the likelihood of alliance success seems to highlight the benefits of the opportunity maximization approach to managing cooperative strategies. Trust may also be the most efficient way to influence and control alliance partners’ behavior (Dyer & Wujin 2003). Research indicates that trust can be a capability that is valuable, rare, imperfectly imitable and often non-substitutable (Davis et al. 2000). Thus, firms known to be trustworthy can have a competitive advantage in terms of how they develop and use cooperative strategies both internally and externally (Hillebrand & Biemans 2003). One reason is that it is impossible to specify all operational details of a cooperative strategy in a formal contract. Confidence that a partner can be trusted reduces a firm’s concern about the inability to contractually control all alliance details.

2.4.7 Limitations of the Resource-Based View

The RBV concentrates on firm resources (Barney 1991) and firm capabilities (Dess, Lumpkin & Eisner 2007). Barney (2001) argued that there has been a lack of research into integrating creativity and the entrepreneurial act, which would assist in discovering alternative uses of resources, leading to valuable heterogeneous firm resources prospectively contributing to a firm’s competitive advantage.

Alvarez and Busenitz (2001) claimed that the resource-based view focuses on heterogeneity of resources and entrepreneurship theory focuses on the heterogeneity about the value of resources. However, heterogeneous resources alone provide only short-term advantage; valuable resources would provide a sustainable competitive advantage.

Cooperative strategies have mainly focused on MNEs. There has been limited research into how international new ventures join and collaborate in international cooperative strategies and network alliances. Cooperative strategies would provide advantages for entrepreneurial firms in sharing resources, risks and knowledge creation, and would provide global opportunities.

The following section reviews SMEs, SME internationalization and the external environment.
2.5 SME Internationalization

Why are small businesses important? Small businesses have always been of interest because any business has to start off small; even businesses that are now known throughout the world were once small businesses.

2.5.1 What is an SME?

Small business contribution to an economy through self-employment and employment growth is well accepted. Small businesses contribute more than large businesses to job creation and employment growth. Small businesses also contribute flexibility and assist in micro-economic reform by allowing the restructuring of industries. For example, in Australia in the early 1990s, many industries such as textiles, clothing and footwear largely moved off-shore.

Australian SMEs constitute 99% of all Australian firms (ABS 2007b). Only 4% of Australian firms export and 98% of the exporting firms are SMEs (Pink & Jamieson 2000) compared to EU SME exports of 18% (OECD 2005). However, Australian ICT SME export rates are comparatively low as only 42% of Australian ICT SMEs export compared to 98% of Australian SMEs. Australian ICT SME exports account for A$2.2 billion of the total ICT exports of A$5.22 billion (ABS 2008). This low export rate is exacerbated by stagnant Australian ICT equipment exports between 1996 and 2006 (OECD 2008). While this problem continues, ICT goods and services imports have risen to A$26 billion and increased the Australian trade deficit of ICT goods and services to A$20.8 billion (ABS 2008).

ICT was one of the few industries impacted by the global financial crisis as global mobile phone users reached 4.7 billion and internet users reached 1.8 billion in 2009 (ITU 2009; InternetWorldStats 2010), driving the pace of technological innovation for creating new opportunities and disrupting existing markets. This presents Australian ICT SMEs with a global ICT market worth US$3.8 trillion to identify and exploit new entrepreneurial opportunities (Harrison 2008).

It seems that, generally speaking, the trend globally is for SMEs to pay more money to their employees. So the growth of a vigorous, innovative SME sector which is capable of developing and delivering high value market offerings is very important.

The path of SMEs to growth and expansion is not easy; some researchers have observed that it is cluttered with failure. This is a cause for concern for both business people and policy
planners. This has been a major focus of concern over the last few decades for both academics and policy planners.

Small business generally suffers from ‘the liability of smallness’. There are many tasks to be undertaken and many skills to be mastered, yet there may be only one or two people to do everything. A considerable number of small businesses fail at their infancy stage and some fail within a few years of inception (Watson & Everett 1996; Ladzani & van Vuuren 2002). The literature has attributed this to ‘resource poverty’ (Welch & White 1980) – for example, lack of financial capital (Boer 1992) or management skills (Martin & Staines 1994). However, there are a growing number of challenges to this view.

2.5.2 Internationalization Approaches taken by SMEs

During the last few decades there has been a growing interest in SME internationalization. There is growing consensus among researchers that small firms differ in nature from their larger counterparts. They are not ‘smaller versions of large firms’, but have their own operational characteristics (Daft, Murphy & Willmott 2010, p. 351). Therefore, it is argued that theories of internationalization originated in the larger firm context are inadequate to explain the internationalization of SMEs. In particular, researchers have found that highly entrepreneurial small firms have found strategic ways of overcoming the constraints to internationalization that relate to their smallness. However, after more than four decades, no single theory explains SME internationalization (Pla-Barber & Escriba-Esteve 2006; Weerawardena et al. 2007; Coombs, Sadrieh & Annavarjula 2009).

In this section, the different approaches SMEs have taken in internationalizing their business are reviewed. MNEs with their vast resources and market knowledge learn to internationalize from experience and increase their degree of internationalization. Most studies on SME internationalization focus on exporting as the main mode of international market entry. An understanding of the dynamics of firm internationalization is important. De Burca, Fletcher and Brown (2004) concluded that there are four approaches to SME internationalization: learning approaches, stages approaches, contingency approaches and network approaches.

Learning Approaches

Johanson and Weidersheim-Paul (1975) applied learning theories to identify internationalization as a static process – an evolutionary, sequential building-up of foreign commitments over time – and to recognize the role that psychic distance plays in the process. Firms commence their international involvement in nearby markets that are most similar to
the home market and as they learn more about the export process they become willing to try markets which are more distant in terms of cultural background, political system and economic circumstance (Figure 2.16).

**Figure 2.16: Stages model**

<table>
<thead>
<tr>
<th>Stage 1: No regular exporting activities</th>
<th>Stage 2: Export via independent agents</th>
<th>Stage 3: Establishment of an overseas subsidiary</th>
<th>Stage 4: Establishment of an overseas manufacturing subsidiary</th>
</tr>
</thead>
</table>

Source: Johanson and Weidersheim-Paul (1975)

The stages theory and the learning theory are both incremental, which means that firms repeat the process in all markets rather than applying their experience in one market when entering another which requires a greater commitment of resources (De Burca, Fletcher & Brown 2004).

**Stages Approaches**

Johanson and Vahlne (1977) stated that the theory of the stages approach is that a firm starts with the mode of entry which requires the least resource commitment and as they gain international experience the firm will gradually increase resource commitments. Reid (1981) argued that firms moved from awareness (of export potential), to intention (to do something about exporting), to trial (of exporting attempt), to evaluation (of the results of initial exporting), and to acceptance (of exporting as a good thing). According to Fillis (2001), these theories follow a static process of internationalization.

**Contingency Approaches**

The contingency theory is based on firms evaluating and responding to an opportunity as it occurs, regardless of whether the market is close in distance or whether a complex mode of entry is required. Okoroafo (1990) argued that factors internal to the firm as well as external situations or opportunities will cause firms to leapfrog stages and select one that is the most appropriate for the international market.

**Network Approaches**

Johanson and Mattson (1988) described modes of entry in terms of the position established in international networks as:
1. *International extension* – entering a international network that is new to the firm

2. *International penetration* – consolidating and building upon an already established position in an international network

3. *International integration* – coordinating the positions already occupied in networks in different countries

The network theory emphasizes the role of linkages and relationships in the internationalization process, where firms become involved in international activities by establishing links with networks in other countries. The home-market network of the exporting firm, including the firms which provide inputs and facilitate the activities of the firm, becomes linked to the network of the buying firm in the international country, including firms which distribute, facilitate, service and on-sell the product (Bell 1995).

The network model caters for the current dynamic situation in international marketing where internationalization involves not only outward-driven activities but also inward-driven activities, as well as activities in which import and export transactions are linked and mutually dependent (De Burca, Fletcher & Brown 2004).

**Why do SMEs Internationalize?**

Some reasons why SMEs go international are summarized as: small economy small market effects, saturated local market effects, and finding a niche and exploiting it internationally. Before the recent changes to markets and industries, small and large firms had separate spheres of operation with large firms expanding into international markets and small firms operating in domestic markets (Cateora & Graham 2002; Cateora et al. 2009). Many of the high entry and exit barriers have been removed or significantly decreased by changes such as the EU’s single market and borderless world with interlinked economies and multilateral free trade agreements under the World Trade Organization, and by regional agreements such as the Association of South-East Asian Nations (ASEAN) and bilateral agreements such as the US – Australia Free Trade Agreement. Even if a firm does not proactively decide to enter international market competition, it may do so reactively when what it had considered its natural ‘owned’ market, its domestic market, is entered by a more aggressive competitor through either a real market presence or an online market presence. SME internationalization strategy must be developed from sound analysis of the drivers of SME internationalization. It is not sufficient for SMEs to copy the strategy of larger firms as they usually do not have the resources to do so effectively, and when going ‘head to head’ with larger firms they are likely
to be very vulnerable using such derived strategies. ICT has made international business transactions easier and faster and should be integrated in the strategic plan.

2.5.3 SMEs and E-commerce

The internet and its accompanying technologies have been characterised as ‘disruptive technologies’ (Christensen 2000) as they challenge the business structure, the existing technological infrastructure and decision-making processes. That is why researchers such as Kalakota and Robinson (2001) have defined e-commerce as ‘the complex fusion of business process, enterprise applications and organizational structure necessary to create a high-performance business model’. Therefore, before acquiring e-commerce capabilities, an organization must engage in a fundamental consideration of the issues pertaining to the organization itself (e.g., a new communication/selling medium), with regard to external stakeholders, including customers, suppliers and partners. It is expected that the impact of such a radical innovation as e-commerce on organizations will far exceed the impact of incremental innovations. How accurately organizations assess this impact will govern their success or failure with e-commerce.

It has been assumed that ICT could assist SMEs in solving many of their inherent problems such as their small size and limited resources (of employees, skills, capital, knowledge, lack-time and managerial skills), their isolation from the outside environment and their limited market scope. Therefore, it was expected that the SME sector would benefit immensely from adopting various technological solutions (Cateora et al. 2009). Over recent years, with the growing use of the internet for global transactions, it has been assumed that the internet would provide a level playing field for SMEs by removing barriers to exporting. In particular, it has been suggested that the geographic distance which favoured the larger organizations with the resources and capabilities to access global markets has been virtually eliminated by the connectivity provided by the internet.

A primary argument supporting these beliefs is that the internet reduces the resource requirements needed to access international markets (Oviatt & McDougall 1994; McDougall & Oviatt 2005). However, research suggests that technological uncertainty may increase the resource commitment needed to introduce an internet business successfully. The resources required include financial resources for the development and implementation of company websites, ongoing investment to cover running costs, maintenance and upgrading, and human resources to manage the integration of the internet business with existing marketing processes.
**E-commerce Studies**

Macgregor and Vrazlaic (2004) concluded that Swedish SMEs (53%) adopted e-commerce more strategically into their daily activities than Australian SMEs (15.6%). They reported that the advantages from adopting e-commerce are reducing administrative costs, improving internal efficiency, improving marketing and improving competitiveness. On the other hand, they identified some of the deterrents that prevented non-adopters in both countries from adopting e-commerce: (1) e-commerce did not fit the way they did business; (2) e-commerce did not fit the way their customers did business and (3) lack of technical know-how.

Due to the dominance of single owners, Australian SMEs are less likely to form strategic alliances than Swedish SMEs (Macgregor & Vrazlaic 2004). Macgregor and Vrazlaic found that those Australian SMEs did not trust consultants with their business information and relied more on family members and friends to provide marketing and technical advice. As a result, the e-commerce initiatives of those SMEs were highly risky with poor planning and poor internal control.

**Publicize, Interact and Transform Model**

*Figure 2.17: ICT adoption by SMEs*

Foley and Ram (2002) developed the publicize, interact and transform (PIT) model to provide a view of e-business adoption. The model has two elements: firstly, the functions that ICT can be used for, such as publicizing product details on the web, interacting with customers for
feedback, and transforming business activities by allowing customers to specify delivery times; and secondly, the business activities it can be applied to, such as logistics and delivery, finance, purchasing and procurement, operations, marketing and sales, and after-sales service (Figure 2.17).

Foley and Ram (2002) report that 80 per cent of UK SMEs transformed their businesses by adopting ICT, and SMEs engaged in high-end ICT activities in finance. However, only 5–10 per cent of SMEs were found to be engaged in e-business transformation. This raises the questions of what technologies SMEs use for business activities and how they are transforming their businesses using a model such as PIT.

**Internet Marketing Functions**

E-commerce literature considers different methods of integrating e-channels into existing channel structures (Earl 2000). The focus is on using the electronic channel for the marketing function (Peterson, Balasubramanian & Bronnenberg 1997). It is unclear which approach generates the highest returns. Some have suggested that achieving the highest possible number of transactions can be the best outcome of using e-channels (Klein & Quelch 1997). Others have claimed that building customer relationships represents the ultimate goal (Hoffman & Novak 1996). There is general agreement, however, that organizations progress from simple communication- and information-based applications toward more advanced relationship- and transaction-based models (Sorensen & Buatsi 2002). The more advanced models are seen to deliver more benefits as customers are encouraged to engage with exporters and favor the creation of loyal continuing relationships. Proponents of e-loyalty point to the lower communication costs and higher value from continuing relationships via the internet compared with those using traditional channels to market (Evans & Wurster 2000).

Sorensen and Buatsi (2002) describe internet marketing functions at three levels:

At level 1, the company basically puts its brochures and other information material on the web page. All visitors get the same information and there is no possibility for interaction. This stage primarily aims to cut costs through digitalizing current marketing material. This does not mean that the web page is not attractive, only that it is used to provide information to interested parties and nothing more.

At level 2, the level 1 information is extended with the ability for the user to get responses to requests. Thus, it is an interactive web page but limited to ask-response interaction. This level also comprises simple e-commerce.
At level 3, the interaction is more complex. A dialogue takes place between the actors and it is possible to personalize the interaction. To reach and implement level 3, it is necessary for the user to reveal at least some information about himself or herself. This information is processed and used to provide appropriate responses to visitors. At this stage, value creation is as important as, if not more important, than cost cutting.

The three levels may be seen as stages with newcomers to the internet starting at stage 1 by cutting costs through digitalizing their information material, moving into stage 2 with limited interaction and ending at stage 3 with a full-blown interactive website, including e-commerce.

However, it is not necessary to enter level 3 to operate successfully. For example, Billabong operates a customized website that is not an e-commerce website. They operate in a successful relationship with their retailers by providing a store locator, allowing visitors to the website to locate the store nearest them to engage in final selection and purchase of merchandise.

The Billabong website also provides a good example of a virtual, online multi-domestic strategy, at the same time as operating a global strategy. A toolbar on the home page provides visitors with the option of ‘select a region’. If the visitor selects South America, this allows entry to a page customized for that particular region with personalities, events and seasonal clothing ranges and information provided in the appropriate language.

**Strategic Alliances and Income Generation**

Thus, strategically a company can use the internet in two ways. First, it can use the internet to construct or digitalize its business at the three levels previously described and second, it can use relevant existing websites by promoting its own business through linkages to those sites. The latter strategy includes strategic alliances and income generation from cooperation between companies on the internet. Web portals can also be established by third parties as businesses to provide this sort of linkage. For example, thailand.com is operated and managed by Thai Portal Co. Ltd, an associated company of the Nation Multimedia Group. The website is an e-commerce marketplace serving Thai exporters and worldwide importers in different geographical locations. The site promotes Thai products to the worldwide market. The portal aims to apply the latest internet tools and a ‘new economy’ organizational model to streamline the international trading process, offering huge savings in costs and time and a convenient function of trading for businesses both large and small.
The internet works for SMEs for some seemingly small and yet powerful reasons. These can be summarized as: cost savings for the business; meeting customer needs for service; and searching, researching and putting together market niches accessed through the interconnected online world. The internet can therefore be used as a saving, servicing and searching instrument, and a means to aggregate small segments into viable markets (Sorensen & Buatsi 2002).

2.5.4 Limitations of SME Internationalization

Andersen (1993, p. 21) argued there are three limitations in the stages theory:

1. Firms with large resources experience small consequences of their commitments and can take larger internationalization steps.

2. When market conditions are stable and homogenous, relevant market knowledge can be gained in ways other than direct experience.

3. If a firm has considerable experience from markets with similar conditions, it may be able to generalize this experience to any specific market.

However, ICT SMEs are innovative firms that lack internal resources and management capabilities. They require dynamic approaches to compete globally.

Fillis (2000) uncovered evidence that in small firms, competencies in entrepreneurship and marketing have resulted in competitive advantage in domestic and international markets. These firms can then enter and develop much faster markets than previously modelled (Fillis 2001).

The previous review of SME internationalization has been discussed through an international business lens, but researchers have recommended that SME internationalization should also be examined through an entrepreneurial theoretical viewpoint to contribute to theory building in entrepreneurial internationalization (Coviello, McDougall & Oviatt 2011; Jones, Coviello & Tang 2011).

2.5.5 External Environment

The influence of the market environment on the development of strategies and the adoption of a strategic posture by exporting firms is well documented in the relevant literature (Jain 1989; Cavusgil & Zou 1994). Classical and current theories on strategy development suggest that to maximize profit, firms should develop strategies that match the needs of their market
environments. There is no departure from this principle in the export context. Similarly, export marketing literature has confirmed that the external and internal environments jointly shape the strategies and postures adopted by rational exporters (Jain 1989).

Entrepreneurship is an environmentally driven phenomenon (Morris & Lewis 1995). Three attributes of the market environment appear to be the main environmental drivers of entrepreneurship: hostility, dynamism and heterogeneity or diversity (Dess & Beard 1984).

Hostility characterizes environments with ‘precarious industry settings, intense competition, harsh, overwhelming business climates and the relative lack of exploitable opportunities’ (Covin & Slevin 1989, p. 75). Hostility is the opposite of environmental munificence (Miller 1983), which describes environments rich in opportunities and resources that guarantee the safe operation of a firm.

Dynamism characterizes fast and frequently changing environments (Dess & Beard 1984; McArthur & Nystom 1991), whereas diversity (or heterogeneity) refers to environments that are composed of many dissimilar components unrelated to each other (McArthur & Nystom 1991; Nwachukwu & Tsalikis 1991).

In export market studies, environmental diversity is normally expressed by three elements: cultural dissimilarity, economic dissimilarity and the physical distance of export markets (Vachani 1991). All three elements individually or jointly tend to make environments more unpredictable and more uncertain (Covin & Slevin 1991). To cope with environmental uncertainty, many organizations adopt an entrepreneurial posture (i.e., they adopt risk-taking, innovative and proactive behavior) (Mintzberg 1973; Miller, Droge & Tolouse 1988). Accordingly, these conditions provide the stimulus for a firm to adopt an entrepreneurial posture.

Empirical evidence supports the view that organizations operating in hostile, dynamic and heterogeneous environments are more likely to adopt an entrepreneurial posture. For example, Covin and Slevin (1989), Zahra and Covin (1995), Zahra, Neubaum and Huse (1997), and Zahra and Neubaum (1998) found that dynamism, heterogeneity and hostility are all positively related to each of the components of entrepreneurial behavior (i.e., risk-taking behavior, innovativeness and proactiveness) and the entrepreneurial posture itself. As the market environment of exporting firms tends to be more diverse and more risky than that of firms operating in domestic markets (Albaum, Duerr & Strandskow 2001), firms are likely to co-align their orientation to the environment by adopting entrepreneurial behavior.
International Performance

As has been mentioned earlier, there is a scarcity of studies linking entrepreneurial behavior with exporting. In general, export markets tend to be more complex, more unpredictable and possibly more hostile to foreign firms than domestic markets –conditions that favor the adoption of entrepreneurial behavior. The adoption of entrepreneurial behavior by firms operating in such environments is likely to increase their performance (Covin & Slevin 1991).

The most common measure of size in entrepreneurship, innovation and exporting research is the number of a firm’s employees (Balabanis & Katsikea 2003). This measure is highly correlated with other measures of size such as sales and size of assets. This measure is theoretically appealing, because many of the problems of large firms (as explained earlier) are due to the increased need for co-ordination as a firm employs more people.

Recent Trends in SME Exports

Leonidou and Katsikeas (1996) argued that globalization has led firms to seek opportunities abroad in order to survive and has increased the importance of exporting activities. In terms of resource commitments, exporting requires minimal financial and human capital compared to other entry modes. Exporting provides firms with high levels of flexibility and a cost-effective way of entering international markets (Leonidou 1995; Leonidou & Adams-Florou 1999). The main advantage of exporting is that it is seen as an easy activity having minimal risks by small firms as they export excess production capacity when an order is received from abroad. This is a reactive approach to exporting (Onkvisit & Shaw 2004). Exporting is crucial to public policy makers, business managers and marketing researchers (Katsikeas, Leonidou & Morgan 2000).

For public policy makers, export performance is of interest as it accumulates foreign reserves, improves trade accounts, improves productivity, and improves employment levels and international competitiveness (Mortimer 2008). Firm managers are interested in export performance as it increases firm growth, sustains a competitive advantage and ensures firm survival against international competition (Samiee & Walters 1990; Terpstra & Sarathy 2000). Zou and Stan (1998) stated that marketing researchers consider exporting a challenging and promising area for theory building in international marketing.

The many studies on export performance published since Tookey’s (1964) seminal work are testimony to the importance of exporting (Sousa 2004). Despite the considerable body of knowledge in the area, studies on the factors affecting export performance are contradictory.
and highly fragmented as there is a lack of agreement on the conceptualization and operationalization of export performance (Aaby & Slater 1989; Cavusgil & Zou 1994; Zou & Stan 1998; Sousa 2004). Shoham (1998) claimed that export performance is a multi-faceted concept and single-item measures are insufficient for reliable assessment. However, several studies have been conducted to explore and develop multi-item measures of export performance (Styles 1998; Zou & Stan 1998; Zou, Taylor & Osland 1998; Lages & Lages 2004).

Leonidou, Katsikeas and Piercy (1998) argued that export performance has remained the least understood area of international marketing, and Sousa (2004) stated that there is a need for an analysis of existing empirical knowledge to facilitate theory development on export performance measures. Comprehensive reviews of export performance (Aaby & Slater 1989; Zou & Stan 1998; Sousa 2004) have confirmed that measurement of export performance have suffered from conceptual, methodological and practical limitations, obstructing theory development in the discipline.

According to the EU (2003), SMEs are estimated to contribute between 25% and 35% of world manufactured exports. Approximately one-fifth of manufacturing SMEs in OECD countries draw between 10% and 40% of their turnover from cross-border activities. The SME share in total US exports averaged about 30% in recent years. In Japan, the SME share (< 300 employees) in total manufacturing exports was close to 50% throughout the 1990s, while in Korea, SME (< 300 employees) exports varied between one-third and two-fifths of total exports during that time.

**Figure 2.18: World SME exports**

![SME Exports](image)

Source: Adapted from EU (2003) and ABS (2007a)
With regard to European Union trade, the EU (2003) survey results confirmed that neighboring countries still constitute the easiest and most frequent business partners. For EU countries, importing is the most frequent form of SME internationalization followed by exporting. Figure 2.18 shows for European countries the total share of SMEs that have a foreign supplier and the total share of SMEs that have exports. (The categories in this figure are not mutually exclusive, since they cover all SMEs with either exports or a foreign supplier.) As mentioned, a small domestic market can induce SMEs to internationalize earlier than those with larger domestic markets. It is clear that SMEs in small countries tend to have more foreign suppliers than SMEs in large countries. SMEs in central European countries with many directly neighboring countries have also been found to import more. Among large European countries, Germany has the strongest export-orientation of SMEs. Australian SMEs perform poorly compared to those in the smaller EU countries, raising the question of what the EU is doing differently from Australia in terms of exporting activities.

In the extant literature there seems to be a perception that exporting is the easiest and minimalist entry mode for internationalization. If this is so, then why are Australian SMEs exporting poorly compared to the rest of the OECD countries? This may explain Bonoma and Clark’s (1988, p. 1) comment that ‘perhaps no other concept in marketing’s short history has proven as stubbornly resistant to conceptualization, definition, or application’. The review of extant literature in entrepreneurship and internationalization contributed to the development of the conceptual framework that guides this research, as described in the next section.

2.6 Conceptual Model

From the extant literature, a conceptual model has been developed for this research comprising five elements: (1) international entrepreneurial opportunity process, (2) founder/manager characteristics, (3) firm characteristics, (4) firm capabilities, and (5) external environment. The conceptual model draws together entrepreneurship and internationalization perspectives reviewed through an entrepreneurial theoretical framework. Figure 2.19 depicts a model for a holistic process of entrepreneurial internationalization activities of opportunity recognition and exploitation, new venture creation and internationalization. Therefore, entrepreneurs’ through an entrepreneurial theoretical perspective need the ability to see opportunities in a holistic way from opportunity recognition and exploitation to start-up of a new business and then grow the business through internationalization, innovation and adaptation to create wealth (Eisenhardt & Martin 2000; McDougall & Oviatt 2005; Timmons & Spinelli 2009). The five elements are discussed in the next section.
2.6.1 International Entrepreneurial Opportunity Process

The process of entrepreneurial internationalization in the conceptual model begins with a potential international entrepreneurial opportunity that involves interaction with the entrepreneurial actor. The entrepreneurial actor recognizes an opportunity and then acts to exploit the opportunity by starting an international new venture to introduce new products, services or processes (Schumpeter 1934; Shane & Venkataraman 2000; Oviatt, Shrader & McDougall 2004; Evangelista 2005). The founder/manager discovers or exploits an opportunity in the international marketplace due to their background which enables rapid internationalization bypassing the domestic market and gains higher growth from overseas markets. The background and the entrepreneurial behavior of the founder/manager influence the recognition and exploitation of international opportunities.

2.6.2 Founder/Manager Characteristics

The founder/manager profile is characterized by technical and industry experience, international experience, international networks and having entrepreneurial intentions and a propensity for risk-taking.
**Background of founder/manager**

The born-globals are founded by highly entrepreneurial owners, managers or management teams. In general they have developed some form of specialized knowledge; this may be in technology such as information technology, software development or internetworking. Their specialized knowledge and international experience enable them to create unique products, services or processes (Shane 2000; Evangelista 2005; Chandra, Styles & Wilkinson 2009). In terms of technical experience developing a new venture’s first product is important to rapid international entry. Similarly, contacts such as service providers, clients and previous technical experience provide the knowledge required to develop the firm’s first product, service or process. Contacts gained from international experience enable the exploitation of opportunities in niche markets and within international networks (Evangelista 2005; Oviatt & McDougall 2005). International experience is a source of prior knowledge that helps founder/managers identify international opportunities, which gives them the confidence to exploit the opportunities identified.

**Entrepreneurial Behavior**

The entrepreneurial internationalization process is argued to be driven by entrepreneurial owners or managers. The international new venture is founded by entrepreneurial founders or managers or management teams who actively seek opportunities and have the intention to start a new venture (Evangelista 2005). Potential entrepreneurs demonstrate some indications of long time interest and desire to start their own business which may occur from unplanned events or planned opportunity recognition. Entrepreneurial founders or managers perceive that taking risks when exploiting international opportunities achieves firm performance (Oviatt, Shrade & McDougall 2004; Oviatt & McDougall 2005). Timmons et al. (1987) stated that creation and/or recognition of opportunities lie at the heart of the entrepreneurial process, followed by the will and initiative to seize opportunities, taking calculated risks for potential reward (Timmons & Spinelli 2009). As Madsen and Servais (1997) suggested, ‘international experience is a key necessary condition for their international expansion, but it also creates the motivation and ambition to become born global’.

**2.6.3 Firm Characteristics**

Rennie (1993) was the first to establish the term ‘born global’. In his pioneering investigation, Rennie (1993) found numerous small and medium sized firms in Australia that internationalized their operations at or near founding. An international new venture (born
global firm) is defined in this study, ‘as one that has achieved a high level of sales from foreign markets and has made considerable foreign commitments in terms of sales efforts and other investments within a conventionally accepted short period after formation’ (Evangelista 2005, p. 186). The firm profile is characterized by an entrepreneurial management team, implementing international strategies, and measuring firm performance by age, export sales and country scope.

**International new venture (Born-global)**

International new ventures begin with an international view of their markets gained from previous international experience. The importance of the founder or entrepreneurial team in creating and growing new ventures is widely acknowledged (Shook, Priem & McGee 2003). The founder or team that discovers or activates an opportunity is central to the dynamics of international exploitation, technical/industry experience, international experience and international networks are among the characteristics that stand out as important in the entrepreneurial internationalization process. During the founding stage of the international new venture, management teams commit to more financial and human resources to develop the capabilities needed to execute international strategies and achieve international goals (Guillén 2003; Cateora et al. 2009; Pride & Ferrell 2010; Rix 2011). Internationalization demands an active, committed and entrepreneurial management team. Whether the traditional approach, the born-global approach or an approach that merges the attributes of both approaches is adopted to market a firm’s products and services, international marketing strategy is a critical element of the firm’s global operations.

**Firm Performance**

As international new ventures enter international markets within a short time-frame from start-up, the scope of the firm’s internationalization is measured by age, exports as a proportion of total sales and the number of countries penetrated during internationalization (Oviatt & McDougall 2005; Pla-Barber & Escriba-Esteve 2006; Cateora et al. 2009). Born-globals enter their market shortly after their inception and therefore traditional measures of firm performance are not appropriate to capture their performance; accelerated internationalization is the most appropriate measure of their performance. This includes the speed to first international activity (e.g., exporting and sourcing), the quantity of exports as a percentage of total revenue and the scope of the firm’s internationalization measured as the number of countries entered with exports. As we have seen, these dimensions reveal different facets of the process of internationalization. This composite index could provide a good
indicator of the degree of internationalization of the firm, as each variable reflects a different dimension of the commitment to foreign markets (Pla-Barber & Escriba-Esteve 2006).

2.6.4 Firm Capabilities

Dess, Lumpkin and Eisner (2007, p. 92) stated that ‘firm capabilities include all assets, capabilities, organizational processes, information, knowledge, and so forth, controlled by a firm that enable it to develop and implement value-creating strategies’. The firm capabilities profile is characterized by firm processes, networking capability, marketing capability and ICT capability.

The knowledge intensity of the opportunity and the international networks of the entrepreneurial actor enable faster entry to markets (Oviatt & McDougall 2005). These firms internationalize faster because they usually hold a competitive advantage that can be exploited in multiple countries through innovative marketing strategies (Weerawardena et al. 2007). ICT has made internationalization quicker through faster communication and delivery of digital products over the internet (Knight & Cavusgil 2004; Loane 2006).

Processes

Entrepreneurial knowledge-intensive firms use complex knowledge to design a new product or to implement more efficient service delivery or an improved production method (Evangelista 2005). Effective product development processes involve routines that ensure that concrete and joint experiences among team members, such as working together to fix specific problems or participating in brainstorming sessions, occur. Such experiences enhance innovation by breaking down the thought worlds that exist because people with different expertise not only know different things, but also know those things differently.

Capabilities

Dynamic networking capabilities enable born-globals to minimize the risks associated with global market entry decisions. A networking activity must take the form of a competitive capability complemented by entrepreneurial opportunity-seeking behavior (Mort & Weerawardena 2006). Born-global firms possess fewer financial resources and are frequently dependent on a single product during rapid internationalization. These firms often seek partners who complement their own competencies in international markets. Networks are vital to the discovery of opportunities, to the testing of ideas and to the garnering of resources for the formation of the new organizational structure. Networks are often critical in providing the
type of information that contributes to reducing the risk and uncertainty inherent in international operations, and they facilitate the acquisition of knowledge and the development of complementary resources such as marketing.

Marketing capability is the result of an integrative process designed to apply the collective knowledge, skills and resources of the firm to the market-related needs of the business (Day 1994). Marketing capability captures the firm’s capacity to formulate effective marketing strategies that are critical to identify and access international opportunities. The previous experience of the firm, a key component of the born-global firm profile, provides the ability to position products in predominantly niche markets to conform to the needs of the niche market, to communicate the credibility of the firm and its offerings, to find appropriate distribution options and to price appropriately for the value of the product in its market. Marketing capabilities in today’s digital age are complemented by ICT and e-commerce.

Foley and Ram (2002) developed the publicize, interact and transform (PIT) model to provide a view of e-business adoption. The model has two elements: firstly, the functions that ICT can be used for, such as publicizing product details on the web, interacting with customers for feedback, and transforming business activities by allowing customers to specify delivery times; and secondly, the business activities it can be applied to, such as logistics and delivery, finance, purchasing and procurement, operations, marketing and sales, and after-sales service.

Born-globals develop highly innovative, knowledge-intensive products, both goods and services that enable positional advantages in global markets. In order to survive and prosper, born-globals must remain at the cutting edge of the developments in their product market niche. Knowledge-intensive products are those embedded with high knowledge content through innovation and personal creativity, cutting-edge product design, technological know-how and in-depth understanding of the market. These highly innovative, knowledge-intensive products enable born-globals to gain positional advantages in global markets.

2.6.5 External Environment

Entrepreneurship is an environmentally driven phenomenon (Morris & Lewis 1995). The influencing factors of internationalization are global opportunities, government support, international market knowledge and technology. However, a hostile home market is known to impede internationalization.

Internationalization has provided new growth opportunities in global markets. External environments present more opportunities in international markets (Barney 1991; Grant 1991).
Global ICT opportunities in the future exist for innovative entrepreneurs, where demand is increasing for ICT products and services globally, with the global market valued at US$3.8 trillion in 2010 (EITO 2008). Governments have recognized the importance of assisting SMEs in internationalization, and have provided a range of support activities through state-funded export credit and promotion agencies. International marketing knowledge facilitates knowledge of customers, product development and the adaptation of key marketing tactics to target foreign customers with good quality, differentiated goods (Knight & Cavusgil 2004). Trends in ICT have made internationalization easier for SMEs. The widespread diffusion of ICT has made internationalization a more viable and cost-effective option for entrepreneurial firms (Knight & Cavusgil 2004).

Globalization and the internet have made ICT markets turbulent and unpredictable. Hostile environments are characterized by ‘precarious industry settings, intense competition, harsh, overwhelming business climates and the relative lack of exploitable opportunities’ (Covin & Slevin 1989, p. 75). The small domestic ICT market and large international ICT markets such as the USA and EU have acted as the “push” and “pull” factors respectively creating intense competition among domestic producers and lack of support from government in funding ICT innovation.

2.7 Summary

To place this research into context, the literature review explored the areas of entrepreneurship, international entrepreneurship and internationalization, the resource-based view of the firm and international entrepreneurship. Entrepreneurial internationalization through an entrepreneurial perspective was also discussed. This is a complex phenomenon that would benefit from a qualitative study to explain and advance theory.

The field of international entrepreneurship evolved from McDougall’s (1989) study comparing domestic and international new ventures and providing an early definition of the term ‘international entrepreneurship’ (IE), which focused on new ventures that engaged in international business. However, studies that followed challenged extant theory in international business by explaining the formation of international new ventures mainly by research into multi-national enterprises (McDougall, Shane & Oviatt 1994). Further studies in IE came to a crossroad termed ‘the intersection of international business and entrepreneurship’ (McDougall & Oviatt 2000).
Research in IE has mainly focused on new patterns and timing of SME internationalization (Johansson & Mattson 1988; Coviello & Munro 1997; Rennie 1993), without reference to entrepreneurship theory through an entrepreneurial theoretical lens (Coviello et al 2011; Jones et al. 2011). Attempts at combining entrepreneurship theory have included entrepreneurial orientation to determine the entrepreneurial behavior of firms (McDougall & Oviatt 2000; Knight & Cavusgil 2004). Currently IE is defined as ‘the discovery, enactment, evaluation, and exploitation of opportunities – across national borders – to create future goods and services’ (Oviatt & McDougall 2005, p. 540). Oviatt and McDougall (2005) incorporated Shane and Venkataraman’s (2000, p. 218) ‘study of discovery, evaluation, and exploitation of opportunities’. Thus IE has so far been explained through an international business theoretical lens.

Several recent reviews have critiqued IE research as a field of inquiry. Gamboa and Brouthers (2008, p.555) stated that IE research is replicating international business studies ‘by substituting smaller/newer firms for larger ones’. Keupp and Gassman (2009) argued that IE research lacks theoretical insights and precludes efforts to advance generalizable IE theory. Coombs, Sadrieh and Annarvajula (2009, p.31) expressed that ‘a theoretical paucity summarizes the present state of research in IE’ and recommended qualitative studies to advance theory. It is interesting that these reviews and critique come from international business researchers and that entrepreneurship researchers have mainly focused on domestic entrepreneurship and new venture creation (Gaglio & Winter 2009).

In response to previous reviews, several researchers have acknowledged the gaps in IE research. Jones, Coviello and Tang (2011) identified three major areas of IE research: (1) entrepreneurial internationalization, (2) international comparisons of entrepreneurship and (3) international comparisons of entrepreneurial internationalization. The main gap in IE research is the scarcity of entrepreneurship (activities such as opportunity recognition and exploitation, and linking opportunity recognition processes to venture type) as the primary theme (Coviello, McDougall & Oviatt 2011; Jones, Coviello & Tang 2011). The aim of this study is to investigate the process of entrepreneurial internationalization activities explained in a holistic way from opportunity recognition and exploitation to start-up of a new business and then growing the business through internationalization.
3.1 Introduction

The topic of this research is the entrepreneurial internationalization activities in the Australian information and communications technology (ICT) small to medium enterprises (SMEs) sector. The research is further focused on international opportunity recognition and exploitation, and internationalization activities.

The previous chapter concluded with a research question and issues developed through a review of the extant literature. This chapter outlines the methodology used in the research, namely, case studies, and justifies the choice of this particular methodology. It gives details of the research procedures and instruments used and their limitations. It also discusses the unit of analysis, ethical considerations, and validity and reliability issues. The aim of this chapter is to present a research methodology that will collect data that will reliably confirm or contradict the theories discussed in Chapter 2.

3.2 Research Aim

Research Aim

To investigate the entrepreneurial internationalization activities of Australian ICT SMEs examined through an entrepreneurial theoretical framework.

Research Problem

How do Australian ICT SMEs recognize and exploit international opportunities and internationalize their business?

The review of extant literature covering these topics in Chapter 2 allowed the development of a theoretical model linking entrepreneurship and internationalization. This model is used to guide the study. The literature review and model have led to the development of the following research questions.

Research Questions

- RQ 1: How do Australian ICT SMEs recognize and exploit international opportunities?
- RQ 2: How do international opportunities influence Australian ICT SMEs internationalization?
  - RQ 2.1: How do firm characteristics influence internationalization?
  - RQ 2.2: How do firm capabilities influence internationalization?
  - RQ 2.3: How does the external environment influence or impede internationalization?

3.3 Research Paradigm

This research project uses both inductive and deductive approaches to build a useful representation of the underlying components that are associated with international entrepreneurship (Gilbert 2007). Quantitative results from the Business Longitudinal Survey (Pink & Jamieson 2000) informed and directed the development of the qualitative case study analysis to enable a more comprehensive understanding of Australian international entrepreneurship.

In research, the term ‘paradigm’ refers to the philosophies and beliefs that provide guidelines and principles in relation to how research is conducted (Guba & Lincoln 1994; Hussey & Hussey 1997; Ticehurst & Veal 1999). A research paradigm is a framework of assumptions that guide researchers in their work (Healy & Perry 2000). Research paradigms include positivism, realism, critical theory and constructivism (Perry, Riege & Brown 1999; Healy & Perry 2000); positivist and critical interpretive (Ticehurst & Veal 1999); and positivist and phenomenological (Hussey & Hussey 1997). Although there is much debate among scholars regarding which paradigm is ‘best’, it is perhaps more useful to regard the alternatives as points on a continuum, with a paradigm and associated methodologies being chosen because they best suit the task at hand (Hussey & Hussey 1997; Ticehurst & Veal 1999; Gummesson 2003). Table 3.1 summarizes the key features of the two paradigms considered for this research: positivist and phenomenological.

Phenomenological research is also referred to as interpretive (Hussey & Hussey 1997) or critical interpretive (Ticehurst & Veal 1999), while Gummesson’s (2003) view is that all research is interpretive. He states that words and numbers both require interpretation: ‘statistical tables need interpretation just as badly as data from in-depth interviews and focus groups’ (p. 486). Associated with these statements, Gummesson (2003) believes that hermeneutics, as a general methodology for interpretation, is required for all research, taking
it through an upward spiral of pre-understanding through interpretation to understanding. This spiral is a cycle with the end of one cycle feeding into another, so that understanding from one cycle becomes pre-understanding for the next and so on until the explanation stage is reached. This approach was adopted for this research.

Table 3.1: Features of the two main paradigms

<table>
<thead>
<tr>
<th>Positivistic Paradigm</th>
<th>Phenomenological Paradigm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tends to produce quantitative data.</td>
<td>Tends to produce qualitative data.</td>
</tr>
<tr>
<td>Uses large samples.</td>
<td>Uses small samples.</td>
</tr>
<tr>
<td>Concerned with hypothesis testing.</td>
<td>Concerned with generating theories.</td>
</tr>
<tr>
<td>Data is highly specific and precise.</td>
<td>Data is rich and subjective.</td>
</tr>
<tr>
<td>The location is artificial.</td>
<td>The location is natural.</td>
</tr>
<tr>
<td>Reliability is high.</td>
<td>Reliability is low.</td>
</tr>
<tr>
<td>Validity is low.</td>
<td>Validity is high.</td>
</tr>
<tr>
<td>Generalizes from sample to population.</td>
<td>Generalizes from one setting to another.</td>
</tr>
</tbody>
</table>

Source: (Hussey & Hussey 1997, p. 54)

3.3.1 Which Paradigm?

First and foremost, effective research requires the selection of an appropriate research paradigm suitable for the issues being studied. The question of methods is secondary to the question of paradigms, which guide the investigator not only in choice of methods but in fundamental ontology and epistemology (Guba & Lincoln 1994, p. 105). Hence, the underlying paradigm of a study plays a fundamental role as it outlines the researcher’s view of the world, what he or she considers as real and the degree to which this reality can be understood, as well as guiding the selection of the most appropriate research methods to obtain further knowledge and understanding of reality.

Research paradigms have three elements that assist with distinguishing between them. They are: ontology, the ‘reality’ that researchers investigate; epistemology, the relationship between reality and the researcher; and methodology, the technique used to discover reality (Healy & Perry 2000, p. 119). These elements can be used to assess the appropriateness of a paradigm...
for a particular research problem, and as criteria for judging quality in research (Healy & Perry 2000).

The literature review presented in Chapter 2 indicated that there has been limited research on entrepreneurial internationalization. The majority of the research published in the internationalization domain is based upon the positivist research paradigm, as evidenced by the preference for hypothesis testing using large sample, quantitative research designs (Zou & Stan 1998; Fillis 2001). This paradigm holds that social and physical reality is real, is not random but is patterned and ordered by stable, observable laws that are waiting to be discovered (ontological assumption). Humans are assumed to be rational, selfinterested individuals whose behavior is determined by these observable laws. Empirical data can be measured accurately and precisely, and is independent of the researcher’s own ideas, thoughts and biases (epistemological assumption). According to positivism, the purpose of science is to further knowledge by discovering these laws through value-free logical deduction, expressed using ‘formal symbolic systems, with axioms, corollaries, postulates, and theorems [methodological assumptions]’ (Neuman 2000, p. 68). Hence, the nature of this research was initially exploratory and theory-building (Hussey & Hussey 1997; Perry, Riege & Brown 1999; Ticehurst & Veal 1999; Perry 2001). In line with Gummesson’s (2003) approach to hermeneutics, the research is also explanatory (Yin 2003), in that as the research progressed through each stage, it included a reflective period after data was collected (Eisenhardt 1989; van Aken 2004). This approach is explained in more detail in section 3.5.

Possible research methods were considered when choosing a suitable paradigm. Table 3.2 provides a comparison of the characteristics of quantitative and qualitative research.

The options summarized in Tables 3.1 and 3.2 were considered, and the paradigm chosen for this research was phenomenological or critical interpretive. This was selected for three key reasons:

1. the existence of a relatively small sample population from which to gather data;
2. the lack of quantitatively testable hypotheses due to the early pre-paradigmatic stage of the development of international entrepreneurship as a discipline (Perry 1998); and
3. the richness of the data to be collected. 
Table 3.2: A comparison between quantitative and qualitative research

<table>
<thead>
<tr>
<th><strong>Quantitative Research</strong></th>
<th><strong>Qualitative Research</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Research problem:</td>
<td>Research problem:</td>
</tr>
<tr>
<td>Who (how many)?</td>
<td>How?</td>
</tr>
<tr>
<td>What (how much)?</td>
<td>Why?</td>
</tr>
<tr>
<td>Literature review:</td>
<td>Literature review:</td>
</tr>
<tr>
<td>Explanatory – what are the relationships between the variables which have been previously identified and measured?</td>
<td>Exploratory – what are the variables involved? constructs are messy</td>
</tr>
<tr>
<td>Hypotheses are developed</td>
<td>Research questions are developed</td>
</tr>
<tr>
<td>Paradigm:</td>
<td>Paradigm:</td>
</tr>
<tr>
<td>positivist</td>
<td>critical realism/interpretive</td>
</tr>
<tr>
<td>Ontology:</td>
<td>Ontology:</td>
</tr>
<tr>
<td>reality is real and apprehensible</td>
<td>reality is ‘real’ but only imperfectly and probabilistically apprehensible</td>
</tr>
<tr>
<td>Epistemology:</td>
<td>Epistemology:</td>
</tr>
<tr>
<td>possible to obtain hard, secure objective knowledge</td>
<td>understood through ‘perceived’ knowledge</td>
</tr>
<tr>
<td>Objectivist: findings true</td>
<td>Modified objectivist: findings probably true</td>
</tr>
<tr>
<td>Methodology:</td>
<td>Methodology:</td>
</tr>
<tr>
<td>concentrates on description and explanation</td>
<td>concentrates on understanding and interpretation</td>
</tr>
<tr>
<td>examples: survey or experiment</td>
<td>examples: case study research or action research</td>
</tr>
<tr>
<td>Researcher’s Role:</td>
<td>Researcher’s Role:</td>
</tr>
<tr>
<td>detached, external observer</td>
<td>experiences what they are studying</td>
</tr>
</tbody>
</table>

Source: Adapted from (Healy & Perry 2000; Carson et al. 2001; Perry 2002)

As outlined in Chapter 2, one of the research questions of this study involves the examination of the entrepreneurial international activities of Australian ICT SMEs such as how they recognize and exploit opportunities and their ability to configure firm resources to develop globally relevant competencies. These are issues that are not easily understood through quantitative analysis. Coviello and Munro (1997) argued that future research should investigate how and with whom relationships are developed, and what network management
skills are required over time. With regard to a firm’s capabilities, Rouse and Daellenbach (1999) argued that firm-specific resources and capabilities are often intangible and not obvious to the outside observer, and therefore are best researched qualitatively from within the firm (i.e., case studies) rather than through quantitative analysis. ‘To untangle the nature and sources of such competencies requires going inside the black box of organizations’ (Rouse & Daellenbach 2002, p. 964). In order to further advance our knowledge and understanding of new ventures in entrepreneurial international activities, the phenomenological paradigm is adopted.

Due to the lack of research into entrepreneurial internationalization in the Australia ICT industry, the research is exploratory and theory building. A theoretical model has been induced from the literature reviewed. The task for the remainder of the research project was to use the model as the basis for questions designed to collect further data (Ticehurst & Veal 1999). As depicted in Figure 3.1, the approach was to continuously compare the data collected against the theory in order to test and refine both the theory and the model (Eisenhardt 1989). In this way, the research went through a cycle of observation – induction – theory building – observation – deduction – theory testing (Perry 1998; Ticehurst & Veal 1999; Gummesson 2003) via data collection and analysis. The intent was to use an exploratory approach, which was progressively refined and analyzed to form an explanatory approach (Eisenhardt 1989; Parkhe 1993; Yin 2003).

Figure 3.1: Exploratory and confirmatory research

Source: Adapted from Carson et al. (2001, p. 97)
A phenomenological paradigm was selected for this research due to the exploratory nature of the research. The objective was to describe real-world practice, using the data collected to refine the theoretical model. The section that follows examines the possible methodologies available with this paradigm. The purpose of this study is to further knowledge and understanding of international entrepreneurship. The aim of this thesis is to identify and analyze the international entrepreneurial activities of Australian ICT SMEs.

### 3.4 Justification of Case Study Research Methodology

A research methodology is a technique used to ‘discover reality’ (Perry, Riege & Brown 1999). However, the methodology must suit the problem under investigation. This section provides justification for the chosen methodology and discusses the reasoning for the choice.

#### 3.4.1 Research Method Selection

Yin (2003) provides a useful summary of research methods or strategies: experiment, survey, archival analysis, history and case study. To aid the selection of the correct method, Yin presents three conditions that expose the characteristics and suitability of the methods for various situations. Table 3.3 shows five strategies and three conditions.

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Form of research question</th>
<th>Requires control over behavioral events?</th>
<th>Focuses on contemporary events?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiment</td>
<td>how, why</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Survey</td>
<td>who, what, where, how many, how much</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td>Archival analysis</td>
<td>who, what, where, how many, how much</td>
<td>no</td>
<td>yes/no</td>
</tr>
<tr>
<td>History</td>
<td>how, why</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>Case study</td>
<td>how, why</td>
<td>no</td>
<td>yes</td>
</tr>
</tbody>
</table>

Source: Yin (2003, p. 7)
The application of Yin’s criteria to this research is presented in Table 3.4.

### Table 3.4: Application of Yin’s criteria to this research

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Form of research question</th>
<th>Requires control over behavioral events?</th>
<th>Focuses on contemporary events?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiment</td>
<td>✓</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Survey</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Archival analysis</td>
<td>✗</td>
<td>✓</td>
<td>✗</td>
</tr>
<tr>
<td>History</td>
<td>✓</td>
<td>✓</td>
<td>✗</td>
</tr>
<tr>
<td>Case study</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Source: Adapted from (Yin 2003, p. 5)

**Experiment:** Control over behavior and events would not be practical nor would it be desirable, as this research is attempting to discover how export activities are practiced (Patton & Appelbaum 2003).

**Survey:** The form of the questions developed for this research does not lend itself to quantitative analysis. The ‘how’ used in surveys means ‘how many’ or ‘how much’, which is not the meaning in the research questions.

**Archival analysis:** As international entrepreneurship is a relatively new activity, the body of research is not sufficiently extensive to support detailed and valid analysis.

**History:** As with archival analysis, a historical perspective on international entrepreneurship is not available.

**Case Study:** This research does not require control over behavior; it is focused on contemporary events and the research questions are ‘how’ and ‘why’ questions.

Taking into account the theory-building nature of this research, the research questions developed from the literature, the application of the criteria shown in the above tables, and a review of Table 3.4, case study research was selected as an appropriate methodology for this research.
3.4.2 What is Case Study Research?

Case studies are widely used as a teaching device for education in management and marketing (Perry 2001; Rosier 2002). This method of adult education, called the ‘case method’, involves the description of a scenario that is used for reflection and discussion (Rosier 2002). Case studies in a different form are frequently used for management research (Perry 2001; Rowley 2002; Patton & Appelbaum 2003; Yin 2003), despite having been accused of lacking the rigour and objectivity of the quantitative approach (Rowley 2002; Patton & Appelbaum 2003), an accusation refuted by many scholars (Eisenhardt 1989; Parkhe 1993; Perry 1998; Perry, Riege & Brown 1999; Perry 2001; Rowley 2002; Patton & Appelbaum 2003; Yin 2003).

Case study research can be characterized by:

- an analytic approach to generalization;
- theory informs propositions, and propositions inform data collection and analysis; and
- ‘the researcher acts as a commentator, in representing and interpreting the case in a way that relates to previous theory’ (Rowley 2004, pp. 212-3).

Case study research or case-based research is an exploratory technique where a situation similar to the researcher’s problem is investigated (Zikmund 2000). Its aim is to understand a phenomenon by studying one or more cases, some of which may be contrasting (Ticehurst & Veal 1999).

Case research is defined by Perry (2001, p. 305) as:

- an investigation of a contemporary, dynamic phenomenon and its emerging (rather than paradigmatic) body of knowledge;
- being within the phenomenon’s real-life context where the boundaries between the phenomenon and context under investigation are unclear;
- used when the explanation of causal links are too complex for survey or experimental methods, so that single clear outcomes are not possible; and
- using interviews, observation and other multiple sources of data.

Some proponents of case studies use different terminology. For example, Eisenhardt refers to case study as ‘a research strategy’ (1989, p. 534). Patton and Applebaum (2003, p. 60) and
Yin (2003, p. 1) refer to case study as ‘a research track’. Case studies can combine data collection methods such as archival searches, interviews, questionnaires, surveys and observation (Eisenhardt 1989). Furthermore, they use data analysis methods from other methodologies and often combine them, for example, grounded theory’s coding process; frequency counts and sequence analysis for longitudinal data; and statistical analysis for quantitative data (Eisenhardt 1989).

### 3.4.3 When and Why Should Case Study Research Be Used?

There has been very little research into the relationship between international business and entrepreneurship, and the boundary of international entrepreneurship is not well defined. At this stage of understanding, international entrepreneurship is not ideally suited to research methods such as experiments or statistical surveys (Fillis 2001). Such approaches could only result in precise answers to imprecise questions (Parkhe 1993). Research in the social sciences struggles with an inability and reluctance to control variables and the interaction between variables, the meaning of actions and the fickleness of human behavior – problems that the natural sciences have solved or have not had to deal with (Parkhe 1993). As Evangelista (2005) reported, since ICT environments are hostile and turbulent, it would appear that case study research is best suited to this research. As previously mentioned, the interaction between the two management disciplines of international business and entrepreneurship is not well understood ‘and existing theory seems inadequate’ (Eisenhardt 1989, p. 589). To improve the understanding of these contemporary phenomena, investigation is best performed in its real-life context (Audet & d'Amboise 2001; Yin 2003, p. 13).

Yin (2003) believes that case studies or case research is appropriate for situations that are contemporary, dynamic, do not have clear boundaries and have multiple sources of evidence. The understanding and application of internationalization varies within governments, SMEs and agencies. Furthermore, as the acceptance and understanding of what constitutes international entrepreneurship varies widely among scholars, there will also be variation among practitioners. From this position it was felt that the nature of the research would be exploratory, qualitative and theory building (Perry, Riege & Brown 1999; Carson et al. 2001; Perry 2001). Yin (2003, pp. 5-9) states that the time to use a case study is when ‘a ‘how’ or ‘why’ question is asked about a contemporary set of events over which the investigator has little or no control’. This applies to the research problem and both the research questions.
3.4.4 Advantages of Case Study Research

When applied to an appropriate problem, there are many advantages to case study research. Firstly, case studies provide access to multiple viewpoints (Harrigan 1983), allowing in-depth analysis of all or part of an organization and focusing on and studying events in sequence (Zikmund 2000) to gain an understanding of a phenomenon (Perry, Riege & Brown 1999). Secondly, case studies are appropriate where multiple sources of data are used—for example, interviews, observation, documents and organizational publications (Rowley 2002; Gummesson 2003; Yin 2003) – providing richness of data not available from mail surveys or secondary data (Harrigan 1983; Parkhe 1993). Case studies are thus suitable for research into contemporary, complex and dynamic phenomena (Perry 2001; Yin 2003). Thirdly, case studies support theory building where phenomena are not well understood (Perry, Riege & Brown 1999; Gummesson 2003); and with the appropriate rigor applied to the research design and analysis, case research is both valid and reliable (Perry, Riege & Brown 1999; Patton & Appelbaum 2003; Yin 2003).

3.4.5 Limitations of Case Study Research

There are a number of limitations or disadvantages to case study research. Table 3.5 lists some of the limitations along with tactics designed to mitigate the limitations.

Research into international entrepreneurship is faced with a nascent discipline that is subject to a wide range of interpretations, definitions and practices. It has advocates for either a purely technical solution or a people-based solution and all shades between. Researching two areas of international business and entrepreneurship requires a methodology suited to capturing and accommodating very rich data. After consideration of the advantages and disadvantages of case study research, the researcher believed that case study research would be the most appropriate method for this research, and is well suited to satisfy the requirements of the research due to its capacity to accommodate these rich fields (Harrigan 1983) and build a theoretical framework (Carson et al. 2001).

<table>
<thead>
<tr>
<th>Limitation</th>
<th>Tactics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can at times be superficial (Eisenhardt 1989; Parkhe 1993).</td>
<td>Research continues until saturation is reached (Eisenhardt 1989).</td>
</tr>
<tr>
<td>Can be too flexible for novice researchers in the inductive stage (Perry 2001).</td>
<td>Use of expert panel to review research protocol and data encoding.</td>
</tr>
</tbody>
</table>
Can be used to generate hypotheses but not test them (Harrigan 1983; Perry 2001).
Due to the pre-paradigmatic stage of international entrepreneurship, this research is theory building not theory testing (Carson et al. 2001).

Case studies can lead to overly complex theories, due to the large volumes of data collected (Eisenhardt 1989; Parkhe 1993).
The scope of this research has been very finely focused (Perry 2001).

Interviewees can have problems within accurate recall, and poor or in accurate articulation (Yin 2003).
The use of multiple sources of data (triangulation) and multiple interviews mitigates this limitation (Yin 2003).

Poorly designed case study research can lack rigor and generalizability (Harrigan 1983).
Rigor was ensured through systematic review of the research design, with revisions made as required. The goal of case study research is analytical generalization, not statistical generalization (Yin 2003).

Qualitative research such as case study can be highly subjective and difficult to replicate outside the cases studied (Harrigan 1983).
Case selection on the basis of proving similar results (literal replication) and contrary results (theoretical replication) (Yin 2003).

Requires permission and cooperation from the participants (Harrigan 1983; Zikmund 2000).
Permission to engage cases was sought and granted; ethics approval was granted.

The researcher may be too close to or part of the problem, resulting in bias (Parkhe 1993).
The researcher does not and has not worked for the organizations or industry studied.

### 3.5 Case Selection

This section describes the number of cases, the industry under analysis, how participant organizations were selected, the number of interviews and the interview protocol.

#### 3.5.1 Number of cases

Two of the dimensions of case research are depth and breadth, with depth being the number of interviews per case or the amount of time spent on a case, and breadth being the number of cases (Eisenhardt 1989, 1991). Eisenhardt advocates greater breadth of research through multiple cases, where possible, while Dyer and Wilkins (1991, p. 613), with what they term the ‘classic case study approach’, advocate greater depth through a single case, focusing on telling a complete, complex and clear story. A single case would simplify the research; however, the requirements to support a single case are not evident such as:

- the case must be a critical one for extending, challenging or confirming theory;
- the case is rare or extreme;
Furthermore, the extended period required to gather the data from a single case was not practical for this research (Barnes 2001). Multiple cases yield more persuasive evidence (Amaratunga & Baldry 2001) and provide the opportunity for cross-case analysis and the comparison of patterns found in cases (Yin 2003). Perry (2001) advises a minimum of two to four cases and a maximum of 12 to 15 cases. Eisenhardt (1989) gives a range of four to ten, saying that fewer than four can make it difficult to generate theory, and more than ten can result in excessive complexity of data (Audet & d'Amboise 2001). Data collection continued for eight cases and were studied and analyzed until theoretical saturation was reached (Eisenhardt 1989).

### 3.5.2 Unit of Analysis

For this research, the top-level unit of analysis is the Australian ICT SME sector, with the lower-level unit of analysis being the firm. In this way, each firm is a component of a single case. Through the participation of industry experts and government consultants from Austrade, the researcher was also able to test the surveys to be used in the interviews. This was done to validate the conceptual model and to gain an external perspective on Australian ICT SMEs. Multiple cases present the opportunity for cross comparison and triangulation of results, with the benefits of validity and reliability of the outcomes (Perry, Riege & Brown 1999).

### 3.5.3 Case Sampling

As theory-building research, case study research incorporates ideas from outside the case itself, that is, cases are selected to provide insight into the research problem, not the reverse (Perry 2001). With case research, purposeful sampling of cases is recommended to maximize what can be learnt by the research (Audet & d'Amboise 2001). Generalization of results is applied to theory, not to populations; that is, case selection is based on replication logic, not statistics (Audet & d'Amboise 2001). Each case should be selected to enable literal replication or disparate results, to produce theoretical replication (Eisenhardt 1989).

An international new venture (born global firm) is defined in this study, as one that has achieved a high level of sales from foreign markets and has made considerable foreign commitments in terms of sales efforts and other investments within a conventionally accepted
short period after formation (Evangelista 2005). The sample firms selected became involved with internationalization within one to two years from the time they were established. The export sales of those companies that were already exporting at the time, ranged from 15% to 100% of total company sales. The sample selection procedure consisted of first, searching the Austrade exporters’ database list. This was followed by a visit to industry experts at Austrade and REDCentre who have helped ICT SMEs export and enabled access to the founders/managers of the sample firms. This event provided the opportunity for the researcher to personally make initial contact with the founders/managers themselves, as well as to gain valuable background industry knowledge. Subsequently, a formal request for an interview was sent by email to the sample firms founders/managers.

3.5.4 Interview Protocol

The review of the literature was used as the basis for formulating the interviews. As data analysis was ongoing throughout the project, following each case and its data analysis, the theory, theoretical model and interview questions were reviewed and revised (Eisenhardt 1989; Gummesson 2003; van Aken 2004). This process is similar to Gummesson’s (2003) hermeneutic spiral process and van Aken’s (2004) reflective cycle, and is used to improve or sharpen theory and constructs (Eisenhardt 1989). In this way, each series of interviews was used for confirming or disconfirming prior theory and to revise the case study design (Perry 2001).

Personal interviews have a number of advantages. They allow the interviewee to tell their story; they provide instant feedback; they enable the use of probe questions; they reduce the likelihood of incomplete questionnaires; and they allow the use of props and visual aids (Zikmund 2000; Perry 2001). An in-depth interview is an unstructured and free-flowing interview, generally with one person, designed to probe more deeply into an issue than is possible with a survey (Ticehurst & Veal 1999). The interview questions contained some open questions, followed by more specific questions combined with probe questions (Perry 2001). The survey was sent to participants prior to interview, to allow them time to consider the questions. The interview focused on the survey questions and allowed the interviewee to add comments or comment on other issues that arose from the survey.
3.6  Case Study Design and Procedure

The main objective of the research design was to link the research objectives to the data to be collected, the questions used to collect that data and the conclusions drawn from the data (Bryman 2008).

This section describes the approach used to gather the required data and explains why this approach has been used.

The survey was distributed to participants prior to the interviews, and served as a basis for the discussion. It could also serve as a prototype for a more extensive survey to be conducted after this research project.

3.6.1  Field Procedures

The following sections describe the procedures involved in gaining access to organizations and interviewees, and how the interviews were administered.

Interview Schedule and Logistics

Interviews were arranged by telephone for mutually convenient times. Interviews were held face-to-face and recorded, which allowed greater flexibility for gathering data through probing questions. The duration of the interviews varied from 45 to 75 minutes, with most lasting for around 60 minutes. Interviews were conducted in private meeting rooms at the participants’ workplaces. All interviews involved only the participant and the researcher.

Data Recording

Audio recordings of interviews were made, with the subjects’ approval, to allow the researcher to focus on the words and themes used by subjects (Bryman 2008). The researcher also took notes of significant points, and issues or topics that were to be revisited during the interview. Other sources of data, company profiles and one export plan were also collected. Audio recordings were transcribed before analysis. None of the participants asked to review or correct the transcripts.

The approach used to capture data from the initial interviews was that of semi-structured interviews where a list of open-ended questions was prepared in advance (see Appendix A). These were augmented by probe questions composed by the researcher in response to statements made by the participant (Hussey & Hussey 1997).
The initial interview questions were a mixture of open-ended questions, designed to expose a diversity of opinions and allow the subject to follow their own line of thought (Bryman 2008), and probe questions, which were used to elicit more information and to keep the discussion focused, when necessary.

The survey form was sent to participants and reviewed prior to the interview. The interview involved asking the same open-ended questions regarding the subject’s background and experience in export activities. Discussion then followed on the subject’s survey response and their views on the topics covered in the survey.

The objective of the above design was to ensure that the data collected would be clearly linked to the research objectives. This has been achieved through a systematic approach to the selection of cases, the interview subjects and the design of the interview protocol. The interview protocol was consistent with the process outlined. The next section describes the approach used to analyze the data.

3.7 Methods for Data Analysis

This section describes formal data analysis during and on completion of the interviews. Data analysis was an ongoing activity during and after data collection, the approach being to continuously compare the data collected against the research questions, in order to refine the theory and the model (Eisenhardt 1989).

Data analysis is a step in the process of converting raw data into information. Data sources included the researcher’s field notes and interview notes, recordings, transcripts and survey data (Yin 2003). The steps undertaken prior to analysis to ensure high quality were coding and then analysis (Zikmund 2000). The transcripts from the eight hours of interviews amounted to about 38,000 words. NVivo qualitative analysis software was used to assist in the process of data analysis.

3.7.1 Coding

Coding is regularly used to reduce the large quantities of text produced by in-depth interviews to a manageable form (Bryman 2008). Although grounded theory (Glaser & Strauss 1967) was not the methodology used for this research, aspects of its approach to content analysis were used to break down the data and to conceptualized and reassemble it in new ways (Bryman 2008). With this approach, recurring themes, categories or metaphors are created from the data. Themes may come from words, sentences or phrases containing a single
concept or from whole paragraphs (Carson et al. 2001). This reduction to single concepts facilitates categorization, sorting and analysis so that each concept can be considered separately (Miles & Huberman 1994; Hussey & Hussey 1997; Jackson & Trochim 2002). New nodes (categories) were developed from the data with the relationships between the nodes enlightening the research. The approach used for data analysis included three procedures: open coding, axial coding and selective coding (Miles & Huberman 1994; Hussey & Hussey 1997; Bryman 2008).

Open coding involves the systematic analysis of interview transcripts and other data sources, word-by-word, line-by-line or sentence-by-sentence (Carson et al. 2001). Codes are then applied to ‘the point’s key to addressing research questions’ (Allan 2003, p. 2), using the subject’s terminology, *in vivo* coding or the researcher’s own ‘labels’ that best suit the item. With the open coding process, codes are derived from the data, not from a pre-determined list (Carson et al. 2001).

Axial coding follows open coding and involves the identification of relationships between open codes. This process produces core codes developed from the groupings and categories that emerge from the relationships.

Selective coding is the final step in the overall coding process. It involves the identification of the focal point from the core codes. The focal point is the central phenomenon that emerges from the previous coding stage and best describes the theory under investigation. The coding process is highly iterative, with new codes being developed from conceptual codes.

### 3.7.2 Content Analysis

The coded data was then analyzed by using the techniques of categorizing and diagramming (Bryman 2008). The process involves the development of codes as described in the previous section, and then it associates and groups them using context, conditions and consequences derived from the data. A core or central category is one that appears most often in the data, becoming increasingly related to other categories. Content analysis involves the identification of patterns, not the counting of occurrences (Bryman 2008).

### 3.7.3 Survey Data Analysis

Hofstede (1980) has provided us with particularly apt imagery attesting to the value of a broad perspective in researching managerial phenomena in his extensive study on the impacts of national culture upon management behavior which led to the development of the substantial
HERMES database. He likens the quantitative survey approach he used to providing the skeleton and the follow-up qualitative studies to providing the flesh (Gilbert 2007).

The quantitative responses in the survey were used to collect numerical data. However, in this research the quantitative data is supplementary to the rich, descriptive qualitative data. Survey data was analyzed using the simple approach of collapsing responses agreeing with the statement or question into one value, and doing the same for those responses disagreeing. The percentage of 'importance' is calculated by counting those who indicated 'most important' (5) or 'important' (4), dividing the sum by the number of responses and expressing the result as a percentage. This resulted in scores of 5 and 4 being collapsed into one value, as were scores of 1, 2 and 3. More advanced forms of statistical analysis, such as factor analysis, were not possible due to the low number of respondents.

3.7.4 Quality, Validity and Reliability

To ensure that transparency, consistency and credibility of research design are achieved, Patton (1990) proposes that three distinct but related elements should be considered:

1. The application of systematic, rigorous techniques and methods in data collection and analysis, with particular regard to validity, reliability and triangulation

2. The credibility of the researcher

3. A philosophical belief in the phenomenological paradigm.

Quality, validity and reliability in qualitative research relate to the ability of the research to be repeated, and also to its success, or otherwise, in answering the research question (Hussey & Hussey 1997). This research was carefully designed to achieve these aims. As with debate among scholars regarding which paradigm is ‘best’, there is also debate about which criteria are most appropriate to the various paradigms (Healy & Perry 2000). Table 3.6 summarizes the criteria for the various paradigms. Irrespective of the various views, it is important to ensure that research is fit for the purpose, a principle followed in designing this research.
### Table 3.6: Research quality criteria

<table>
<thead>
<tr>
<th>Positivism</th>
<th>Constructivism</th>
<th>Realism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal validity</td>
<td>‘Truth’ or credibility</td>
<td>Ontological appropriateness</td>
</tr>
<tr>
<td>Reliability</td>
<td>Neutrality or confirmability</td>
<td>Contingent validity</td>
</tr>
<tr>
<td>Construct validity</td>
<td>Consistency or dependability</td>
<td>Peer and key informant</td>
</tr>
<tr>
<td>External validity</td>
<td>Applicability or transferability</td>
<td>Triangulation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trustworthiness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Analytic generalization</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Construct validity</td>
</tr>
</tbody>
</table>

Source: Adapted from (Healy & Perry 2000, pp. 121-2)

This research project addressed the issues of quality and validity using Yin’s (2003) four tests of construct validity, internal validity, external validity and reliability.

### Table 3.7: Case study tactics for four design tests

<table>
<thead>
<tr>
<th>Tests</th>
<th>Case Study Tactic</th>
<th>Research Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construct Validity</td>
<td>through the use of multiple sources of data; triangulation</td>
<td>Data collection</td>
</tr>
<tr>
<td></td>
<td>through consultant review and key informant</td>
<td>Data collection</td>
</tr>
<tr>
<td>Internal Validity</td>
<td>through analysis of causal relationships</td>
<td>Data analysis</td>
</tr>
<tr>
<td></td>
<td>through pattern matching between interviews and between cases</td>
<td>Data analysis</td>
</tr>
<tr>
<td>External Validity</td>
<td>through care in case and interviewee selection</td>
<td>Research design</td>
</tr>
<tr>
<td>Reliability</td>
<td>through thorough documentation of the research process and procedures (research protocol)</td>
<td>Research design and data collection</td>
</tr>
<tr>
<td></td>
<td>through the establishment of a case study database</td>
<td>Research design, data collection and data analysis</td>
</tr>
<tr>
<td></td>
<td>through peer review</td>
<td></td>
</tr>
</tbody>
</table>

Source: Adapted from (Yin 2003, p. 34)
Construct validity is defined as ‘establishing correct operational measures for the concepts being studied’ (Yin 1994, p. 33), and has been addressed in this research task by using: multiple data sources, including the review of literature presented in Chapter 2; in-depth, case study interviews with key informants; and hard-copy data supplied by companies such as organizational reports, website information and fieldwork surveys.

The tests shown in Table 3.7 were addressed through the tactics shown. Academically, peer review has also been ongoing and constructive with feedback from professors engaged in the field of enquiry. Experienced consultants from Austrade and an industry expert from Itcplace were interviewed first to assist with construct validity and reliability by reviewing the theoretical framework and interview questions. Construct validity was also dealt with through the use of multiple sources of data, comparing constructs with the relevant literature.

**Internal Validity**

Internal validity is defined as ‘establishing a causal relationship, whereby certain conditions are shown to lead to other conditions, as distinguished from spurious relationships’ (Yin 1994, p. 33). Internal validity was addressed through thorough analysis of the coded results and comparison of these to significant statements, and through in-case and between-case pattern matching. As well, the process of explanation-building was employed to complement pattern matching. This process is the final explanation resulting from ‘a series of iterations’ where ‘case study evidence is examined, theoretical propositions are revised, and the evidence is examined once again from a new perspective, in this iterative mode’ (Yin 1994, p. 111). This process enables data to be linked to emerging theory and sharpens the focus of the cross-case analysis.

**External Validity**

External validity tests ‘whether a study’s findings are generalizable beyond the immediate case study’ (Yin 1994, p. 35). This issue has been addressed by researchers using replication logic across multiple cases (Yin 1994). This involves the analytical generalization of a particular set of results to some broader theory where ‘the theoretical framework later becomes the vehicle for generalizing to new cases’ (Yin 1994, p. 46). Similarly, Eisenhardt (1989, p. 537) explains that ‘the goal of theoretical sampling is to choose cases which are more likely to replicate or extend the emerging theory’. Stake (1995) also suggests researchers may study a number of cases jointly in order to inquire into a phenomenon, population or general condition. The cases are chosen because it is believed that researching
them will lead to better understanding of the phenomenon. Given the research framework developed for this thesis, the case studies provide perspectives that extend the understanding of the results provided by the Business Longitudinal Study (Pink & Jamieson 2000), enabling flesh to be added to the skeleton of the phenomenon under investigation.

**Reliability**

In respect to reliability, ‘the objective is to be sure that, if a later investigator followed exactly the same procedures as described by an earlier investigator…[he] should arrive at the same findings and conclusions’ (Yin 1994, p. 36). Similarly, Guba and Lincoln (1994) advocate the establishment of an ‘audit trail’. In addition, in line with both Yin’s (2003) and Perrys’ (1998) recommendations, an extensive database organising significant case material was developed.

Validity and reliability concerns were addressed using Yin’s (2003) four tests, a strategy well documented in the literature. The procedure for ensuring data integrity, validity and reliability consisted of building an extensive database of material using multiple sources of data including case study interviews surveys, firm reports, website information, and product information.

In the following two sections, Patton’s (1990) two concerns regarding the credibility of the case study researcher are discussed.

**Credibility of the Researcher**

Patton (1990, p. 477) observed that ‘there are no simple formulas or clear cut rules about how to do a credible, high class analysis’, noting also that ‘the researcher is the instrument in qualitative inquiry’ (Patton 1990, p. 461). It is obvious – and indeed is one of the limitations of the case study approach – that the standards and methods adopted by the researcher will affect the outcomes (Van Maanen 1983; Bryman 1993). Therefore this research task intrinsically relies upon the detailed methodology developed to address the ontological and epistemological issues discussed in detail in previous sections, which reflects a determined and concerted effort to adhere to best practice with regard to case study methodology as outlined in the literature by authors such as Patton (1987, 1990), Yin (2003) and Healy and Perry (2000).

Patton’s (1990) final concern is now addressed and is followed by discussion of the procedural issues regarding methodology.
Philosophical Belief in the Paradigm

It would be poor practice to use a research methodology that the researcher did not believe to be appropriate in collecting and analyzing data. Investigation of previous studies in the literature led to the realization that the phenomenological paradigm would offer the opportunity to examine a contemporary issue within its contextual environment and enable inquiry into ‘how’ and ‘why’ questions, offering the opportunity to explore, in depth, results and conclusions from the qualitative analysis (Yin 1994, 2003). Hence the value of this approach in achieving the objectives of the study through establishing a rigorous research protocol is acknowledged.

3.7.5 Computer-Assisted Qualitative Data Analysis Software (CAQDAS)

In social science research, computer-assisted qualitative data analysis software (CAQDAS) is widely used to organize qualitative data analysis (Dean & Sharp 2006). In reality CAQDAS is just a database management system. Richards (2002) comments that CAQDAS, NUD*IST and NVivo bring a positivist approach to qualitative data as their functions correlate and count the occurrence of different terms. Tesch (1991) comments on the relevance of CAGDAS to management research for the following purposes:

1. Organising and analyzing literature reviews
2. Content analysis of secondary or archival sources
3. Recording, collating, analyzing and reporting interview data.

However, CAQDAS is not without its critics (Webb 1999). Gilbert (2002) reports one criticism that CAQDAS can cause loss of the richness of qualitative data. At the opposite extreme, doctoral students complain about struggling to come to grips with the mechanics of applying the software (Dean & Sharp 2006).

In this study, NVivo version 8.0 by QSR International was used to organize and analyze interview data with the following objectives:

1. To identify themes and concepts
2. To aid in theory construction
3. To structure the interview data to develop a conceptual view
4. To identify relationships between concepts
Techniques from grounded theory were used to analyze the data collected for this research. This involved encoding the data and identifying categories until a central category emerged. The quality of the process was ensured using tests of construct validity, internal and external validity, and reliability. The next section discusses how ethical issues were addressed for this research.

3.8 Ethical Considerations

This section discusses ethical issues relating to this research. It discusses general ethical issues and then their application to this research. This research program was approved by RMIT University’s Human Research Ethics Committee, Approval number 669.

Research ethics are concerned with the acquisition, analysis and distribution of information without causing harm to research participants (Bryman 2008). In general terms, three parties are involved in management research: the researcher; the sponsor, client or user of the research products; and the respondents or subjects. All parties have rights and obligations (Zikmund 2000). As there is no sponsor or client for this research, the only parties are the respondents and the researcher.

Respondents have rights to privacy and confidentiality, to be informed of the study’s aims and objectives, to have free choice and give informed consent to participate, to be treated honestly and fairly and not to be subjected to harm (Ticehurst & Veal 1999; Zikmund 2000). In the case of business research, this right applies to the respondent as a person and to the organization for which they work. Respondents who agreed to participate have an obligation to be truthful. The researcher has the right to be treated honestly and fairly. However, what is more important are the researcher’s obligations. Researchers must not misrepresent the purpose or nature of the research; they must be objective, unbiased, competent, thorough and honest; they must not misrepresent or overstate results in order to prove a point; and they must ensure the research is original and acknowledge the ideas of others. Finally, the researcher must respect the privacy, confidentiality and anonymity of the respondents and protect the confidentiality of any sensitive information (Ticehurst & Veal 1999; Zikmund 2000).

There is no absolute right or wrong answer to ethical questions. As Zikmund points out, ‘ethical questions are philosophical questions’ (2000, p. 71). However, commonsense and
common decency will guide most people, with codes of practice and the law filling in the gaps.

The application of ethical principles has shaped the following approach:

1. Potential respondents were provided with: a letter explaining the purpose of the study and what was being asked of them; the opportunity to participate or not; an assurance of confidentiality and privacy; and an explanation that each participant would have the same access to the research results.

2. A coding system was developed for all participating people and organizations that would ensure confidentiality and anonymity.

3. Hard copy material and audio files were and are kept in a safe and secure environment.

4. Digital records were and are kept in a safe and secure environment.

5. Approval was sought from and granted by the RMIT Ethics Committee (Approval no. 669).

6. A letter was provided by RMIT indicating compliance with their code of ethics and research rules and procedures.

The checklist shown in Table 3.8 was used in shaping the research.

<table>
<thead>
<tr>
<th>Checkpoint</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Will any harm come to direct or indirect participants from this research?</td>
<td>No. Anonymity, confidentiality and privacy are assured by following the procedures described.</td>
</tr>
<tr>
<td>2. Will any harm come to non-participants from this research?</td>
<td>No. The topic and nature of this research is not likely to cause any harm or flow-on effects.</td>
</tr>
<tr>
<td>3. Will the research violate accepted research practice?</td>
<td>No. The research has been approved by RMIT’s Ethics Committee and follows their guidelines.</td>
</tr>
<tr>
<td>4. Will the research violate accepted community standards?</td>
<td>No. Common sense and common decency have been applied to this research at all times.</td>
</tr>
</tbody>
</table>

Source: Adapted from Hussey & Hussey (1997, p. 39)
3.9 Selected Case Descriptions

The top-level unit of analysis for this research is the Australian ICT SME sector, with the lower-level unit of analysis being the firm. Eight cases were developed and to preserve confidentiality each case was given a code. Brief information about each case, the organization’s size by employee numbers, and the year it started internationalization is presented in the below (Table 9).

Table 3.9: Demographic summary of cases

<table>
<thead>
<tr>
<th>Case Number</th>
<th>Designation</th>
<th>Gender</th>
<th>Business Education</th>
<th>Main Industry</th>
<th>Years Operating</th>
<th>Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Founder/CEO</td>
<td>M</td>
<td>Yes</td>
<td>ICT software</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>2</td>
<td>Founder/CEO</td>
<td>M</td>
<td>Yes</td>
<td>ICT hardware, software</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td>3</td>
<td>CEO</td>
<td>M</td>
<td>No</td>
<td>ICT hardware</td>
<td>14</td>
<td>13</td>
</tr>
<tr>
<td>4</td>
<td>Founder/CEO</td>
<td>M</td>
<td>Yes</td>
<td>ICT hardware</td>
<td>10</td>
<td>35</td>
</tr>
<tr>
<td>5</td>
<td>Founder/CEO</td>
<td>M</td>
<td>No</td>
<td>ICT software</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>Founder</td>
<td>M</td>
<td>No</td>
<td>ICT software</td>
<td>19</td>
<td>10</td>
</tr>
<tr>
<td>7</td>
<td>CIO</td>
<td>M</td>
<td>Yes</td>
<td>ICT software</td>
<td>13</td>
<td>50</td>
</tr>
<tr>
<td>8</td>
<td>Director Marketing</td>
<td>M</td>
<td>Yes</td>
<td>ICT software</td>
<td>8</td>
<td>125</td>
</tr>
</tbody>
</table>

**Case 1:** A small ICT software firm, which is a leading provider of platforms and tools for the development and operation of wireless-embedded networks. The firm is based in Melbourne, Australia, and employs 15 full-time staff. It was established in 2003 and has enjoyed high growth over the last three years and expects to maintain its growth due to its internationalization strategy. The firm is currently exporting to 25 countries, which amounts to 100% of their export intensity.

**Case 2:** A small ICT hardware and software firm, which is a leading electronic product development company, offering turnkey product solutions and complete outsource design services to a diverse global client base in a range of industry segments including semiconductors, networking, telecommunications, and consumer and medical applications. The firm is based in Melbourne, Australia, and employs 15 full-time staff. It was established
in 2000 and has enjoyed high growth over the last three years and expects to maintain its
growth due to seeking new international opportunities. The firm is currently exporting to three
countries, which amounts to 50% of their export intensity.

**Case 3:** A small ICT hardware and software firm, which has designed and markets a unique
product that logs traffic on roads and highways via infra-red signals to government transport
departments. The firm is based in Melbourne, Australia, and employs 13 full-time staff. It was
established in 1994 and has enjoyed average growth over the last three years and expects to
increase its growth internationally due to the establishment of a new management structure
and the recruitment of a CEO. The firm is currently exporting to 10 countries, which amounts
to 25% of their export intensity.

**Case 4:** A medium sized ICT hardware and software firm, which is a specialist company
providing design, engineering and integration services for advanced telecommunications
systems in the energy, transport, telecommunications and mining industries. The firm is based
in Melbourne, Australia, and employs 35 full-time staff. It was established in 1998 and has
had zero growth over the last three years due to an organizational restructure to build its
capabilities for international growth and an exit plan. The firm is currently exporting to 11
countries, which amounts to 15% of their export intensity.

**Case 5:** A small ICT software firm, which is a specialist company that develops software for
electronics and mechanical design customers. The firm is based in Melbourne, Australia, and
employs two full-time staff. It was established in 1997 and has had zero growth over the last
three years. The firm is currently exporting to 10 countries, which makes up 80% of their
export intensity.

**Case 6:** A small ICT software firm, which is a specialist company that develops software for
the aviation industry. The firm is based in Melbourne, Australia, and employs 10 full-time
staff. It was established in 1989 and has had fluctuating growth over the last three years. The
firm is currently exporting to five countries, which amounts to 50% of their export intensity.

**Case 7:** A medium-sized ICT software firm, which is a specialist company that develops
qualitative analysis software for social research. The firm is based in Melbourne, Australia,
and employs 50 full-time staff. It was established in 1995 and has had average growth over
the last three years. The firm is currently exporting to 100 countries by using e-commerce
technology for sales and distribution of their products, which amounts to 85% of their export
intensity.
Case 8: A medium-sized ICT software firm, which is a specialist company that develops and hosts content management applications for the construction industry. The firm is based in Melbourne, Australia, and employs 125 full-time staff. It was established in 2000 and has had high growth over the last three years. The firm is currently exporting to 45 countries, which amounts to 60% of their export intensity.

As Paton (1987) and Eisenhardt (1989) proposed, cases should be chosen for the potential value of the information and insights they may be able to offer in understanding the research problem. The eight cases described were selected because of their potential to offer insights and understanding regarding the study of entrepreneurial internationalization. This group of cases provides a wealth of knowledge and experience, meeting the criteria for case selection offered by theorists and the rationale for selection discussed previously. Table 3.9 provides summary demographic data of the eight case studies.

3.9.1 Access to Cases

Access is described by Gummesson (2003) as a researcher’s ‘biggest problem’. Bearing this in mind with regard to directions from theorists concerning a selection of cases that will provide ‘rich’ information, the issue of access to appropriate case subjects presents some dilemmas for researchers. In this particular instance, the case participants are known to the industry expert from REDCentre and to Austrade, which helped these firms at start-up and to export.

As described previously, the expert knowledge of the industry expert and the Austrade consultants were highly valuable in pilot testing the research instruments.

3.10 Summary

Case research is an appropriate and valid methodology for this research problem, particularly as it is used for the theory building required for this topic. After examination of the advantages and limitations of case research, the researcher believed the advantages of case study research outweigh its deficiencies.

The methodology included in-depth interviews with people from eight participating organizations, resulting in eight interviews. The use of an appropriate research protocol ensured that quality, reliability and ethical issues were addressed.
This chapter also explained the analysis of the data and discussed the approaches used. The analysis is reported and discussed in Chapter 4. The results reported in Chapter 4 are compared with conflicting and convergent extant literature, as discussed in Chapter 2, in the conclusions presented in Chapter 5.
Chapter 4: Data Analysis

4.1 Introduction

Chapter 3 explained the case methodology and its applicability to this research. From analysis of the case data, the researcher gained familiarity with the cases for preliminary theory generation. This approach of building theory from case studies is central to answering the research questions (Eisenhardt 1989). This chapter presents case descriptions of eight firms from the Australian ICT industry. Each case comprises a review of the firm’s entrepreneurial internationalization activities. This is followed by the cross-case analysis which allows patterns to emerge. The findings derived from the analysis conclude the chapter with rich triangulated evidence to strengthen the generation of theory building (Eisenhardt 1989).

4.2 Presentation of cases

1. The cases were chosen for their potential to contribute in an insightful and meaningful manner to the objectives of the research. Table 4.1 provides a summary of the case participants at the time of their interviews. The eight cases are Australian ICT SMEs, with five founders and three senior managers interviewed. The study was limited to Australian ICT SMEs in Melbourne that have internationalized, to enable convenient access for the researcher.

2. The case participants represent a wide range of ICT backgrounds and bring a rich pool of knowledge and experience to the research study. All the participants were at the senior management level within their firms either at the time of their firm’s founding (Cases 1,2,4,5,6) or at the time they joined the firm (Cases 3, 7, 8). Each case was assigned a numerical code to assure anonymity. To further ensure confidentiality, specific data that could identify the participants or their firms was purposefully omitted.

3. As described in Chapter 3, a study protocol was designed to ensure uniformity in the approach to multiple data collection. The triangulation of evidence enhances the validity and reliability of results, creating what Eisenhardt (1989) refers to as an audit trail. The experience and insight of the participants provided rich and extensive case data.
Table 4.1: Case firm summaries

<table>
<thead>
<tr>
<th>Case</th>
<th>Position in Firm</th>
<th>ICT Sector</th>
<th>Year Established</th>
<th>Year Started Exporting</th>
<th>Number of Employees</th>
<th>Gross Annual Sales</th>
<th>Export Intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CEO</td>
<td>ICT software</td>
<td>2003</td>
<td>2004</td>
<td>15</td>
<td>A$1-$5m</td>
<td>100%</td>
</tr>
<tr>
<td>2</td>
<td>CEO</td>
<td>ICT hardware software</td>
<td>2000</td>
<td>2000</td>
<td>15</td>
<td>A$10-19m</td>
<td>50%</td>
</tr>
<tr>
<td>3</td>
<td>General Manager</td>
<td>ICT hardware software</td>
<td>1994</td>
<td>2004</td>
<td>13</td>
<td>A$1-$5m</td>
<td>25%</td>
</tr>
<tr>
<td>4</td>
<td>CEO</td>
<td>ICT hardware software</td>
<td>1998</td>
<td>1998</td>
<td>35</td>
<td>A$20-49m</td>
<td>15%</td>
</tr>
<tr>
<td>5</td>
<td>CEO</td>
<td>ICT software</td>
<td>1997</td>
<td>1997</td>
<td>2</td>
<td>&gt; A$1m</td>
<td>80%</td>
</tr>
<tr>
<td>6</td>
<td>Managing Director</td>
<td>ICT software</td>
<td>1989</td>
<td>1989</td>
<td>10</td>
<td>&gt; A$1m</td>
<td>50%</td>
</tr>
<tr>
<td>7</td>
<td>CTO</td>
<td>ICT software</td>
<td>1995</td>
<td>1995</td>
<td>50</td>
<td>A$6-$9m</td>
<td>85%</td>
</tr>
<tr>
<td>8</td>
<td>General Manager Marketing</td>
<td>ICT software</td>
<td>2000</td>
<td>2002</td>
<td>120</td>
<td>A$50-99m</td>
<td>60%</td>
</tr>
</tbody>
</table>

Source: Developed for this report (Gross annual sales ranges are adapted from ABS 2000)

4.2.1 Case Descriptions

Based on inductive research, the data was analyzed by building individual case studies for preliminary theory generation (Eisenhardt 1989). Each of the eight participant cases was compared across the a priori themes and concepts from the review of the entrepreneurship and internationalization literature presented in Chapter 2. NVivo software was used to code the data gathered from a semi-structured interviews and to perform analysis. Although
similarities and differences were noted in the interview transcripts, analysis was not conducted on the data until the transcribing was completed, in order to maintain the independence of replication logic (Brown & Eisenhardt 1997).

Each case is presented next, reviewing the firm background, founder and/or manager characteristics, international entrepreneurial opportunity process, firm characteristics, firm capabilities and the external environmental factors that have influenced internationalization. This chapter concludes with a summary of the eight cases before moving onto cross-case analysis.

**Case 1**

**Firm Background**

The growth and spread of internet technologies such as mobile networking have been phenomenal. The founder of this firm developed the Sensor Network Analyser (SNA) software to help organizations manage and troubleshoot their wireless communications networks. The software allows them to view all wireless network devices and interactions simultaneously. Founded in 2003, Case 1 firm started operations in Melbourne and started exporting in 2004, with gross annual sales of between A$1 million and A$5 million, and export intensity of 100% in 2007. The findings are based on an in-depth interview with the Case 1 participant. The analysis of the interview material identified details of the founder-CEO, the international entrepreneurial opportunity processes (i.e., discovery, enactment, evaluation, exploitation) during firm internationalization, and the expansion of the firm’s external relationships as the firm gained product leadership to achieve international growth.

**Founder/Manager Characteristics**

The founder of Case 1 had worked in the telecommunications industry in Australia and overseas for 15 years in technical and senior management positions. He started the business in 2003 and had occupied the position of CEO for four years at the time of the interview. The founder started the business in the area of his expertise in wireless network analysis software that manages communications devices remotely via wireless technology. He was proactive in seeking opportunities for a niche where his product could be commercialized. After contacting his networks in the US, the CEO assessed the viability, and the feedback from his networks confirmed the feasibility of his wireless network analysis product, which in fact gained the high rewards and success he had expected from his venture. The founder took the
risk of exploiting his new product as he saw his international contacts in the US as a way to enter a sustainable market for his new venture.

International Entrepreneurial Opportunity Process

The founder’s previous experience and his networks were fundamental in discovering the product gap in wireless network analysis software. The evaluation of the opportunity was based on experience in developing software for multinational firms and feedback from international contacts that he could likely exploit the first product in the US with the creation of a new venture in Australia. By exploiting the first product in the US, the firm’s scope was international from start-up, although this contradicts the founder’s view of ‘having a global view’ from start-up. However, overtime exports expanded to 25 countries, mainly in North America and the EU, with 100% of revenue coming from export sales. So far Australia has not been a viable market for Case 1, which shows the attractiveness of global markets. This case also presents a specific type of venture that cannot find a niche in the domestic market and can only exploit its products in large markets such as the US and the EU.

Internationalization of the Business

The firm internationalized after its first year of operation, selling its products via distributors in the US. The distributors had relationships with government and defense industries, which were the largest customers targeted for the firm’s products. Initially the internet was used by the firm in Case 1 for advertising the firm’s products and services, providing information and educational material but with no interaction with customers. After joining the Zigbee alliance for standardization of wireless management software, the firm excelled to reach global status, and it increased its networks and global opportunities by developing knowledge with large ICT organizations and accessing new channels of sales in global markets directly or via alliance partners.

As the firm develops and sells only software, they did not have to make any investments in production facilities overseas. The internet has made the distribution of software simpler and has increased profit margins as less physical production packaging and shipping is required. However, the firm did setup an office in the US as it was important to be seen as a US-based firm, which was a requirement to win large contracts with government and defense industries. Although the internet facilitates efficiency in the value chain and minimizes geographical barriers, domestic geographic location is still regarded as an advantage, particularly in the US market.
In contrast to the traditional strategy for internationalizing, the Case 1 firm entered the US by setting up a subsidiary and investing in sales and support services in their US office. This was followed by entering into an international strategic alliance with Zigbee for standardization. The firm then expanded into further markets such as the EU via distributors, as location advantage was as critical for the EU as for the US. Entering international markets with high-risk strategies such as foreign direct investment, international strategic alliances and distributors is the opposite of the traditional path to international market entry. The choice of international strategy is based on the opportunity at hand. As the US was the first market exploited, setting up a subsidiary was required to win commitment from government clients.

Firm Characteristics

At the time of interviewing, Case1 firm was five years old and had internationalized after its first year of start-up (born global). The firm developed software for analyzing internet networks via wireless technologies. Joining the Zigbee alliance generated relationships with software firms in the US and the EU, generating 100% of export sales and expanding its exports to 25 countries. The rapid international growth of the firm required an increase of full-time employees to 15. The CEO had plans to further increase the sales force to build relationships with key accounts to increase sales and grow the business. However, unlike born-global firms, Case 1 was focused on wealth creation for the firm by increasing value, growth and sales. This shows that through an entrepreneurial viewpoint Case 1 follows international strategies for sales and profitability, not just export growth.

Firm Capabilities

During firm start-up, links with international networks increased the speed of internationalization and assisted the exploitation of the product in the US market with limited resources. Although SNA was a highly innovative product, without international network connections in the US SNA could not have been a commercially sustainable product as the Australian network software market was commercially unsustainable and without a large market such as the US the product could not have achieved early success.

Since start-up, the firm simultaneously networks amongst their customers in their target markets and builds partnerships with other companies, allowing the firm to reconfigure their wireless network management systems to suit the opportunities at hand. Opportunities are systematically evaluated to assess the viability of global opportunities generated from joining the Zigbee alliance where knowledge is co-developed and marketed through multinational
partners and websites which create internet sales channels to complement the firm’s e-commerce capabilities.

As new markets develop for sustainability products, Case 1 has exploited global opportunities by reconfiguring their products to intelligently manage and reduce energy use in industrial and commercial buildings. Adapting to market needs has made the firm the industry’s leading wireless controls solution provider for lighting, delivering substantial energy efficiency improvements and occupant-friendly work environments.

**External Environment**

A sustainable overseas market such as the US was the main influencing factor for internationalization. Global opportunities generated the firm’s expansion into global markets, resulting in 100% in export sales. Previous international market knowledge informed the firm’s internationalization strategy of choosing Western cultures to minimize financial risk and facilitate international business transactions.

The main impediment to the firm’s internationalization has been the hostile Australian ICT market that has limited domestic market opportunities for the firm’s products. The firm has also been disadvantaged by government support provided through Austrade as its exporting processes are time consuming and too expensive for start-ups. SMEs can apply to Austrade for up to 50% of their exporting expenses. However, start-ups lack the capital for this arrangement, which impacts on their ability to internationalize early.

**Case 2**

**Firm Background**

Case 2 is a leading telecommunications product development company, offering turnkey product solutions and complete outsource design services to a diverse global client base in a range of industry segments including semiconductors, networking, telecommunications, consumer, defense and medical applications. The value proposition of Case 2 is designing customer concepts and delivering solutions to meet deadlines on time, on budget, with minimal risk.

The firm was founded in 2000 at the peak of a global technology boom fuelled by the hunger for internet technologies. The merging of three well-established consulting firms, combined complementary management experience and technical expertise in high-speed
telecommunications design. Despite the significant technology downturn starting in 2001, Case 2 firm has steadily grown since its inception. This resilience has stemmed from skill in adapting to a challenging business environment and an ability to identify and build on international opportunities. The firm was able to attract highly skilled engineers and managers who further broadened the skill-base and expertise. In December 2002, the firm’s strong growth enabled relocation to larger premises, allowing the establishment of a research and development laboratory and production facilities.

**Founder/Manager Characteristics**

The CEO who is one of the founders of the Case 2 firm had worked as an electronics engineer consulting in the telecommunications industry in Australia and overseas for over 20 years. He sees himself as a visionary and the architect of the merger of the three firms to seize global opportunities created by the global technology boom. The business started in 2000 and the founders’ intention to create a global business was a strategic approach of seeking large contracts which would return high profits.

The CEO and the other two founders had already established their first ventures before the merger in telecommunications, thus gaining valuable experience in the industry. The global outlook for ICT presented an opportunity to merge competences and resources to establish the firm as a specialist technology partner with large firms such as Telstra and IBM. These partnerships would result in higher sales and growth as their customers’ projects spanned across Australia and New Zealand. A high sales volume and long contracts provided long-term revenue for the business.

**International Entrepreneurial Opportunity Process**

The Case 2 firm continues to deliver innovative solutions to its growing international customer base, and is committed to being at the forefront of technological innovation. At the leading edge of technology, its delivery of complete, outsourced solutions for clients has been a key element in the firm’s continued success.

‘We are 100% opportunistic’, commented the CEO, illustrating the opportunistic behavior of the founder. The vision of the global opportunities and the merging of three specialist technology firms to combine resources and capabilities is a good example of the strategic actions taken by entrepreneurial firms to create wealth. The founders developed a business plan to deliver services globally starting with Canada and the US. The business objective was to increase profit and sales as the domestic market was hit by the technology downturn in
2001. The CEO stated, ‘You do not sell for the sake of selling, I am making sales to make more profit.’ These business objectives are aligned with the firm’s growth plans for global opportunity-seeking.

**Internationalization of the Business**

The firm’s first international customers came from Ottawa, Canada, through previous contacts. This resulted in establishing a local agent to represent the firm by supporting its products and services in the region. The opportunities and growth in Canada motivated the firm to use its other previous overseas contacts to identify and exploit markets in the US, which was a much larger market for their telecommunications products in broadband technology. The growth in international markets was a catalyst for the firm to approach Austrade to access government support at industry tradeshows for introductions to potential customers through business matching processes. Matching business vendors and customers increased the speed of conducting international business and improved the fit with customer requirements.

**Firm Characteristics**

At the time of the interview, Case 2 firm was seven years old and had internationalized within the first year of start-up (born global). The firm mainly developed hardware for the telecommunications industry using broadband technology connecting businesses to the internet. The firm had grown to 15 full-time employees at the time of the interview.

The firm partnered with the VDSL Alliance and Xilinx Alliance Core in 2003, consolidating its leadership developed in the xDSL and digital design domains. Cooperative partnerships generated relationships with internet firms in Canada, the US and the EU, generating 50% of export sales and increasing its market growth by 400%. The firm’s opportunity-seeking and cooperative strategies have paid off with above average returns for its size compared to other SMEs in the ICT industry. It has approximately $1 million in sales per full-time employee, which is a result of an entrepreneurial strategy to simultaneously innovate and exploit opportunities with high returns.

**Firm Capabilities**

During firm start-up, having established international networks increased the speed of internationalization. Unlike the firms in the other cases, three firms merged to combine their resources, giving them an advantage over new ventures that suffer from resource poverty.
Their technical and management experience provided them with the ability to develop a robust internet device for rural areas, and this product gave them first-mover and competitive advantage to become a supplier for Telstra and win the Telstra Excellence in Technical Innovation award in 2004.

The firm’s partnerships were extended by signing a manufacturer’s representative agreement with IBM to represent IBM semiconductor products and services in Australia and New Zealand. This agreement allowed the firm to provide a more comprehensive range of design services and draw on IBM’s extensive technical portfolio. Cooperative alliances with firms such as Telstra and IBM have provided sustainable partnerships for growth and innovation, which contributed significantly to its success and above average growth in the telecommunications industry. As a result the firm’s technical expertise in telecommunications gives the firm the ability to develop cost effective turnkey solutions to their customers faster than their larger competitors.

**External Environment**

Global opportunities in Canada, the US and the EU have been effective in achieving business objectives for higher profit and sales through alliances. Previous international market knowledge facilitated the firm’s internationalization activities. With a growing Asian market, market research will be undertaken to gain insight into the firm’s segment of the ICT industry and to look at the feasibility of strategies with current partnerships or new partnerships with other players in the Asian markets.

The main impediment to firm internationalization has been the hostile telecommunications market and its susceptibility to global economic changes. The firm is constantly faced with changes in the marketplace which require reviewing strategic plans more often and which disrupt the implementation of current contracts. This is due to dealing with corporate clients and not consumers. The business development cycle with corporates requires longer lead times, so when there is a change in the market cash flow is impacted increasing market hostility. Hence, a proactive approach to seeking advantages minimizes risk for the firm by exploiting opportunities that are low risk and profitable.
Case 3

Firm Background

In 1998, the company began the development of a photonic-based vehicle counter, classifier and speed measurer that became known as The Infra-Red Traffic Logger (‘TIRTL’). The firm’s initial business focus was on the development of broadband telecommunications, opto-electronics and electronics products. These developments resulted in a portfolio of leading-edge products in dense wavelength division multiplexing (DWDM), optical access networks, gigabit backplanes and interconnections, broadband electronics, burst-mode receivers, wireless Radio Frequency sub-systems, ultra-sensitive analogue electronics and high reliability software-controlled electronic products.

The first version of TIRTL was deployed in NSW, Australia, in July 1998. After the downturn of the domestic ICT industry in 2001, the firm internationalized in 2004 for firm survival. The firm’s international expansion strategy has sold TIRTL to state governments in Australia and New Zealand, as well as through partners in the US, India, Singapore, South Africa, Turkey and Europe.

Founder/Manager Characteristics

The respondent in Case 3 is the General Manager of a small ICT hardware and software firm established in 1994, which designed and markets a unique product that logs traffic on roads and highways via infra-red signals to government transport departments. The founder’s innovation in traffic logging provided the opportunity to startup a firm through his networks to provide ICT products for the transport industry. The General Manager is a qualified electronics engineer and developed his skills in operations management in the telecommunications industry for 25 years. The founder of the firm as an inventor has been highly involved in the development of the firm and its unique products. The General Manager was employed to manage business operations so that the founder and the Business Development Manager could grow the business internationally. However, the founder is having difficulty in handing over control.

International Entrepreneurial Opportunity Process

To date, Case 3 firm started exploiting international opportunities through casual product orders from Singapore. International opportunities for distribution of their products in the United States opened up the largest ICT market in the world for Case 3. Through distributors
opportunities to build local support infrastructure was recognized. Processes for sales training and product support were established to enable distributors to exploit their markets. The General Manager comments:

Internationalization has broadened our opportunities significantly. It is really our only hope to maintain a sustainable business. Our opportunities are growing enormously because it’s almost like a chain reaction, it gets to feed off itself providing capital to be able to innovate, and one example is the one I described about the heavy vehicle checking stations.

The founder of Case 3 is well recognized in the international traffic systems industry through presenting at their forums in Australia and the United States has opened up global opportunities in the EU and Asia. After granting distributorships in the US, distribution agreements were established with firms in China, Korea and Taiwan. Seeking new distributorships and networking at industry forums has simultaneously presented new global opportunities for the firm.

**Internationalization of the Business**

The firm has exported via agents and has used other networking methods such as tradeshows and conferences to expand its markets. The firm structure has been reorganized by appointing a board to focus on expanding the firm’s international markets. The firm’s internationalization strategy has increased business growth and export sales, driving a change to a formal management structure committed to international expansion. This strategy has contributed to the firm’s business success as it has increased international market opportunities, improved product quality and improved supply chain management through outsourcing.

**Firm Characteristics**

One of the advantages of being a small firm as stated by the General Manager is ‘the flexibility and responsiveness to opportunities’. His experience at Fujitsu was to present business plans for new opportunities to executives many times that took too long before a decision was made ending in losing the opportunity. However, when an opportunity is identified with the agility of a small firm opportunities are exploited quickly resulting in a sale of products or services.

At the time of the interview the business employed 13 full-time people including three managers who had no business education. There were three directors on the board, with two directors having business qualifications. The firm started exporting in 2004 and exports had grown from 5% to 25% within the last three years of business to achieve sales in the A$1–5
million bracket, with export sales to ten countries. The three main destinations for exports have been the US, Singapore and India.

Increasing growth of the firm was the main business objective for this firm, with the intention to also increase the value of the business for a future trade sale. The firm uses cash flow as its main source of capital and uses retained profits and equity finance to manage the firm’s operations. The main sources of advice for the firm are their accountant for financial management and government agencies for small business advice.

**Firm Capabilities**

Case 3 is an innovative firm which is a leader in its field and develops new products and identifies new opportunities, which assist it to grow its markets. The firm’s international strategy has opened new opportunities and the firm has experienced medium growth which has enabled the improvement of product quality and the innovation of remote software upgrades, increasing the quality of service, thus minimizing customer complaints.

In order to meet demand for growth the firm is improving its value chain by building up technical skills of their distributors to increase technical support in their local markets. They are developing service level agreements for their clients to improve quality of service and up-time of systems. In order to meet sales targets the firm is implementing a marketing plan to promote their products centrally to assist their distributors market their products through the firm’s website with product and service information.

The firm’s technical expertise and international networks are invited to be involved in government strategic planning forums and the international traffic systems association (ITSA) regarding trends and solutions for traffic management around the globe. The firm’s collaboration in developing automotive relationship management systems with government traffic departments has increased knowledge sharing and created new global opportunities with ITSA in developing traffic logging standards.

**External Environment**

The firm’s first end-user customers were the transport departments of Australian government agencies. These government agencies invested in the firm’s research and development efforts and promoted the firm through government strategic planning forums which provided an environment to showcase their products. Case 3 belongs to the International Traffic System Association and has been working with them to promote their technology. The founder has
been working with them by attending all their conventions and appearing as a guest speaker. However, the Australian traffic management market is limited in size and triggered the firm’s international expansion as described by the GM:

Although we are working hard to grow the local market it is a small market, a lot of it is government dominated, they move slowly, they take a long time to make decisions and you know we change directions, it will thus present an opportunity to us and tomorrow the opportunity may be gone. The firm needs to expand as we have invested a lot of time and money, so we need to go global.

Case 4

Firm Background

Case 4 is an Australian owned, locally based, value-added reseller specialising in the provision of industrial and carrier-grade communications systems and related technical services. The firm’s core focus is the provision of exceptional quality products and services to both the utility and carrier markets, including the dedicated industrial network sector (i.e., power utilities, oil and gas, transport and mining). This strategy has enabled the firm to develop a broad base of active customers.

Since its inception in 1998, the firm has continued to grow, to develop its product range and to increase its customer base. Today, the firm is considered in the industry as the leading supplier of communications systems and equipment in its field, which in itself is proof of customer satisfaction and confidence in its capabilities.

Founder/Manager Characteristics

The respondent in Case 4 is the founder and CEO of a medium-sized ICT hardware and software firm, established in 1998. It is a specialist company providing design, engineering and integration services for advanced telecommunications systems in the energy, transport, telecommunications and mining industries. As a result of the founder’s 25 years’ experience in the telecommunications industry, he identified an opportunity to spinoff a company from his previous employer, and he started the new company with three colleagues. The founder sees his key skills as a visionary and strategist who identifies and implements business opportunities. The founder’s technical competence as an electronic engineer and his business education contributed to his use of international networks to go born global with the firm’s
first international sales office in New Zealand. This move triggered an opportunity to become a reseller for Nokia in New Zealand.

**International Entrepreneurial Opportunity Process**

It was the vision and ability of the founder that identified the business opportunity of starting up a spin-off firm from his previous employer, which was established domestically. The process of international opportunity recognition started with discovery of possible markets for exploitation in the telecommunications industry. This process identified their weaknesses in infrastructure in targeted markets, during evaluations ‘Nokia was going through a process of outsourcing their sales and support function to New Zealand’ as stated by the founder. The firm was pushed into setting up a subsidiary in providing sales, service distribution for Nokia in New Zealand. This cooperative alliance developed into one of the firm’s global strategic capabilities.

Strategic opportunities expanded with the Nokia alliance into the Asia-Pacific and with telecommunications global firms. The firm started to analyze global markets that were investing in infrastructure projects such as rail and telecommunications. The next step followed with identifying key countries and analyzing their industry structures, as a result three key countries such as Singapore, India and Malaysia were chosen. The firm proactively seeks opportunities with technology trials and advantages through business trials in Asia Pacific.

As telecommunications projects have long lead times opportunities are selected for exploitation and quickest return on investment. The firm was working on a joint venture with an Indian business partner developing a service and distribution solution to Indian rail network; negotiations were being conducted at the strategic business level with the firm’s partner and client. As explained by the founder trials are a proactive strategy for exploiting opportunities:

> Customers are trialing our new technology, they tell us about their experience, and if the technology works it might influence the specifications for the next project. We are working proactively with them by training them in using our equipment.

For new strategic opportunities technology trials are also being conducted. Technology trials consist of supplying free equipment to the customer, where they use in the field. The firm proactively works with the customer in educating them in how to use the equipment and also fixing any bugs that may arise in the trial. The benefit to the customer is that they adapt to the
technology, and the benefit to the firm is that they increase their success for a large sale by potentially becoming the standard of service and technology for the project.

**Internationalization of the Business**

The international strategy of the firm provided business success that drove the formation of a strategic management team which has actively developed strategic partnerships to win business overseas. The firm had the capital to build firm capabilities to enable the business to grow internationally. Investments in firm capabilities such as providing a 24 hour 7 day international service desk and world-wide product delivery have increased the efficiency of the firm. The firm is in the strong revenue bracket of A$20–49 million. The founder commented:

> We are already the leaders in our field of supplying telecommunication solutions to the utility market with 70% market share of the Australian telecommunications industry. We had to change and find new markets so we internationalized for growth.

Rather than exploring new markets for their products or services, the firm decided to pursue international strategies by developing international strategic alliances with MNE partners who have resource advantages such as capital and credibility in the targeted markets. For example, the firm’s focus was on strategic partnerships in countries that they want to target such as Germany. Market entry into Germany was achieved by partnering with a German telecommunications firm, which bid for a tender and was successful in winning the tender for the project. The bid which was in direct competition with Cisco and Huawei who are some of the largest networking firms in the world. The German partner brought location and language advantages complemented by the Case 4 firms’ turnkey solutions.

**Firm Characteristics**

At the time of the interview the firm employed 35 full-time people which included six managers, three of whom had business qualifications. In the past twelve months the management team has been reorganized into two teams: a strategic team focused on its business plan and an operations team focused on day-to-day operations. The changes to the management team have been made to respond quickly to customers’ requirements. As stated by the founder ‘An ability that we really exploit is that we are quite quick to market, we can focus a lot of energy on our customers’. The firm’ agile approach is allowing them to provide rapid solutions using their partners equipment and working with their MNE partners to exploit opportunities.
Through the founder’s international network, the firm started exporting to New Zealand, Malaysia and Fiji, where it has achieved above average sales in the A$20–49 million bracket within their industry. Telecommunications project life cycles are long and time consuming so the firm exploits high profit projects with regular cash flow to maintain operations. The firm’s main business objective is to increase profit, growth and the value of the business in order to exit with a future trade sale. The firm relies on retained profits as its main source of finance and uses shareholders’ funds and cash flow to operate the business.

Firm Capabilities

As a value-added reseller, the firm works closely with its technology partners, including Avara Technologies, Ceragon, Cisco, Dorado, Ericsson, Juniper, MRV and Nokia Siemens Networks, in developing and maintaining a number of support systems, procedures and processes to deliver to customer requirements. The CEO commented:

> International business is a lot more complex than local businesses so there is more process involved in doing something on an international basis. Australian ICT management mentality was that we could buy technology from overseas and make a business here in Australia. Well once you have implemented it here in Australia you have not got any added value that is relevant to doing it in another country.

To differentiate in the telecommunications industry, the firm encourages employees to bring new ideas to the organization and it is a part of the firm’s culture. In order to respond to global opportunities faster than their competitors the firm has established two key capabilities: a research and development team, and an international logistics service.

As a value-added reseller the firm integrates the sale of products from its partners and provides support to their end users via international subsidiaries or partnerships, which is not unique in the ICT industry. To stay competitive the firm established a research and development team that develops non-enterprise mission critical equipment for rail networks, power utilities, motorways, and oil and gas pipelines. These non-enterprise industries require customized industrial equipment and applications that can work under high temperatures and sustain high availability for 15 to 20 years. The firms’ solutions are adding value to customers around the world with success. The firm has also improved their service levels with a new logistics capability.

In order to maintain acceptable service levels for international customers the service desk operating hours were increased to a 24 hour 7 day operation. The logistics of delivering new
products or replacements to maintain network availability was also changed. The firm used to buy equipment from their vendors who were responsible for delivering the equipment to the firm in Australia. This allowed just in time deliveries and minimized stock and warehouse space. A substantial international logistics capability has been setup with a new warehouse building and loading facilities near the Melbourne airport. Multiple vendors deliver their equipment direct from their factories to the warehouse. The firm reconfigures and repackages the equipment and delivers it to their subsidiaries or partners directly. For customized solutions the firm packages equipment and ships them to their customers in the Asia-Pacific, Germany, Spain and India. A centralized logistics capability has improved service levels on a global scale.

External Environment

Strategic partnerships have been instrumental in winning major projects in Germany and India with their local partners, which the firm could not have achieved on its own. The firm’s international experience and market knowledge have contributed to their success in markets that are developed economies and English speaking cultures such as Singapore, India, Hong-Kong and Germany. This has also fostered an innovative culture and encourages employees to question the way tasks are performed and find better ways of performing them. ‘Without innovation we would not survive’, the founder stated.

The firm is now trying to enter new markets such as Russia and is facing hurdles where English is not spoken as a second language. Although the firm has hired two Russian employees to build relationships with their networks to rank business and technology trials with customers, some opportunities have started to develop. The firm is struggling with Russian culture and language barriers, which has not been a problem with English speaking countries. Although Russia presents new opportunities the firm is now faced with deciding on further investments and strategies for partnering with Russian firms.

Case 5

Firm Background

Established in 1996, this company specializes in CAD software for the electronics industry. The first product was an AutoCAD translator for Altium and the firm has since developed a comprehensive suite of products for Protel, Autodesk and SolidWorks specialising in 3D design applications that are innovative, easy to use and affordable software add-ins.
Founder/Manager Characteristics

The respondent in Case 5 is the founder and CEO of a small ICT software firm, a specialist company that develops software for electronics and mechanical design customers. It was established in 1997. As a result of the founder’s experience in the software industry, he identified an opportunity to provide training and started a business to develop add-in software for the company where he used to work. The founder sees himself as ‘pretty much doing everything’. His key skills are his market knowledge and his technical background as an electronics engineer; he has no business education. His international network contributed to the firm entering international markets, with the firm’s first sales being to the US through its strategic partner Solid Works, which develops 3D design software for engineers.

International Entrepreneurial Opportunity Process

The founder of Case 5 used his technical and market knowledge to identify an opportunity of developing add-in software products for Protel, software that develops 3D computer aided design (CAD) applications. With his knowledge of Protel applications the founder knew the inefficiencies of their products and exploited the opportunity of developing software add-ins and providing training to his new customer and previous employer. The process of this opportunity exploitation resulted in simultaneous exploitation of products and services by starting a new business, and an international opportunity of selling the new ventures products and via Protel’s global website to their end-users of the 3D CAD application

I worked for a software company and they were at the time trying to encourage other software companies to cut developed add-ins for their product. I thought maybe I would start a software business doing add-in products for their products because I knew the market very well and knew the inefficiencies in their product that could be filled in with a company like mine.

By partnering and selling add-ins through Protel’s website, international opportunities have mainly come from the US. Protel is now marketing to the EU, and as a result it has expanded opportunities internationally through requests for demonstration versions of the software that enables customers to test the software before they buy it. Strategic partnerships over time have extended to writing add-ins for Autodesk and Solid Edge CAD applications.

Protel, Autodesk, and Solid Edge applications were marketed in the high-end price range of US$10,000 to US$20,000. The add-ins developed for Protel, Autodesk and Solid Edge by Case firm 5 sell for US$1000 providing the business its main revenue source. To increase their global opportunities and expand their markets the firm has partnered with Alibre that
sells CAD applications in the low-end price range of US$1000 to US$2,000. The firm’s add-ins for Alibre sells for US$300 to remain competitive and is a cut-down version of the products sold for Protel, Autodesk, and Solid Edge. Partnerships through software firms and selling products via their websites have been a successful strategy in exploiting global opportunities for Case firm 5.

**Internationalization of the Business**

Through the founder’s international network with Protel, the firm started exporting to the US, Germany and the UK. Initial international sales enquiries came from the US through Protel’s website. Currently it has expanded its international markets by establishing international relationships through agents at tradeshows and selling direct through its website. The firm is simultaneously entering international markets by promoting their products through partner websites such as Protel, Autodesk, Solid Edge and Alibre. The websites provide international presence, product brochures, product technical documentation and the ability to download demonstration versions of the add-in products. In order to download the add-ins users must provide personal details, which is then used to follow-up potential opportunities. The firm is expanding it markets and is now exporting to ten countries.

**Firm Characteristics**

The small size of the firm gives Case 5 the agility and flexibility to respond to customers’ requirements and make changes quickly and exploit opportunities faster than their large competitors. At the time of the interview the firm employed two full-time people including the founder. Expertise is brought in on a contract basis dependent on the requirements of a project. The major business functions such as sales, marketing and accounting are performed by the CEO. From establishment this has been a born-global firm and has achieved sales of less than A$1 million. Export sales have averaged 80% of total sales in the last three years. The firm’s main business objective is to increase the value of the business through profitability in order to grow the business.

**Firm Capabilities**

The founder explains that ‘Our business is like selling software that runs inside other products; we do add-in software that is listed as a new product’. Therefore, strategic partnerships are essential to share knowledge for innovation and development of new products. As the firm develops add-in software for larger software developers, it is the strategic alliances that provide the main source of international sales, with general sales
enquiries received via the firm’s website. The firm’s business success comes from the founder’s knowledge of the market and applications, and being internationally focused with strategic partners.

The firm’s main capability is developing software applications for CAD applications. The internet also provides a platform for software development collaboration and testing among teams for new products with customers. Innovation is the firm’s source of new ideas. ‘If you can try and add a new feature that appeals to people, it makes it easier to sell your product’ stated by the founder. One idea the firm was experimenting with was establishing a presence in Germany by creating a German version of their products and German versions of their promotional material for their website to increase their German market.

**External Environment**

International strategic alliances have been particularly important to Case 5 business in terms of internationalization. Developing software add-ins for global companies has enabled sharing resources such as marketing and has minimized the risk involved in acquiring internal resources such as employees. Collaboration with partners has fostered innovation for new product development, as explained by the founder:

> If you can try and add a feature that appeals to people, it makes it easier to sell your products. If you can come up with a clever feature, people will buy your products.

However, Case 5 firm is the smallest firm among the sample in terms of size and sales due to unproductive experiences with Austrade for government export support and software piracy issues with China. The founder described Austrade services as too expensive at $190 per hour ‘for someone to run around and do the work and waste time’. Attending trade missions did not have a positive result, according to the founder, who has not used Austrade services for a while. As for China, the Chinese market opens new opportunities but dealing with China presents a lack of ethics when it comes to protecting software. According to the founder, ‘Every company in China I have dealt with uses pirated software’ and that is the reason the firm pulled out of that market. For software firms it is safer and more profitable to target US and European markets as they have anti-piracy laws.
Case 6

Firm Background

Case 6 is a privately owned Australian company with more than 20 years’ experience in the development of electronics and software for commercial aviation related applications. The firm’s technology focus has broadened from its initial developments for aviation to the development of systems and products which can be adapted and enhanced to meet specific customer requirements.

The firm provides both an independent platform and PC-based hardware and software systems that allow developers and users of datalink systems to emulate and engage in datalink operations between a ground station and an aircraft. The primary purpose of these systems is to replace either the aircraft system or the ground station system in test and development configurations.

Founder/Manager Characteristics

The respondent in Case 6 is the founder and managing director of a small ICT software firm, which is a specialist company that develops software for the aviation industry and was established in 1989. The founder initially developed software on a part-time basis and went fulltime after receiving a large order from the US which involved the development and organization of the product. The founder sees himself as having strong organizational skills and know-how. His key skills are market knowledge and his technical background as an avionics engineer; he has no business education. His international networks have contributed to the firm being a born global, with its first sales to the US.

International Entrepreneurial Opportunity Process

The aviation industry is a global business with great potential as the numbers of people travelling are increasing. The founder explained that they were semi-committed to the business when they started but increased commitment after their first major international opportunity.

We started the business on a part-time basis. I guess the purpose of that interim period was to see how viable the business would be globally and during that time we actually built up a base product line and made sales and we did some development work for other businesses mostly overseas and then we got one large order that made it impossible to handle on a part-time basis. It involved development, fabrication, organization and manufacturing. That was the trigger in going full-time internationally.
Case firm 6 is a member of Radio Technical Commission for Aeronautics; RTCA today includes about 400 government, industry and academic organizations from the United States and around the world. Member organizations represent all facets of the aviation community, including government organizations, airlines, airspace users and airport associations, labor unions, plus aviation service and equipment suppliers. Some of the main members include the Federal Aviation Administration, Air Line Pilots Association, Air Transport Association of America, Aircraft Owners and Pilots Association, The Boeing Company, Department of Defense, Stanford University, Lockheed Martin, MIT Lincoln Laboratory, and NASA. As a member Case firm 6 shares knowledge for new innovations and RTCA provides opportunities for global exploitation.

**Internationalization of the Business**

From establishment this has been a born-global firm with a rate of growth of 100% in its last financial year, achieving sales in the less than A$1 million bracket. Through the founder’s international network, the firm started exporting to the US, Italy and Brazil. It has recently expanded its markets by establishing international relationships through agents at tradeshows and selling direct through its website. It is now exporting to five countries.

The firm’s main business objective is to create wealth through increasing profitability and the value of the business. The firm relies on retained profits for its main source of finance and uses cash flow and shareholders’ funds to operate the business. The firm relies on external business advice from its accountant for financial management and its solicitor for legal advice. It receives informal advice from family and friends.

**Firm Characteristics**

At the time of the interview the firm employed ten full-time people which included four managers, none of whom have business qualifications. The managing director and the engineering director are partners in the firm. They have planned their succession for retirement by grooming the general manager to succeed the managing director and the electronics manager to succeed the engineering director. The successors are being mentored for their roles and have a vested interest in the firm with minor shares which will be increased once succession takes place.
Firm Capabilities

The aviation industry truly represents an international environment, which has provided the founder an international market that is highly conservative and demanding on quality assurance and safety. The aviation industry has a small number of clients with very frequent sales. The firm continues to do business in this niche as its competitive advantage is its market and product knowledge. This competitive advantage gives the firm the capability to develop innovative products which maintains its leadership in the field.

As a software developer Case firm 6 has built capabilities in rapid prototyping of new solutions for aviation systems and emulation markets. The firm’s customers are the systems developers for the airlines who are proactive in seeking new products and services that will enable faster and cheaper aviation management solutions. The actual products are unique to each customer so the firm continues to invest in technical expertise learning new development systems. For example the firm used to develop software in low level languages such as Fortran and now they are building systems in high level languages such as C++ running on personal computers and on the internet.

External Environment

Global opportunities are contributing to the firm’s business success as exporting has affected its growth in a positive manner. In order to increase export sales, the firm is in negotiations with strategic partners to achieve further growth internationally. The founder commented:

The business is built on producing innovative products which is why we are leaders in the field.
Our purpose for going international has been the reason why the company started and has grown.

Researcuing how to export and the amount of regulation involved in exporting is time consuming for SMEs. The founder commented that ‘The regulatory issues in exporting are an area where the government should provide resources to help exporters’. This highlights unawareness of Austrade’s export grants and export services. If the founder had of been aware of Austrade services Case firm 6 may have expanded faster than their current situation. Therefore, industry networking may not be enough to recognize global opportunities; firms should attend cross industry networking events.
Case 7

Firm Background

Case 7 is the largest privately owned qualitative research software developer in the world with offices in North America, the UK and Australia and an international network of resellers and independent trainers covering the Americas, Europe, the Middle East, Africa, Asia Pacific and Latin America. The firm’s products and services are used by academic, government and commercial organizations in more than 150 countries. More than 400,000 individuals and teams use the software and a further 500 organizations hold site licenses.

From health research and social policy to human resources and finance, the software is used by organizations including Yale University, World Vision Australia, the UK Policy Studies Institute and Progressive Sports Technologies. The firm’s team is passionate about delivering outstanding software and services to its customers and its efforts have been recognized internationally by awards from Dell, The Age/Dunn & Bradstreet, Victorian Export Awards and Australian Information Industry Association, to mention only a few. An example of the firm’s innovation is that its products were used to train coaches for the 2012 Olympic Games.

Founder/Manager Characteristics

The respondent in Case 7 is the Chief Technology Officer (CTO) of a medium-sized ICT software firm, which is a specialist company that develops qualitative analysis software for social research and was established in 1995. The founders sold the business in 2006 and there is a new board of directors. The CTO has key skills in software development and methodologies with a background in business systems and the telecommunications industry.

International Entrepreneurial Opportunity Process

The CEO developed international business through sales channels and designing products with many language capabilities. The firm’s main focus is on innovation to become the world leader in the field in five years. Significant revenue comes from the US, the UK and the EU. The firm is in a new stage of growth where a shift in international university research is opening new opportunities. The CTO explained the firm’s competitive focus:

We are aggressively focusing on international market development; it has created opportunities to increase innovation through more feedback from different countries, as our software gets used in different ways. Our business success comes from our focus on international markets which keep us in business.
The aggressive approach of the management team and their international strategy is driving business success. They are building firm capabilities to be the leader and innovator in their field to exploit global opportunities. Case firm 7 has become the only developer in their industry to earn Microsoft Network Gold Independent Software Vendor status. The benefits of being a Microsoft Partner provides strategic opportunity exploitation services for creating customer demand, proof-of-concept testing and customer insight.

Partners have access to Pinpoint online marketplace a service that enables to create customer demand that has global reach to showcase applications and services in multiple markets and languages. Several features are as follow, first real time analysis of customer traffic to the firm’s profile and customer ratings can be reviewed providing important feedback. Second, application selling tools like demonstrations, trials and downloads can be made available to customers. Third, relevant prospect details are emailed to take informed actions when responding.

Technical presales assistance is provided to partners by Microsoft to test proof-of-concept deals worth US$3000 or more. This enables the firm to provide rapid prototyping to develop and maintain leading edge products and services in the analysis software industry. Partners also, receive insight into customer satisfaction and loyalty with the Customer Satisfaction Index survey that provides global insights into Microsoft customers and potential opportunities to exploit.

**Internationalization of the Business**

The firm exports via online marketing, which the firm claims provides the best profit margins and easiest distribution channel with full international market expansion commitment from the board of directors and management team. The formal networking methods used by the firm are mainly conferences and the use of Austrade for international networking. The firm has a strategic plan to drive the business and an export marketing plan to drive export sales. Its financial performance is measured through its profit and loss statement. All employees have job descriptions and the firm provides management training for employees.

The firm has developed a five-year innovation strategy to maintain the leadership in its field and it manages innovation through a product development plan. Forming strategic partnerships with Microsoft and Citrix enable the firm to receive technical support and firsthand knowledge of features and capabilities with the latest software platforms allowing the firm to stay up-to-date with customer demands. Technical training of employees enables
the firm products to receive certification providing credibility of tested applications and peace of mind for potential customers.

The new management team is focused on international expansion, which has averaged 85% of export sales in the last three years with expansion into 100 countries. A new opportunity for growth has been identified in universities that are attempting to improve the quality of their research to increase their rankings. These opportunities are tracked through the firm’s client relationship management system to monitor sales through their website. The firm also monitors and collaborates with universities to improve data analysis and provide training for research projects.

**Firm Characteristics**

The business employs 50 full-time people including four managers, of whom the CEO is the only one without business education. The firm started exporting in 1995 and its rate of growth has averaged 20% for the last three years to achieve sales in the A$6–9 million bracket with export sales averaging 85% for the last three years. The two main destinations for exports have been the US and the UK. Currently the firm is exporting to 100 countries.

Increasing the value of the firm is the main business objective for this firm, with the intention to increase profitability in order to grow the business. The firm uses retained profits as its main source of capital and uses shareholders’ funds to manage the firm’s operations. The main sources of advice used by the firm are its accountant for financial management, its bank for finance and its solicitor for legal advice.

**Firm Capabilities**

This firm is in a growth phase which has established itself as a world leader in qualitative software. The CTO has been employed to improve the software development capabilities of the firm to develop products that require international support and local language capabilities. The firm’s five-year innovation strategy has the objective of retaining leadership in products and innovation within its industry. International strategic partnerships have supported global expansion and knowledge creation within the firm to maintain their leadership position.

The firm continues to build its technical competencies with Microsoft and Citrix platform certification. In order to build global competency all software developers working for the firm have earned Microsoft Certification and software testers have all achieved International Software Testing Qualifications Board certification. ICT industry is rapidly creating new
markets and building technical expertise in-house is a major competitive advantage for software firms such as Case 7. Partnering with software industry leaders such as Microsoft, provides industry trends and forecasts for new technology directions such as cloud computing. Forecasts enable the firm to reconfigure capabilities to exploit new technologies and integrate them with their existing products allowing seamless transition to new technologies for their customers while maintaining continuous analysis and research.

**External Environment**

Global opportunities have helped the firm focus on international market development through feedback from countries that use their software. The feedback has increased innovation for multiple languages and functionality in using software products. For example the firm’s analysis software was used to train coaches for the 2012 Olympic Games. The CTO of the firm believes that having expertise in a niche market allowed the firm to go global.

On the other hand, the CTO commented that while Australia is a small ICT market, the change in government has shrunk the ICT industry by cancelling the commercial-ready grant which provided funding for new ventures in ICT. He added that the government’s focus was on growing the gaming industry instead of the ICT industry and so it was better to expand overseas.

**Case 8**

**Firm Background**

In 2000, this firm grew out of the simple idea that project information and processes could be managed better online. That idea has now become the most widely-used collaboration platform in the world for construction and engineering projects. Before long, the firm’s clients started to use the platform on overseas projects across all regions, helping the company to become one of the most global software businesses in the world.

Today, the firm operates from almost 40 offices in North and South America, Europe, Africa, the Middle East, Asia and Australia. The firm’s experience in working with thousands of clients has made it the leading provider of online collaboration for commercial and residential, government and infrastructure, and energy and resources projects of all sizes.
Founder/Manager Characteristics

The respondent in Case 8 is the General Manager of Marketing (GMM) of a medium-sized ICT software firm, which is a specialist company that develops and hosts content management applications for the construction industry as an application service provider (ASP). It was established in 2000. The key skills the GMM brings to the firm are market planning, delivery of the marketing plan and building marketing teams. The GMM is qualified in information systems with 22 year’s experience in international marketing and a business qualification.

The firm has a strategic plan to drive the business and an export marketing plan to drive export sales. Its financial performance is measured through its profit and loss statement. All employees have job descriptions and the firm provides management training for employees. The firm uses innovation management as a business technique to maintain the leadership in its field. It manages innovation through product planning and encourages its employees to experiment with new ideas.

Comments by the General Manager of Marketing:

We are the largest provider in the markets of what we do. Our strategy is to grow and be ahead. We have succeeded in growing internationally in the last four years as our management structure has allowed that to happen so for example one of our senior managers is the global sales director who is based overseas. I think that is very much what we set out to do. Our strategy has been to become the biggest provider worldwide.

In terms of innovation exporting has forced us to innovate a little bit whatever part of the business you look at whether it is the service delivery on the client operation side, whether it is our product development, marketing or sales. We are pretty much innovating all the time, there are always new challenges and new languages to deal with. So exporting certainly has made us more innovative.

International Entrepreneurial Opportunity Process

The firm started by exploiting its first product domestically in the construction industry. In terms of the product, the firm was one of the first companies in Australia, the UK and the US to develop an online information platform. ‘The success of our customers’ expansion into the Middle East allowed us to follow them and also expand internationally.’ The GMM also commented:
If we had not become so global so quickly we would not have had such opportunities. We would still be doing well in Australian market but we would not have moved into the Middle-East market.

As stated, global opportunities allowed the firm to expand quickly in size and sales, achieving high growth. But high growth has had its disadvantage in that the firm has had to slow down its expansion into other regions and focus on the Middle-East market. As a premium provider of application services, building capabilities to ensure their customers are able to use their software effectively, the firm trains their customers at no cost and ensure a high quality service. Free training has been a driver for competitive advantage with word-of-mouth marketing for the firm.

Internationalization of the Business

The Case 8 firm exports directly to its subsidiaries online, and has used other networking methods such as tradeshows, government agencies, Austrade and chambers of commerce to expand its markets as it has a strong commitment to international expansion.

The firm has committed to international expansion, resulting in the recruitment of the GMM, who is focused on an international strategy to take advantage of the construction and energy sectors in the Middle East and Asia. These developments have opened opportunities for the firm to become internationally market oriented. The GMM stated, ‘If we had not internationally expanded, we would only be a successful Australian firm and not a world leader’. Without exports the firm would have achieved less than half of its current growth and export sales. As an application service provider the firm enters international markets with opening subsidiaries to support their products and services running in their data centers.

Out of all the samples cases Case firm 8 have worked with Austrade and the Victorian government to introduce them to local markets. Case firm 8 then established offices in the local market and contacts Austrade representatives to meet with locals who can help them build networks. Following networks the firm recruits sales and marketing staff to grow the local business.

Firm Characteristics

The firm employs 120 full-time people including eight managers who all have business education except for the CTO. The firm started exporting in 2002 and rate of growth has averaged 100% for the last three years with exports increasing from 45% to 60% within three
years to achieve sales in the A$50–99 million bracket. Currently the firm is exporting to 45 countries.

Increasing the firm’s growth is the main business objective, with the intention to increase profitability and the value of the business. The firm uses shareholders’ funds as its main source of capital and uses bank loans and cash flow to manage the firm’s operations. The main sources of advice used by the firm are its accountant for financial management, the bank for finance and Austrade for international networking.

**Firm Capabilities**

As an application service provider, the firm has built global capabilities. Offering application service requires data centers with huge amounts of computing power and storage. The first data center was in Melbourne and now there are six data centers around the world, providing a robust and efficient service. The key driver of growth has been the firm’s website that provides an international presence and generates new business, which has contributed to exports to 45 countries. The firm has a long-term plan to achieve its growth targets by building their technical expertise and support their global operations.

**External Environment**

Global opportunities open new markets and, with Australia being a hostile home market, the GMM explained that without global markets the firm would not have achieved its current growth:

> Exporting has been our key driver of our business success. If we had not expanded we would only be a successful and profitable Australian company. There are 2 or 3 other countries who do what we do in Australia. If had not internationalized we would be one of them and we would not be the leader no more than that. In terms of revenue, our export business is now well over 60% it would be half and maybe we would have 70 or 80 people tops.

The GMM pointed out that global expansion may be attractive to SMEs who want to grow their business. They should consider not more than 20 countries to enter as exploiting any opportunity that arises may not be profitable. It is suggested that SMEs should evaluate their capabilities and target opportunities that are profitable and do not require many changes to organizational resources.
4.3 Summary of Cases

In summary, the cases provide a wealth of experience in the ICT industry which has contributed to the identification of opportunities and the exploitation of new ventures in the domestic market. International opportunity recognition and exploitation have been influenced by involvement in international networks. The cases demonstrate entrepreneurial actions by taking high risks in entering international markets. It seems that Australian ICT entrepreneurs need to go global when deciding to start a new venture if they are going to create wealth. The next section presents a cross-case analysis of the sample cases.

4.4 Findings and Discussion: Cross-case Analysis

Utilizing a cross-case analysis of eight case studies, this section addresses the five questions derived from the literature review reported in Chapter 2. A principal aim of cross-case analysis is to derive conclusions, moving beyond the initial insights of individual cases. Key findings across cases are discussed within the context of a conceptual framework derived from the literature review. This section examines the how and why of the findings from the eight case studies and discusses them in relation to the current literature. Being qualitative research, any patterns found in the data that relate to the research questions are presented and reasons for those patterns suggested (Perry 2002). The next section presents data relevant to the research questions. Section 4.5 summarizes and concludes the chapter.

Overall, the findings support the proposition that entrepreneurial internationalization is a dynamic and adaptive phenomenon (Evangelista 2005; Coviello, McDougall & Oviatt 2011; Jones, Coviello & Tang 2011). The key findings in this study are germane to the gaps in the literature on entrepreneurship as the primary theme in international entrepreneurship. Firstly, opportunity recognition of the first product, service or process is exploited through the start-up of a new business in the domestic market. Secondly, international opportunity recognition of products, services or processes is exploited through dynamic international strategies based on the opportunity at hand. Thirdly, founders and managers measure business success against wealth creation (i.e., sales, profitability and growth), not against the age of internationalization or export intensity. Fourthly, firms adapt capabilities to the opportunity at hand and collaborate with internal and external stakeholders to create wealth.
4.4.1 Patterns of Data for Each Research Question

The research questions that guided data collection are repeated here and the findings relating to each of these research questions are discussed in the next section.

RQ 1: How do Australian ICT SMEs recognize and exploit international opportunities?

RQ 2: How do international opportunities influence Australian ICT SMEs internationalization?

   RQ 2.1: How do firm characteristics influence internationalization?

   RQ 2.2: How do firm capabilities influence internationalization?

   RQ 2.3: How does the external environment influence or impede internationalization?

RQ 1: How do Australian ICT SMEs recognize and exploit international opportunities?

The cross-case analysis reveals firstly that technical/industry experience, international experience, entrepreneurial intention and risk taking are the driving factors of entrepreneurial internationalization. Secondly, the international entrepreneurial processes of discovery, enactment, evaluation and exploitation during the creation of an international new venture are unstructured, with overlapping stages of opportunity recognition and exploitation. This section examines the factors involved when firms recognize and exploit international opportunities, as perceived by the participants interviewed in the study (Table 4.3). The findings are summarized in Table 4.11.

Technical, Industry and International Experience

Table 4.1 illustrates that all the respondents had a working knowledge of ICT systems from accumulated experience of 15 to 25 years in telecommunications (Cases 1, 2, 3, 4 and 5), aviation (Case 6), software development (Case 7) and information technology systems (Case 8). While working in various ICT industries, all the respondents built strong relationships within the companies they worked for and developed relationships with customers and suppliers.

Technical and Industry Experience

As respondents in all cases have worked in knowledge-based industries, their technical and industry experience was instrumental in identifying gaps in technology markets for
developing products and services to meet customers’ needs. For example, the founder in Case 5 identified that his ‘market knowledge and technical background’ was the key factor in recognizing a gap in add-in software products in the computer-aided design industry.

Table 4.2: Founder/manager characteristics and traits

<table>
<thead>
<tr>
<th>Case</th>
<th>Technical/Industry Experience</th>
<th>International Experience</th>
<th>Entrepreneurial Intention</th>
<th>Risk-taking Propensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Electronic Engineer in telecommunications industry</td>
<td>Founder and CEO 15 years industry experience International contacts</td>
<td>Proactive in opportunity identification and exploiting first product</td>
<td>Founder perceived to receive high rewards and success in new venture</td>
</tr>
<tr>
<td>2</td>
<td>Harbour Engineer Electronic Engineer in telecommunications industry</td>
<td>Founder and CEO Visionary/ opportunistic 20 years’ experience International contacts</td>
<td>Proactive in merger of three firms in telecommunications industry</td>
<td>Founder perceived to receive high rewards and success in new venture</td>
</tr>
<tr>
<td>3</td>
<td>Electronic Engineer in telecommunications industry</td>
<td>General Manager Operations 25 years in telecommunications industry International contacts</td>
<td>Proactive towards exploiting products and services to international markets</td>
<td>Manager perceived to receive high rewards and success in international opportunities</td>
</tr>
<tr>
<td>4</td>
<td>Electronic Engineer in telecommunications industry</td>
<td>Founder and CEO 25 years in telecommunications industry International contacts</td>
<td>Proactive in management buy-out of corporate spin-off</td>
<td>Founder perceived to receive high rewards and success in new venture</td>
</tr>
<tr>
<td>5</td>
<td>Electronic Engineer in telecommunications industry</td>
<td>Founder and CEO Knowledge of the market 25 years’ experience International contacts</td>
<td>Reactive towards international new venture creation</td>
<td>Founder perceived to receive low rewards and success in new venture</td>
</tr>
<tr>
<td>6</td>
<td>Avionics Engineer in aviation systems</td>
<td>Founder and MD Technical know how 25 years’ experience International contacts</td>
<td>Turned full-time after large international opportunity</td>
<td>Founder perceived to receive low rewards and success in new venture</td>
</tr>
<tr>
<td>7</td>
<td>Information Systems programmer in Information technologies</td>
<td>Chief Technology Officer 20 years’ experience in software development International contacts</td>
<td>Proactive towards exploiting products and services to international markets</td>
<td>Manager perceived to receive high rewards and success in international opportunities</td>
</tr>
<tr>
<td>8</td>
<td>Information Technology expert in IT systems</td>
<td>GM Marketing Market planning 22 years’ experience International contacts</td>
<td>Proactive towards exploiting products and services to international markets</td>
<td>Manager perceived to receive high rewards and success in international opportunities</td>
</tr>
</tbody>
</table>
**International Experience**

International experience and participation in networks drive founders or managers to pursue opportunities in foreign markets (McDougall, Shane & Oviatt 1994; Madsen & Servais 1997). The respondents in all cases had international experience in international companies where they built relationships and contacts in the ICT industry. The five founders used their technical and industry experience and international experience to recognize an opportunity and used their established networks to exploit their first product and startup an international new venture. The three managers were employed after start-up to utilize their technical and industry experience, international experience and international contacts to plan for simultaneous exploitation of global opportunities in multiple markets and geographic regions.

The international experience of founders allowed them to identify opportunities and internationalize within eight years of inception. The founder in Case 1 stated that ‘international experience was important in building relationships in our target markets and other companies in the industry’. These relationships assisted in early internationalization and exploitation of their first software product that managed wireless networks. The respondent in Case 3 gradually built international experience through developed relationships with international organizations and governments at conferences and via Austrade introductions with potential clients. The General Manager in Case 3 recognized the importance of strong industry networks: ‘Our founder knows our market and believes relationships are extremely important. He basically attends every forum where there is an opportunity to present what our company is doing, what our product is, how it fits and so on’. Evangelista (2005) supports these findings that previous experience and international contacts drive founder-managers to pursue opportunities in foreign markets. Madsen and Servais (1997) also say that international experience is a key driver for internationalization.

In this study the process of opportunity recognition and exploitation by the respondents was the result of (1) adaptation of previous technical and industry experience and (2) accessing networks through primary and secondary links. These links consisted of many types; including existing business and social contacts, and ties with customers, suppliers, service providers and professional associations.

Table 4.2 shows that the discovery of opportunities is related to knowledge already possessed. For example, knowledge of wireless networks led to the founding of the firm in Case 1, knowledge of telecommunications led to the founding of the firms in Cases 2 and 3, and
knowledge of computer-aided design led to the founding of a software firm in Case 5. These findings support Shane’s (2000) finding of the role of relevant knowledge in the international entrepreneurial opportunity process.

**Entrepreneurial Intention**

Entrepreneurial activity is intentionally planned behavior and not a reflex action (Krueger, Michael & Carsrud 2000; Shook, Priem & McGee 2003; Evangelista 2005). Three of the five founders were proactive and the other two founders were reactive in international opportunity recognition, exploitation and firm start-up. Three managers were active in international opportunity recognition and exploitation. These patterns are analyzed next.

The cross-case analysis in Table 4.3 reveals active intentions or reactive assessment by founders for the creation of an international new venture. On the basis of the cases studied, each firm had at least one founder who had a strong entrepreneurial intention or who was faced with a personal situation that led to the founding of a new venture. The founders of five firms (Cases 1, 2, 4, 5 and 6) used their technical and industry experience to identify a product gap, and entrepreneurial intention influenced their decision to exploit a product that would fill the gap in the niche market they identified. The three managers were employed to use a combination of technical and industry experience, international experience and international contacts to discover new opportunities and exploit them globally.

For example, the respondent in Case 4 explained how his international and industry experience triggered the identification of an opportunity and interest in creating a new firm. He relied on strong ties with his international networks to assist his commitment to starting his firm. The founder then sought new information and feedback by demonstrating the viability of his business plan. This led to a greater commitment of time, effort and resources to exploit the opportunity, and ultimately led to international new venture creation. The founder in Case 4 explained:

> Prior to [this firm] I worked at Olex cables for 13 years and I was employed at Olex cables to actually build an engineering projects group which was going to be a very successful venture. Pacific Dunlop which owned Olex around in the late 90s was having some problems. They decided as a corporation to get out of telecommunications and their strategy was to divest the company and sell all pieces. This basically meant the group I developed became redundant.

The reactive assessment of an opportunity is illustrated in Case 5. Frustration with his current organization and dissatisfaction as an employee were expressed by the founder in Case 5 as reasons for starting his own business. When the decision to leave that employment was made,
the founder had already spent personal time on developing the new firm’s first product. The founder was terminated by his previous employer, identified an opportunity and negotiated a deal to provide software training to his ex-employer’s customers. The founder’s knowledge of software development led to the discovery of an opportunity in add-in tools for computer-aided software. Next, the founder turned to his primary networks, gained their commitment for marketing the add-in software and subsequently refined the opportunity until he was willing to make a greater commitment to developing and selling software add-ins. The founder in Case 5 commented:

I cut a deal with my former employer to conduct some training work for them. At the time they were a software company and were trying to encourage other software companies to develop add-ins for their product. I thought maybe I would start a software business developing add-in tools for their products. Because I knew the market very well and knew the efficiencies in their product that could be filled in with a company like mine. Being able to do training for them meant some cash flow. That is how I started the business and developing some products and was doing training and there was an immediate income.

Three managers were employed after the creation of firms to plan for international growth. These managers built capabilities in offshore manufacturing, product development and international marketing. The difference between the founders and these managers is that during start-up, the founders’ intentions focused on exploiting their first innovation in their first international market whether it was geographically close or distant. However, the managers brought in specialized skills and knowledge to increase overseas growth and build capabilities for low-cost production of hardware (Case 3), new software development techniques (Case 7), and international marketing and building overseas subsidiaries (Case 8).

In this study the cases reveal that having previous experience and resources is not sufficient for opportunity recognition and exploitation, which require the ability to envisage new relationships and to combine them in new ways. The findings show that in addition to ability, seeing and exploiting opportunities involves an attitude to new possibilities in the internal and external environments. Through active and reactive intentions, a firm or individual can be exposed to new ideas, resources and opportunities to perceive new means-end combinations.

Based on entrepreneurial intention, two paths for creating an international new venture were identified for exploiting an opportunity: active and reactive intentions. Most of the founders were active to the opportunities identified and focused on getting their first product to market. This finding is supported by Evangelista (2005). Shane (2000) states that people are more
likely to discover opportunities in the sector that they know. Entrepreneurial intention also influences risk-taking in international new venture creation.

**Risk-Taking Propensity**

The propensity for risk taking is defined as ‘the perceived probability of receiving the rewards associated with success of a proposed situation, which is required by an individual before he will subject himself to the consequences associated with failure, the alternative situation providing less reward as well as less severe consequences than the proposed situation’ (Brockhaus 1980, p. 514). Three out of the five founders perceived that starting an international new venture would receive high rewards and success. The other two founders perceived that starting a new venture would receive low rewards and success. All of the three managers perceived that international opportunity recognition and exploitation would receive high rewards and success. The patterns identified among the cases are: (1) founders with high risk propensity, (2) founders with low risk propensity, and (3) managers with high risk propensity.

**Founders with high risk propensity**

High rewards and success proved to be beneficial to the founders in Cases 1, 2 and 4. Their intentions to start a business created the need to continuously scan the environment for new opportunities. The respondent in Case 1 explained how his firm takes risks in new opportunities:

> We commit large sums of money to new products and ideas. I think when we have a clearly identified need or customer, we are comfortable about that, but we always tie our investments back to a very contained approach to the returns on that and in other words if we have a potential customer for a product we are more willing to commit investment as long as they are locked together.

The respondent in Case 4 said the four founders of the firm had taken the risk of using their own assets to fund their venture as they were debt averse. The founder commented on how they are seeking further funding to grow the business:

> Well we are financing everything in the house so you can only chew off a bit at a time. It has taken us ten years to get the sort of interest with the banking world. That means we can get access to more substantial financial products. I think the reason we are talking with the banks is about the next level of growth. The next opportunities that we are working on are bigger opportunities that we have never worked on before. We are moving to another league and we need the right finance to grow.
Founders with low risk propensity

The founders in Cases 5 and 6 had no idea they would be running a successful international ICT business. When the founder in Case 5 lost his job, he could have easily found employment elsewhere. However, his recognition of a product gap enabled him to start his venture. He stated his approach towards risk:

We are pretty conservative with risks, we are financing this business through a redraw facility on my house. Also, we are very conservative with venturing into new markets. For example when I was talking about developing products for [a particular company], the only risk was the time it took to develop the product. If I have got to invest some money upfront I will not take much risk.

On the other hand, the founder in Case 6 started a part-time business and was conservative about spending money. When the firm got its first large order, it committed financial resources to delivering the order. The founder explained:

When it comes to financing, we are conservative and careful with money. When our customers ask us for specific solutions, we are comfortable with venturing into new markets and will commit large sums of money to new ideas and projects.

Managers with high risk propensity

In comparison to the founders, managers may not be spending their own equity in the business. However, they are still committed to achieving the goals of the business’s international growth as their rewards depend on achieving them. The General Manager in Case 3 commented on the importance of research and development to maintain product leadership and increase sales:

We are very high risk-takers. Literally our predominant budget is research and development. Absolutely nothing daunts the founder except for the fear that somebody may pirate our intellectual property or clone the product. So we venture into new markets and are willing to commit large sums of money to new ideas.

As firms grow, risk is calculated on return on investment and achievement of business objectives. For example, the firm in Case 8 expanded into 45 markets, employs 130 staff and has total sales of nearly $100 million. To control their spending, they have introduced controls and processes to manage their finances. In terms of venturing into new markets, they evaluate the opportunities and take calculated opportunity risks. As part of the international opportunity evaluation process, the General Manager of Sales and Marketing categorizes international markets according to digital capabilities. Then markets are segmented into suitable and unsuitable. Unsuitable markets need to have high penetration. A market such as
Indonesia, for example, is assessed as not yet ready for something that is offered, so Indonesia would not be included on the opportunity map. The Manager also looks at language factors. If a new language needs to be introduced for that market, then he would think very carefully whether the firm could exploit other markets instead. The Manager commented on the firm’s approach to risk taking:

We are comfortable with venturing into new markets and commit large sums of money to new projects. I think we are not reckless about our project development plan. For example, we have probably doubled the size of the project development team. That is a significant amount of money put into products and is likely to continue so you would have to say that we are comfortable with making those kinds of decisions.

These findings illustrate how risk-taking propensity differs between founders during international new venture creation and managers of established firms. In summary, the founder and manager characteristics are similar in that both have acquired skills and experience in a knowledge-intensive industry that is global in nature and environmentally turbulent. Previous experience and international networks have enabled internationalization for all firms. It seems that, through an entrepreneurial perspective, the level of entrepreneurial intention and risk-taking categorizes the interviewees into entrepreneurially active high risk-takers versus entrepreneurially reactive low risk-takers. These factors drive founders and managers in their international opportunity recognition and exploitation.

This study indicates that the level of risk-taking propensity does not distinguish new entrepreneurs from managers when the managers perceive they will be rewarded for their success, and this is supported by Brockhaus (1980). This study adds the finding that founders of international new ventures who are low risk-takers are able to start successful firms due to previous experience and international networks. In contrast, entrepreneurially active high risk-takers commit more financial resources and grow faster in firm size and firm sales. These related findings are discussed in the section on Research Question 2.

**International Entrepreneurial Opportunity Process**

International entrepreneurial actors discover, evaluate and exploit opportunities across national borders to create future goods or services (Oviatt & McDougall 2005). Actors are regarded as founders, teams or ventures, and the founder or team is central to the dynamics of international opportunity recognition and exploitation.
The cross-case analysis reveals that the international entrepreneurial processes of discovery, enactment, evaluation and exploitation of the first product are unstructured, with overlapping stages of opportunity recognition and exploitation (Table 4.3). Five out of the eight firms were active in their discovery or enactment of international opportunities. All firms had unstructured processes for opportunity evaluation during international opportunity exploitation. Most of the firms exploited their first products through international networks, enabling early internationalization. Three patterns emerged in opportunity recognition and exploitation: international opportunities, global opportunities and strategic opportunity-seeking and exploitation. These patterns are analyzed next.

### Table 4.3: International entrepreneurial opportunity process

<table>
<thead>
<tr>
<th>Cases</th>
<th>International opportunity recognition &amp; exploitation</th>
<th>Global opportunity recognition &amp; exploitation</th>
<th>Strategic opportunity-seeking and exploitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Due to prior experience and networks, product gap was discovered. Unstructured opportunity evaluation processes during firm creation.</td>
<td>Ambiguous about difference between internationalization and globalization. International market exploited through international network and experience.</td>
<td>Systematically planned and implemented for global opportunity evaluation and exploitation.</td>
</tr>
<tr>
<td>2</td>
<td>Actively pursued formation of merger. Unstructured opportunity evaluation processes during firm creation.</td>
<td>Ambiguous about difference between internationalization and globalization. International market exploited through international network and experience.</td>
<td>Systematically planned and implemented for global opportunity evaluation and exploitation.</td>
</tr>
<tr>
<td>3</td>
<td>Due to prior experience and networks, global opportunities and product gaps are discovered. Unstructured opportunity evaluation processes during firm creation.</td>
<td>Ambiguous about difference between internationalization and globalization. Domestic opportunity exploited first. International market exploited through international network and experience.</td>
<td>Systematically planned and implemented for global opportunity evaluation and exploitation.</td>
</tr>
<tr>
<td>4</td>
<td>Actively pursued purchase of business spinoff with partners. Unstructured opportunity evaluation processes during firm creation.</td>
<td>Ambiguous about difference between internationalization and globalization. International market exploited through international network and experience.</td>
<td>Systematically planned and implemented for global opportunity evaluation and exploitation.</td>
</tr>
<tr>
<td>5</td>
<td>Reactive towards opportunity created from retrenchment. However, pursued INV creation through international networks. Unstructured opportunity evaluation processes during firm creation.</td>
<td>Ambiguous about difference between internationalization and globalization. International market exploited through international network and experience.</td>
<td>Systematically planned and implemented for global opportunity evaluation and exploitation.</td>
</tr>
<tr>
<td>7</td>
<td>Due to prior experience and networks, global opportunities and product gaps are discovered. Unstructured opportunity evaluation processes during firm creation.</td>
<td>Ambiguous about difference between internationalization and globalization. International market exploited through international network and experience.</td>
<td>Systematically planned and implemented for global opportunity evaluation and exploitation.</td>
</tr>
<tr>
<td>8</td>
<td>Due to prior experience and networks, global opportunities and product gaps are discovered. Unstructured opportunity evaluation processes during firm creation.</td>
<td>Ambiguous about difference between internationalization and globalization. International market exploited through international network and experience.</td>
<td>Systematically planned and implemented for global opportunity evaluation and exploitation.</td>
</tr>
</tbody>
</table>
International Opportunity Recognition and Exploitation

International opportunities may exist in multiple markets within one region (McDougall 1989). Most of the firms discovered opportunities to develop a new product based on their technical and industry experience to fill a product gap, except for the firm in Case 4. The founders who used unstructured opportunity evaluation processes were only interested in getting their first product to market. This was achieved through their international experience and international networks, which gave them the confidence to exploit the opportunities. The respondent in Case 1 commented, ‘I don’t think we have an opportunity evaluation process. I wouldn’t say we use processes or systems to identify opportunities necessarily, it is more about being out there’. Case 1 highlights the unawareness of opportunity evaluation processes and the reliance on previous experience for identifying opportunities.

The discovery and implementation in Case 4 illustrate how the founder seized an opportunity to start an international new venture. The founder developed a business plan that was successful in convincing his former employer to divert business to the new firm. The business plan was also instrumental in attracting the founding team members to invest and become partners in the firm. The founder in Case 4 said:

So, I had a year prior to this happening and put a business plan together for Olex to spin the company off. It had outgrown being part of cable manufacturing, so I sort of dusted my plan off, grabbed a few guys, took our retrenchment money and started [the firm], that’s how it started.

Global Opportunity Recognition and Exploitation

Global opportunities may exist in multiple markets within multiple regions (McDougall 1989). The cross-case findings reveal that opportunities feed of each other as the innovation or exploitation of one can simultaneously lead to others in a way that cannot be envisaged in advance. This depends on the accumulation of new information and through interactions and commitment with previous and new linkages, co-adapting the requirements and co-developing the resources with established and new linkages. The cases show that the patterns of opportunity linking relate to: (1) international opportunity recognition and exploitation, and firm creation, (2) interactions between international opportunities and global opportunities, and (3) strategic opportunity seeking and exploitation.

As indicated in Table 4.3, the lessons learned from firm creation develop a model for the development of other opportunities, including international market opportunities. Thus a founding opportunity can lead to international opportunities. For example, the firm in Case 4
was asked by Vodafone, a domestic partner, to establish a sales support office in New Zealand to become their distributor for that market. This is one of the approaches by which born-global firms emerge. (This process is discussed in the next section.) International opportunities expose additional types of risks and uncertainties, depending on the knowledge and experience of those involved and the networks they have access to. While exploiting opportunities in the domestic market, some firms increased their knowledge of the nature of demand and supply, and they accumulated resources which enabled the exploitation of further opportunities, including those in international markets (i.e., Cases 3 and 8). For example, while exploiting domestic opportunities for over ten years, the firm in Case 3 accidentally discovered an opportunity for international sales with a customer (a weak link) in Singapore. Some international opportunities can take the form of following customers overseas. For example, the firm in Case 8 followed a major Australian construction company to the Middle East to setup their project management system and train their staff in the software.

The evaluation of international opportunities leading to global opportunities is the most common pattern observed. At subsequent stages, when network links, resources and commitment, knowledge and risk-taking have accumulated and a reference point has been formed, the evaluation can lead to greater commitment of resources in international markets as an internationalization strategy (applicable to all firms). For example, the respondent in Case 1 commented, ‘If the product meets the need, then we will pursue that opportunity. If we find a market with a need, we may create a new product for it and build completely new things’. The General Manager in Case 3 explained that scanning opportunities changed their vision from the domestic to the global market, resulting in their global opportunities exceeding their domestic market through extensive business development overseas.

I would say 60% of our opportunities are global now. Our founder John and sales manager Ross travel extensively. Our research and development engineers who are good pre-sales people travel supporting our sales team.

**Strategic Opportunity-Seeking and Exploitation**

As indicated in Table 4.3, the cross-case findings show that opportunities in many markets and regions require formal planning, evaluation and exploitation of opportunities, which can involve simultaneous opportunity-seeking through internal and external networks to exploit the innovations. Global opportunities have also driven firms to sustain their product leadership in the market by integrating competitive strategies into their entrepreneurial strategy.
For example, the firm in Case 1 setup a subsidiary in the US so it could sell to large US government and corporate customers, which mainly buy only from US firms. After establishing customers in the US, the firm used that reputation to market in Japan and Europe. This competitive strategy paid off as the firm is now setting global standards for its product specifications through several industry networks such as the Zigbee alliance for wireless management systems. The founder in Case 1 explained the firm’s pursuit of strategic opportunities:

We are competing very aggressively and pursuing business opportunities wherever we can seek them. Although we do tend to focus on our major markets, we will be proactive in markets that we view as being the leading markets for our products and services.

The firm in Case 4 conducted transport industry analysis of future rail projects in Asia and discovered that Malaysia, Singapore and India were spending a lot of money on rail infrastructure. The firm then took the proactive approach of supplying its technology for those countries’ rail projects. The firm now installs monitors and trains the project staff in the technology and supports the maintenance of an efficient system. By providing the technology and support at the project development stage, the firm was practically guaranteed a sale from their strategic entrepreneurial approach to customer requirements. The founder in Case 4 explained:

We tend to start at infrastructure analysis so wherever there is a lot of money being spent in infrastructure our company always follows infrastructure. So at the moment there is a lot in rail transport for example so which countries are spending lots of money in rail. Countries like Malaysia, Singapore and India are spending a lot of money on infrastructure, we can pick out key opportunities.

Firms such as that in Case 8 are systematically evaluating global opportunities and are seeking advantages from their target markets by establishing overseas offices with sales and support staff. They provide free training to their customers and believe that they gain more customers than their competitors because of this process. The respondent in Case 8 commented:

In general for most markets, if it fits our strategy and if it is in one of our existing regions we will exploit the gap. We will put in one or two salespeople and we will develop business. Following sales we will provide trainers to implement and support that business. Basically our office would grow organically on quite a small base so there is now a manageable risk.

In terms of IE research, the literature review showed that there is a lack of entrepreneurship as the primary theme. Chandra, Styles and Wilkinson (2009) focused on the discovery of
international opportunities and Evangelista (2005) studied international new venture creation. The findings of this study complement previous research about international entrepreneurial opportunity recognition and exploitation in international new ventures beyond the first opportunity. The patterns of opportunity recognition and exploitation discovered in this research present new insights into the role of opportunity-seeking and advantage-seeking behavior. This emerging behavior is discussed in section 5.1.

Based on the interview data presented in Table 4.3, it is evident that creating an international new venture involves a wide range of skills. Either one person has the needed skills (as in Case 4) or the founding team is made up of members with different skills or backgrounds. The ability to actively seek opportunities with other members of the team and having a strong entrepreneurial intention are other factors that contribute to the formation of a new venture. The international experience of the founders, as well as their contacts overseas, is instrumental in identifying opportunities and in having the confidence to start an international new venture. The founders of knowledge firms such as ICT SMEs use their previous experience to discover and exploit their first products in niche markets (Evangelista 2005; Chandra 2009). The lack of planning by firms provides evidence that new ventures do not always adopt a structured approach to early internationalization as suggested by Bell et al. (2003).

In contrast to theories that SMEs are limited in resources, they do in fact utilize any possible means to exploit their product. Without any systematic planning or opportunity evaluation processes, they discover, evaluate and exploit their initial product. The evidence indicates that in order to discover or create opportunities, specific knowledge matters when it comes to identifying gaps in markets such as ICT. The theory of entrepreneurial alertness (Kirzner 1979) assumes that discovery is just dumb luck as the opportunity finds the entrepreneur (Demsetz 1983). However, through an entrepreneurial viewpoint, entrepreneurial awareness consists of specific knowledge and the ability of the individual to evaluate the chosen opportunity to start a new venture and it is created neither instantly nor by accident (Aviram 2010). The entrepreneurial process of recognition and exploitation suggests that international new venture creation is an intentional act that involves repeated attempts to control the process in order to achieve entrepreneurial outcomes.

International entrepreneurship theories have mainly been concerned with the start-up phase of internationalization and how firms use exporting as a foreign market entry mode. The findings reveal that, through an entrepreneurial framework, entrepreneurial founders identify gaps in
the markets due to their technical and industry experience and are focused on getting their first product to market. Exploiting their product rapidly is dependent on their international networks, and foreign market entry is dependent on the level of international strategy required to exploit the product.

In contrast to IE theory, entrepreneurship research has focused on the Schumpeterian view of entrepreneurship and innovation exploitation (Gagli o & Winter 2009). Kirzner’s (1979) theory of ‘alertness’, referred to as ‘dumb luck’ (Demsetz 1983) in opportunity discovery, is aligned with this study’s finding of the entrepreneurially reactive low-risk-takers. However, the entrepreneurially active high-risk-takers are more aligned to entrepreneurial awareness, where founders of INVs have the ability to evaluate opportunities. SME internationalization theories support the driving factors of internationalization as previous experience and international networks. The evidence indicates that all respondents were unaware of the difference between internationalization and globalization. Therefore, they were assessing opportunities as an extension to the domestic market and evaluating markets through an entrepreneurial theoretical framework. Internationalization is opportunity driven, contrary to international business theories.

In this section the evidence provided illustrates that the contributing factors for opportunity recognition are entrepreneurial awareness, entrepreneurial intention, technical/international experience and risk-taking propensity. Founder’s with entrepreneurial awareness (Aviram 2010) have accumulated intellectual capital that provides them with the ability to recognize and evaluate high-technology opportunities either within hardware or software based industries. Founders who actively seek opportunities possess the intention to start a new venture (Shook, Priem & McGee 2003; Gaglio & Winter 2009). The initial opportunity may be exploited by starting a new venture, developing a new product or process. They have developed specialized knowledge from within their industry in order to create products, services or processes gained from their technical knowledge and international experience to exploit their first product (Shane 2000; Evangelista 2005; Chandra, Styles & Wilkinson 2009). Entrepreneurial founders take calculated risks in exploiting opportunities with the expectation of achieving rewards and business success (Brockhaus 1980; Drucker 1985). Relationships gained from industry and international experience enable exploitation of opportunities in domestic niche markets and across international networks (Gartner 1985; Evangelista 2005; Oviatt & McDougall 2005).
The entrepreneurial internationalization process is driven by the founder’s ability to recognize and evaluate opportunities due to their superior technical knowledge which enables them to see technology trends and predict the need for future products, services, or business processes. Analyzing risks with technical and industry knowledge, and international experience allows the entrepreneur to manage down risk in exploiting the opportunity and introducing new products, services or processes by starting a new business in the domestic market (Schumpeter 1934; Shane & Venkataraman 2000; Gaglio & Winter 2009). Entrepreneurial actors that succeed are quick to scan and exploit trends of change. They have worked out how to innovate rapidly and simultaneously, and collaborate with multiple partnerships for knowledge creation and risk sharing. In order to seek opportunities, firms must analyze the trends in their industry and scan for indicators of change from the external environment, interpret them, and quickly evaluate to exploit innovations whether they are products, services or processes. They need to simultaneously share information to create knowledge internally and externally with strategic partners.

In this digital age, when complex, varying indicators may be available simultaneously to all competitors, entrepreneurial firms should similarly exploit analytical tools for their websites to ensure that they acquire the right information from their customers and partners. Analytics from their websites would provide patterns of data for trend analysis. For example, Google Analytics is a free service for websites that gives rich insights in website traffic and marketing effectiveness (Google 2011). The service allows you to analyze traffic data to improve better-targeted advertising to create higher converting websites.

Another channel for seeking opportunities is through innovation intermediaries, such as Innocentive, NineSigma, or yet2.com (Lakhani 2008; Piller 2009). For example, InnoCentive is the global innovation marketplace that pays up to US$1 million to solve problems paid by large firms who post the problems on the site (Innocentive 2011). Open innovation sites have created another form of exploiting innovations without the need to discover problems and exploit them internally. Customers are defining the problem and asking problem solvers to come up with ideas to solve them. This allows entrepreneurial ICT firms to focus on their area of expertise without having to develop extra capabilities and thus lose opportunities due to a lack of resources to research and develop incremental or radical innovations. The influence of international opportunities on internationalization are analyzed and discussed next.
RQ 2: How do international opportunities influence Australian ICT SMEs internationalization?

The cross-case analysis of the cases reveals that firms have two different approaches. As indicated in Table 4.4, the SME internationalization approaches used by firms – stages and born global – are static and sequential, as explained by De Burca, Fletcher and Brown (2004). The findings revealed in Table 4.4 illustrate that, through an entrepreneurial perspective, internationalization approaches made by both new ventures and established firms are opportunity driven and leapfrog international strategies based on the opportunity at hand.

SME Internationalization Approaches

The stages approach was used by the firm in Case 3 that gradually internationalized ten years after start-up. Firms that internationalize may gradually commit to exporting (Johanson & Wiedersheim-Paul 1975). The firm in Case 3 first internationalized after casual overseas orders were received and then gradually committed to internationalization for survival and growth. The General Manager in Case 3 explained why they internationalized:

> We sold the odd one to Singapore and one to New Zealand. Then we had distributed in the US who bought 25 of them in one lot, not by consignment, by paying for them. So, long term distributors were the way we wanted to proceed, where we train them up to the point that they can support the product.

The firms in all the cases except Case 3 internationalized rapidly within two years of inception (Evangelista 2005). The factors that enabled the born-global firms to internationalize rapidly were: international experience (Cases 1, 2 and 4), international sales enquiries via a partner website (Case 5), selling products to the global aviation industry (Case 6), Australian market too small for survival and growth (Case 7) and following a customer (Case 8) (Table 4.4). The respondents in Cases 1 and 4 explained why their firms were born global:

> As the founder of the company we set it up to be international based on international experience. We have not been through a transition; it is just the way we have always been. So, if it was not for our international experience, the company would have gone through the typical domestic market first. (Case 1)

> It was the international experience that allowed us to internationalize early. We sort of looked at the market on an international scale rather than domestic. (Case 4)

Exploiting their first product in their niche market was the priority of born-global firms. Seizing the opportunity to become the first mover was a competitive advantage recognized by
Table 4.4: SME internationalization approaches taken by case firms

<table>
<thead>
<tr>
<th>SME Internationalization Approaches</th>
<th>Case 1</th>
<th>Case 2</th>
<th>Case 3</th>
<th>Case 4</th>
<th>Case 5</th>
<th>Case 6</th>
<th>Case 7</th>
<th>Case 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exploitation of niche market in wireless network management.</td>
<td>International experience assisted in identifying international opportunity.</td>
<td>Received casual overseas orders.</td>
<td>International experience assisted in identifying international opportunity.</td>
<td>International sales enquiries received via partner website.</td>
<td>Selling products to global aviation industry.</td>
<td>Australia represents only 1% of global markets</td>
<td>Followed domestic construction customer overseas.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>International Strategy Used</th>
<th>Internet</th>
<th>Distributor/Agent</th>
<th>Direct Sales</th>
<th>Licensing</th>
<th>International Strategic Alliances</th>
<th>Foreign Direct Investment</th>
<th>Wholly Owned Subsidiary</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Used for advertising products and services. Providing information for educational purposes.</td>
<td>Selling via distributor</td>
<td>N/A</td>
<td>N/A</td>
<td>Joined industry alliance for standardization of technologies</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Used for advertising products and services.</td>
<td>Selling via distributor</td>
<td>Selling direct to customers</td>
<td>N/A</td>
<td>Joined industry alliance for standardization of technologies</td>
<td>Invested in Korean production facilities to manufacture hardware</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Used for advertising products and services.</td>
<td>Selling via distributor</td>
<td>N/A</td>
<td>N/A</td>
<td>Partnered with MNE for strategic opportunities</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Used for advertising products and services. Website used as an online service desk.</td>
<td>N/A</td>
<td>Selling direct to customers</td>
<td>N/A</td>
<td>Partnered with MNE to develop add-in software</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Used for advertising products and services.</td>
<td>N/A</td>
<td>Selling direct to customers</td>
<td>N/A</td>
<td>Partnered with aviation manufacturers</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Used for advertising products and services. Website used for promoting products and services.</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Selling via distributor</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

163
all firms. In regard to internationalization processes, after ten years of establishment the gradual exporter (Case 3) entered foreign markets through casual orders and was reactive towards exporting. However, when domestic market saturation was reached with its first product, the gradual exporter started committing more resources to internationalization for survival and growth. Cateora et al. (2009) support this finding as exporting is seen as the lowest risk entry strategy for SMEs. As a result, the firm in Case 3 changed its short-term export view to a long-term global market view.

Seven out of the eight firms internationalized within two years of firm creation and had international revenues of over 5%. The born-global firms internationalized within two years to exploit their first products in their niche markets. Rapid internationalization was due mainly to their previous experience in international markets, which also assisted in identifying opportunities. Hence, born-global firms started with a short-term export view. This finding is supported by Evangelista (2005), who states that born-global firms internationalize early by utilizing international networks to get their first product into their niche market. As export intensity increases for gradual and born-global firms, they start committing financial and human resources to international strategies for growth.

**International Strategies**

Firms mainly begin with low-risk export involvement and as sales revenues increase firms commit more resources through a series of steps (Guillén 2003). As presented in Table 4.4, the analysis reveals low-risk and high-risk patterns of international strategic involvement. Among low-risk export involvement, the internet was used by all firms as the cheapest strategy to enter international markets. The internet allowed firms to publicize products and services via their website, hence reducing resource requirements in accessing multiple international markets. In conjunction with the internet as an entry strategy, most of the firms also entered foreign markets via distributors or agents. As a consequence of entering international markets via the internet, the respondent in Case 1 commented:

> We use the internet pretty extensively; we rely very heavily on our web presence. For example, we put a lot of information on our website and make it available to respective customers that are educational in nature. We distribute electronically product samples or evaluation versions of our software allowing us to track who accesses the samples. We have processes that involve follow-up work with whoever does evaluate our software. So we have got a very well owned web-based system for both expanding and allowing us to focus on perspective customers.
The software production firms utilized the full benefits of the internet as a low-cost entry strategy in expanding into international markets. For example, the firm in Case 4 integrated tracking service calls into their website, allowing them to respond quickly to problems logged by their customers and to rectify any problems with their customers’ communication networks remotely via the internet. Another example is Case 8, where the firm used the internet to test the feasibility of entering the Indian market by creating a presence via email to promote their product advertising to potential clients. As sales enquiries increased, they setup an office with three sales people and replicated the model across five cities. The internet provides cost-effective marketing capabilities for expanding into international markets.

Hardware production firms require a physical presence in their overseas markets to be able to service their products. The respondent in Case 4 commented:

Nokia was going through a process by outsourcing their sales function; they decided the model would work pretty well to extend into New Zealand. So, we were sort of pushed by one of the vendors and it made sense at the time to setup an office over there and we took on the Nokia distribution, they were basically expanding a Commtel capability to New Zealand as well. The model throughout Asia is a little bit different as well. At the moment we have partners that are already on the ground in some countries and we work quite closely with them.

The importance of strategic alliances and being involved in setting global technology standards is illustrated in Case 1:

Probably our most important networking would be industry associations or professional associations. It would be more industry associations so industry alliances working for the standardization for a particular technology has been very critical and then one category not listed would be suppliers in the industry partners.

Strategic alliances allow firms to share the risks and the resources required to enter international markets (Das & Teng 2000). SMEs face financial constraints which limit internationalization activities (Knight & Cavusgil 2004). Evidence shows that the firms in the case studies are high-risk-takers by entering foreign markets via strategic alliances, foreign direct investment (FDI), and wholly owned subsidiaries (WOS). However, these firms entered high-risk strategic alliances for risk minimisation through adaptation. Utilization of multiple strategies (internet, agents, strategic alliances, FDI, WOS) in the early stages of their growth enabled the firms to maintain an international presence and to grow, despite considerable risks such as nonpayment, cancellation, switching and economic downturn.
The global ICT industry is becoming highly competitive. Competing in the international market was a significant step for the firm in Case 2, as it invested overseas in a production manufacturing facility in Korea. The founder in Case 2 explained:

Production facilities in Korea have been extraordinarily useful in outsourcing our manufacturing to lower our costs.

FDI is seen to provide economies of scale to larger firms with relatively lower unit costs of production and to spread fixed costs more effectively. The firms in the case studies which were involved in hardware production outsourced activities, enabling them to achieve economies of scale and also to provide international customers with large volume orders on a consistent basis. One firm invested in a production plant in Korea as labor costs in Australia could not achieve the required profitability and it centralized its global distribution channel. High-risk international strategies created more value for the firms in the case studies by increasing export intensity over low-risk exporting. This is consistent with the findings of Lu and Beamish (2001), whose study of Japanese SME found that exporting had a negative effect, and strategic alliances and foreign direct investment had a positive effect on export intensity.

In summary, all the firms in the case studies used a myriad of foreign market entry strategies to enter their international markets – from low-risk exporting to high-risk international strategies such as strategic alliances, foreign direct investment, and establishing subsidiaries. All the firms began entering foreign markets with low-risk export involvement and then expanded to increase export intensity. The firms continued to commit to more human and financial resources to increase their export intensity to achieve their international strategy objectives. Guillen (2003) supports this finding, arguing that firms commit to greater risk through resources to gain greater control of their internationalization operations. Cateora et al. (2009) extend this argument to state that management committed to internationalization implements the strategies and decisions of the firm to achieve international success.

The cross-case findings reveal that initially the firms in the case studies entered foreign markets through low-risk exporting strategies such as using the internet, agents and direct sales resulting from orders or other reactive opportunities. As international sales increased, the born-global firms entered multiple foreign markets using multiple high-risk entry strategies. Table 4.5 compares the internationalization behavior of the firms using stages and the born-global firms. Australian ICT SME founders and managers of gradual or born-global
firms realized that Australia is a small ICT market that has unsustainable domestic ICT opportunities.

Both the stages theory and the born-global theory assume that firms follow a static process of internationalization, with born-global firms entering foreign markets at a faster pace. This study adds to the born-global theory in finding that during their inception born-global firms enter multiple foreign markets using multiple international strategies such as the internet, distributors or agents, direct sales, strategic alliances, foreign direct investment, and wholly owned subsidiary.

**Entrepreneurial Internationalization Approaches**

As indicated in Table 4.5, number 1 represents the first international strategy used, 2 the second and 3 the third. The cross-case findings reveal that both INVs and established firm are leapfrogging stages of internationalization. Based on the entrepreneurial life-cycle, seven firms were international new ventures which internationalized within two years and the other Case 3 was an established firm which internationalized when they were ten years of age.

**Table 4.5: Entrepreneurial internationalization approaches**

<table>
<thead>
<tr>
<th>Venture Type</th>
<th>Case 1</th>
<th>Case 2</th>
<th>Case 3</th>
<th>Case 4</th>
<th>Case 5</th>
<th>Case 6</th>
<th>Case 7</th>
<th>Case 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distributor/Agent</td>
<td>INV</td>
<td>INV</td>
<td>Established</td>
<td>INV</td>
<td>INV</td>
<td>INV</td>
<td>INV</td>
<td>INV</td>
</tr>
<tr>
<td>Direct Sales</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Licensing</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>International Strategic Alliances</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Foreign Direct Investment</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wholly Owned Subsidiary</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**International New Ventures**

For wholly owned subsidiaries, the firm in Case 1 setup a subsidiary in the US and joined the Zigbee international alliance for developing global standards for wireless management systems. In terms of Case 7, the firm setup a subsidiary in the U.S.A. to create a presence
which is critical in competing for large institutions such as universities and public organizations and followed on to join Microsoft develop program. The firm in Case 8 setup a subsidiary in Dubai by following a domestic construction customer to support its operations in the Middle East and then established alliances with software vendors to extend capabilities for their online collaboration software. In terms of FDI, Case 2 set up production facilities in Korea to increase volume manufacturing and joined the VDSL alliance to develop leadership in digital design. In most of the cases (Cases 3, 5, 6, and 7), the firms first entered foreign markets via international strategic alliances before moving onto selling direct to customers and through distributors and agents.

**Established Firm**

It seems that the established firms’ pattern of internationalization is similar to some INVs’ patterns such as Case 5 & 6. Case 3 entered the international traffic management association which enabled the firm to become a global leader in the area of traffic management systems and increase the number markets entered. Case 3 secondly started selling direct to international customers and was setting up a distribution channel to support its agents overseas.

Evidence shows that firms choose to enter foreign markets based on opportunity rather than internationalization strategy. All the international new ventures followed the same pattern of internationalization by committing resources (the highest resource commitment being through FDI) and joining international strategic alliances. Most of the established firms internationalized via international strategic alliances and then sold directly to customers. It seems that after entering international markets via foreign direct investment and joining international strategic alliances, most firms started selling through distributors or agents to enter chosen markets.

In contrast to theories such as that of internationalization strategies, this study shows that firms are leapfrogging stages of foreign entry strategies and are depending on opportunity and the expectation of rewards and business success. Therefore, it is suggested that international entrepreneurial opportunities drive dynamic international strategies. This process is explained as follows.

A firm’s selected strategy for entering international markets is affected by a number of factors. Initially, market entry will often be achieved through exporting, which requires no foreign manufacturing expertise and requires investment only in distribution. Direct sales can
facilitate the product improvements necessary to enter foreign markets. Strategic alliances are popular as they allow a firm to connect with an partner which is already experienced in the targeted market. International strategic alliances also reduce risk through the sharing of knowledge and costs. Therefore, the entry modes of distributor/agent, direct sales and international strategic alliances are effective tactics for early market development. Other advantages of international strategic alliances are often global technology standardization and complementary products through vendors. However, if intellectual property rights in developing or emerging economies are not well protected, the number of firms in the industry is growing fast and the need for global integration is high, the foreign direct investment entry mode is preferred. To secure a stronger presence in international markets, setting up a new subsidiary may be required.

In order to enter a global market, a firm selects the international strategy that is best suited to the opportunity at hand. In some instances, various strategies will be followed in stages, starting with exporting and ending with a wholly owned subsidiary. In other cases a firm may use multiple different entry strategies, each in different markets. The decision about which international strategy to use is influenced by the relevant industry’s competitive conditions, the particular country’s situation and government policies, and the firm’s set of resources, capabilities and core competencies.

This study highlights that SME internationalization theories have focused on exporting as a low-risk foreign market entry strategy. Australian ICT SMEs have found alternative ways of entering global markets that overcome resource poverty and increase export intensity (Welch & White 1980; Boer 1992; Haines 1994; Lu & Beamish 2001; Dhanaraj & Beamish 2003). This study has addressed this research gap by investigating the internationalization approaches of Australian ICT SMEs. Emergent insights into dynamic international strategies offer suggestions in section 6.1, Emergent Findings. The impact of firm characteristics and their influence on internationalization is discussed next.
RQ 2.1: How do firm characteristics influence internationalization?

This section examines the role of firm characteristics and their influence on internationalization. As indicated in Table 4.6, the cross-case analysis reveals that firm age is related to early internationalization and that export intensity and country scope are indicators of born-global firms. However, the findings also show that, through an entrepreneurial framework, opportunity-seeking behavior drives wealth creation and the achievement of financial business goals, which is contrary to the findings of previous studies in international entrepreneurship. The characteristics of the firms in the case studies are discussed next.

### Table 4.6: Characteristics of case firms

<table>
<thead>
<tr>
<th>Case</th>
<th>Position in Firm</th>
<th>ICT Sector</th>
<th>Year Established</th>
<th>Year started Exporting</th>
<th>Number of employees</th>
<th>Total Firm Sales (A$ million)</th>
<th>Export Intensity</th>
<th>Country Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CEO</td>
<td>Network Analysis Software</td>
<td>2003</td>
<td>2004</td>
<td>15</td>
<td>1-5</td>
<td>100%</td>
<td>25</td>
</tr>
<tr>
<td>2</td>
<td>CEO</td>
<td>ICT Hardware, Software</td>
<td>2000</td>
<td>2000</td>
<td>15</td>
<td>10-19</td>
<td>50%</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>General Manager</td>
<td>Traffic Management Hardware, Software</td>
<td>1994</td>
<td>2004</td>
<td>13</td>
<td>1-5</td>
<td>25%</td>
<td>10</td>
</tr>
<tr>
<td>4</td>
<td>CEO</td>
<td>Telecommunications Hardware, Software</td>
<td>1998</td>
<td>1998</td>
<td>35</td>
<td>20-49</td>
<td>15%</td>
<td>11</td>
</tr>
<tr>
<td>5</td>
<td>CEO</td>
<td>Computer Aided Design Software</td>
<td>1997</td>
<td>1997</td>
<td>2</td>
<td>&lt;1</td>
<td>80%</td>
<td>10</td>
</tr>
<tr>
<td>6</td>
<td>Managing Director</td>
<td>Aviation Hardware Software</td>
<td>1989</td>
<td>1989</td>
<td>10</td>
<td>&lt;1</td>
<td>50%</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>CTO</td>
<td>Qualitative Analysis Software</td>
<td>1995</td>
<td>1995</td>
<td>50</td>
<td>6-9</td>
<td>85%</td>
<td>100</td>
</tr>
<tr>
<td>8</td>
<td>General Manager Marketing</td>
<td>Content Management Software</td>
<td>2000</td>
<td>2002</td>
<td>125</td>
<td>50-99</td>
<td>60%</td>
<td>45</td>
</tr>
</tbody>
</table>

**Founder/Manager**

The importance of the founder, manager or entrepreneurial team in creating a new venture is widely acknowledged (Shook, Priem & McGee 2003). At the time of the interviews, the founders of five out of the eight firms (Cases 1, 2, 4, 5, and 6) were still managing their ventures. The rest of the firms (Cases 3, 7 and 8) had employed senior managers to implement
international strategies to achieve firm growth. In these cases the growth plans were more ambitious than those of the firms still managed by founders. Recruiting the skills and experience to achieve international success was a key factor. This finding is supported by the growing recognition that top management is critical in starting new ventures (McDougall, Oviatt & Shrader 2003; Evangelista 2005).

**Firm Age**

Studies in international entrepreneurship have used firm age as the main dimension for measuring the early internationalization of international new ventures (McDougall & Oviatt 2005). At the time of the interviews, the youngest firm (Case 1) was five years old and the oldest firm (Case 6) was 19 years old. The average age of the eight firms was 11 years. Based on the entrepreneurial life-cycle, the firms in Cases 1, 2 and 8 were international new ventures with the rest being established firms. These findings support the view that firm age is a dimension of international new ventures (Evangelista 2005).

**ICT Sector**

ICT is mainly divided into firms that produce tangible products called hardware and those that produce intangible products called software. The firms in Cases 2, 3, 4 and 6 classified themselves as hardware producers of DSL technology, traffic management systems, and infrastructure and aviation systems, respectively. The firms in Cases 1, 5, 7 and 8 classified themselves as software producers of network analysis tools, computer aided design, qualitative analysis and online project management systems, respectively. All the firms operated in different sub-sectors of the ICT industry and were not competing against each other. The analysis shows that the software firms have higher export intensity than the hardware firms (Cases 3 and 4). Case 2 has the highest export intensity of the hardware firms. This finding is discussed further in RQ 2.2, Dynamic Capabilities.

The dimensions of a firm such as age, size and industry type do not alone explain the export intensity levels of firms. Sousa (2004) supports this finding that there is no clear construct for measuring export performance.

**Firm Size**

The most common measure of size in the research on entrepreneurship, innovation and exporting is the number of a firm’s employees (Balabanis & Katsikea 2003). The cases in this study are measured by their number of full-time employees (ABS 2000). The cases in the
small firm category with fewer than 19 employees are Cases 1, 2, 3, 5 and 6. Cases in the medium-sized category of 20 to 199 employees are 4, 7 and 8.

As international opportunities increased export intensity, all the firms in the case study took advantage of their small size and responded to their customers, suppliers and market demands by developing products and services via feedback to create value. For example, the General Manager in Case 3 described the firm size as ‘having the ability to see opportunities and move ahead of the competition as one of their strengths’. The General Manager who had worked for Fujitsu commented that by the time big companies gear up and mobilise, ‘the opportunities are gone’.

This study shows that entrepreneurial management teams enable internationalization and that firm age is a dimension used to measure early internationalization, ignoring performance. However, entry into foreign markets through international strategic alliances and foreign direct investment has a high impact on firm size, firm sales, export intensity and country scope, resulting in a higher company profile than the Australian exporter’s profile (Pink & Jamieson 2000). These findings are consistent with those of Lu and Beamish (2001), who found that exporting creates little value in firms and that strategic alliances and foreign direct investment have a greater effect on internationalization. Dhanaraj and Beamish (2003) add that internationalization increases with firm size and firm sales. The present study shows that software firms can deliver digital products and services via the internet, enter multiple markets simultaneously, and increase firm sales and export intensity.

As indicated in Table 4.7, contrary to the international entrepreneurial models of internationalization, where McDougall and Oviatt (2005) argue that during their inception born-global firms ignore international performance such as firm sales, all the firms studied stated that increasing the value of the business, growing the business, increasing sales and increasing profitability were their main business objectives for international expansion. Entrepreneurial ICT firms are driven by business success, which is measured by firm sales, profitability and export intensity, just as in large firms. This finding contradicts a previous research finding that born-global firm performance is an inappropriate measure (Pla-Barber & Escriba-Esteve 2006).

**Business objectives refer to wealth creation**

International entrepreneurial firms are focused on firm growth like large firms. Hence, they develop strategies to find and exploit innovations in the global market through international
strategic alliances and foreign direct investment. The findings suggest that high-risk strategies are linked with wealth-creating entrepreneurial strategies, which is consistent with the findings of Ireland et al. (2001); Lu and Beamish (2001); Guillen (2003); Ireland, Hitt and Sirmon (2003); and Hanson et al. (2008).

Table 4.7: Business objectives of case firms

<table>
<thead>
<tr>
<th>Case</th>
<th>Business Objectives</th>
<th>Differentiation</th>
</tr>
</thead>
</table>
| 1    | To increase the value of the business  
To grow the business  
To increase sales of the business | Well, I think we are nimble and fast, differentiation resulting from small to medium size and we are forced to focus as well on management size. |
| 2    | To increase profitability  
To increase the value of the business  
To grow the business | We are fast because we are small, nimble. If something is going wrong we can change very quickly. |
| 3    | To grow the business  
To increase the value of the business  
To increase sales of the business | Well, I think the flexibility and responsive to opportunities is the beauty of a small company. |
| 4    | To grow the business  
To increase the value of the business  
To increase profitability | One that we really exploit is that we are quite quick to market and we have an ability to focus a lot of energy on customers. Being an SME we can provide utilities, for example, level of service that they require that the big companies really struggle. |
| 5    | To increase the value of the business  
To increase profitability  
To grow the business | We are identified as a niche area and just exploiting that niche. You can respond, make changes quickly. Probably only advantage of being small is responding to opportunities. Do things big companies do not do. |
| 6    | To increase the value of the business  
To increase profitability  
To grow the business | Our actual products tend to be unique, and we often get complimentary remarks about the level of customer support that we provide, and speed of response. A lot of that comes from being a small company. |
| 7    | To increase profitability  
To increase the value of the business  
To increase sales of the business | Agility, price, competitiveness. |
| 8    | To grow the business  
To increase profitability  
To increase the value of the business | I think we have been quite agile and grown very quickly through exporting. From being a small enterprise growing to a medium enterprise and for now that has allowed us to be more agile and perhaps move out of markets in a couple of cases where they were not going to deliver for us in the way we like and I suppose if we were a bigger company we would be a lot less quicker to react to opportunities. |

As indicated in Table 4.7, all firms expressed a differentiation in being agile, small and flexible in responding to changing customer needs and shifting environmental and market
conditions compared to their large competitors (Byrne 1989). As international opportunities increased performance, firms took advantage of their small sizes and responded to their customers, suppliers and market demands by developing products and services via feedback to create value. This finding is consistent with those of Johnson (2004) and Freeman et al. (2006), who found that born-global firms are small and offer technology, flexibility and adaptability in providing solutions to large partners across global markets.

In this study SMEs are more innovative than large firms because they are agile and have more flexibility, a higher ability to adapt, and foster innovation in accepting and implementing change. Contrary to the practices of large firms, SMEs avoid layers of administrative staff and formal rules of communication to adapt to high-velocity markets. While these firms need more formal systems to co-ordinate their activities as they grow, innovative ideas are encouraged with fewer layers of administration, and entrepreneurial employees are rewarded for their ideas. Global opportunities are screened and group decision-making welcomes the contributions of entrepreneurial employees. Hence, employees are rewarded for the outcomes of their efforts and have more incentives to being entrepreneurial. In summary, agile firms are more likely to provide a dynamic, proactive, responsive and risk-taking environment for their employees than large firms. These findings were utilized to reconceptualized the model presented in section 5.2.

RQ 2.2: How do firm capabilities influence internationalization?

The cross-case analysis reveals firstly that knowledge intensity, unique resources and existing international networks are the driving factors of internationalization. Secondly, firm commitments to international strategies develop dynamic capabilities by reconfiguring resources to meet international market changes. Thirdly, the findings show a transition from intellectual property protection to sharing knowledge within industry alliances for creating global industry standards and sustainable technologies. Table 4.8 summarizes the firm capabilities used in internationalization.

The cross-case analysis reveals that previous experience and resources both play important roles in shaping a firm's intention to develop and exploit international opportunities. The findings of the study suggest that three themes or patterns of capabilities influence a firm's internationalization: (1) knowledge intensity, previous experience and international networks
used in firm creation, (2) dynamic capabilities and (3) advantage-seeking collaboration through forming strategic partnerships and international alliances.

As indicated in Table 4.8, the recognition and exploitation of the first product was influenced by the knowledge intensity of the firm, the resources created from previous experience and international networks.

**Table 4.8: Firm resources**

<table>
<thead>
<tr>
<th>Case</th>
<th>Knowledge Intensity</th>
<th>Unique Resources</th>
<th>International Networks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Knowledge Intensive</td>
<td>Product &amp; market knowledge</td>
<td>Prior networks</td>
</tr>
<tr>
<td></td>
<td>Highly Innovative Products</td>
<td>Product capabilities</td>
<td>tradeshows, seminars,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>conferences</td>
</tr>
<tr>
<td>2</td>
<td>Knowledge Intensive</td>
<td>Product &amp; market knowledge</td>
<td>Prior networks</td>
</tr>
<tr>
<td></td>
<td>Highly Innovative Products</td>
<td>Product capabilities</td>
<td>informal networks</td>
</tr>
<tr>
<td>3</td>
<td>Incremental Knowledge Intensive</td>
<td>Manufacturing processes</td>
<td>Tradeshows</td>
</tr>
<tr>
<td></td>
<td>Highly Innovative Products</td>
<td>Product capabilities</td>
<td>conferences</td>
</tr>
<tr>
<td>4</td>
<td>Knowledge Intensive</td>
<td>Product &amp; market knowledge</td>
<td>Prior networks</td>
</tr>
<tr>
<td></td>
<td>Highly Innovative Products</td>
<td>Product capabilities</td>
<td>tradeshows, conferences,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>seminars</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Austrade</td>
</tr>
<tr>
<td>5</td>
<td>Knowledge Intensive</td>
<td>Product &amp; market knowledge</td>
<td>Prior networks</td>
</tr>
<tr>
<td></td>
<td>Highly Innovative Products</td>
<td>Product capabilities</td>
<td>tradeshows</td>
</tr>
<tr>
<td>6</td>
<td>Knowledge Intensive</td>
<td>Product &amp; market knowledge</td>
<td>Prior networks</td>
</tr>
<tr>
<td></td>
<td>Highly Innovative Products</td>
<td>Product capabilities</td>
<td>tradeshows</td>
</tr>
<tr>
<td>7</td>
<td>Knowledge Intensive</td>
<td>Product &amp; market knowledge</td>
<td>Prior networks</td>
</tr>
<tr>
<td></td>
<td>Highly Innovative Products</td>
<td>Product capabilities</td>
<td>conferences</td>
</tr>
<tr>
<td>8</td>
<td>Knowledge Intensive</td>
<td>Product &amp; market knowledge</td>
<td>Prior networks</td>
</tr>
<tr>
<td></td>
<td>Highly Innovative Products</td>
<td>Product capabilities</td>
<td>tradeshows, conferences,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Austrade</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Chamber of Commerce</td>
</tr>
</tbody>
</table>

**Knowledge Intensity**

Knowledge-intensive firms develop highly innovative high-tech products and services that enable competitive advantage in global markets (Knight & Cavusgil 2004; Evangelista 2005). All the firms studied reported being ICT-knowledge-based, developing highly innovative products in the hardware and software industries. Two types of firms that rely on knowledge and early internationalization were observed: knowledge-intensive firms and incremental-knowledge-intensive firms (Case 3).

The knowledge-intensive firms use complex knowledge to design a new product, an improved production method or more efficient service delivery. These firms internationalize faster because they usually have a competitive advantage that can be exploited in multiple countries. For example, the firm in Case 1 developed a network management system for managing
wireless networks. The technology has now been integrated into the Zigbee alliance that manages and controls lighting systems to minimize energy costs for facilities. The Zigbee alliance is an industry alliance that is developing standards for sustainable energy management systems.

Domestic firms adapting well-understood technology to new foreign markets usually internationalize incrementally. An example is the firm in Case 3, which has a unique traffic management system called TTRL. The firm maintained a competitive advantage in the Australian market, but due to market saturation needed to expand internationally to be able to survive and grow the business. These findings are supported by the findings of Bell et al. (2003).

**Unique Resources**

Firm resources are valuable by enabling the exploitation of opportunities and the neutralization of threats. A sustainable competitive advantage is rare (Porter 1985; Barney 1991; Porter 1996). All the cases studied developed unique products and services that enabled the firms to gain a competitive advantage in their niche markets. Australian ICT SMEs are capable of creating products that are first movers in the global market:

Our products and technology are very innovative, our differentiator is our product and product capabilities, it is kind of what the product does for the customer. That is what generates sales, the fact that we are able to do what we can do and we differentiate ourselves, that way we provide simple leading edge product based solutions. (Case 1)

I think we are innovative in products, processes and technology. I mean the products are highly innovative, I mean this product has been under development for 8 years under concept with significant sales starting about 5 years ago. There has not been a competitive product come on the market yet. (Case 3)

The business was one of the first companies in Australia, UK and the US who knew where these products come from to have developed an online information platform. So that itself was kind of innovative. (Case 8)

All the respondents commented that a driving factor in firm internationalization was their firm’s unique products and services for niche markets. This is consistent with the finding of Knight and Cavusgil (2004).
International Networks

International networks helped to create their international new venture for most of the firms studied. International networks drive the founder or manager to pursue international opportunities (Knight & Cavusgil 2004; Evangelista 2005). All INV global founders gained knowledge in their previous employment that significantly contributed to their new venture. For example, the founder in Case 1 commented:

As the founder of the firm I set up the business to be international based on international experience. We have not been through a transition it is just the way we have always been. If it was not for my international experience, I think I would have started the business in the domestic market.

Respondents identified formal methods of networking such as tradeshows, conferences and seminars to establish and maintain networks. Two firms utilised the services of Austrade to organise overseas introductions with potential clients, but the rest of the firms found Austrade’s services too expensive for a small business.

The Operations Manager in Case 3 explained that: ‘It was the founder’s decision to internationalize, as the firm had reached a market share of 80% and was not providing the profit to sustain the business’. As an expert in the field of traffic management systems, the founder in Case 3 had extensively presented the firm’s technologies at conferences and had built relationships that enabled the firm to penetrate internationally. This finding is supported by Johanson and Mattsson’s (1988) claim that network relationships are built over time.

After getting their first products to international markets, the firms had to reconfigure their capabilities to meet customer needs and expand internationally. This study shows that successful internationalizing firms engage in continuous innovation in international markets. The cross-case findings show that although innovation generally increases a firm's internationalization potential and capabilities, it does not absolutely enhance the tendency to internationalize. However, without an intention to take risks in firm creation there would be no product, firm or internationalization. Overall, this finding supports previous research that links innovation and international success (Knight & Cavusgil 2004) but it adds a Schumpeterian entrepreneurial innovator through an entrepreneurial theoretical viewpoint. This suggests firstly, that psychological theories of entrepreneurship that focus on an individual’s or firm’s attributes are valid during INV creation (Brockhaus 1980; Shane & Venkataraman 2000; Evangelista 2005). Secondly, the founders and managers in the cases studied reported ambiguity in distinguishing between internationalization and globalization.
They focused on the opportunities identified in the internal and external environment, suggesting that the cases in this study fit the Schumpeterian entrepreneurial profile. After an opportunity had been identified, the firms evaluated how they would exploit the opportunity in terms of internationalization strategies. Thirdly, the findings show that opportunities drive international strategies and therefore firms leapfrog the steps in internationalization, based on the firm’s strategies and goals to achieve competitive advantage and wealth creation.

Dynamic Capabilities Influencing Internationalization

Dynamic capabilities are the firm’s processes that use resources, particularly the process to integrate, reconfigure, gain and release resources, in order to match and even create market change. ‘Dynamic capabilities thus are the organizational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve and die’ (Eisenhardt & Martin 2000, p. 1107). Table 4.9 summarizes the dynamic capabilities of the firms studied.

Processes

The cross-case analysis identified two patterns of process changes. First, two firms (Cases 2 and 6) at the early stages of internationalization integrated and reconfigured resources to match international markets. Second, the rest of the firms gained new resources to develop international markets. The similarity between all the firms is that changes to processes were mainly instigated during international expansion beyond low-risk export involvement. The founder in Case 2 emphasized the continuing importance of process reconfiguration in international markets:

Outsourcing our production to a facility in Korea has been extraordinarily useful in the efficiency of product manufacturing and lowering costs.

An extraordinary example of gaining new resources to develop new markets is described by the General Manager of Marketing in Case 8:

One of the things we had to do because we offer software services is that we have maintained production instances in data centers. The initial one was in Melbourne, now we have six around the world. We setup these data centers and production processes to be able to support our customers 24/7 and respond to any issues.

The cases studied amply demonstrate the importance of process changes for adapting to international market changes. Some dynamic capabilities integrate resources. An example is product development routines for managers to combine their varied skills and functional
<table>
<thead>
<tr>
<th>Case</th>
<th>Processes</th>
<th>Network Capabilities</th>
<th>Marketing Capabilities</th>
<th>ICT Capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Identified new opportunities through Zigbee alliance and partners.</td>
<td>Joined Industry Alliance for product standardisation</td>
<td>Web presence for marketing products and communication. Gathered marketing intelligence regarding customers.</td>
<td>Published product details on web. Interacted with customers. Transformed business activities.</td>
</tr>
<tr>
<td>2</td>
<td>Improved manufacturing processes through outsourcing production to a facility in Korea, decreasing costs.</td>
<td>Austrade Invested in overseas subsidiary</td>
<td>Web presence for marketing products and simple communication.</td>
<td>Published product details on web. Interacted with customers.</td>
</tr>
<tr>
<td>3</td>
<td>Used trend analysis to improve opportunity identification.</td>
<td>Government agency Austrade Joined Industry Alliance for product standardisation</td>
<td>Web presence for marketing products and communication. Gathered marketing intelligence regarding customers.</td>
<td>Published product details on web. Interacted with customers.</td>
</tr>
<tr>
<td>4</td>
<td>Implemented centralized sales systems for recording quotes and analyzing opportunity pipeline.</td>
<td>Built networks with partners</td>
<td>Web presence for marketing products and communication. Gathered marketing intelligence regarding customers.</td>
<td>Published product details on web. Interacted with customers.</td>
</tr>
<tr>
<td>5</td>
<td>Improved software development process to rapidly create products with fewer bugs.</td>
<td>Built networks with partners Invested in overseas subsidiary</td>
<td>Web presence for marketing products and communication. Gathering marketing intelligence regarding customers.</td>
<td>Published product details on web. Interacted with customers. Transformed business activities.</td>
</tr>
<tr>
<td>6</td>
<td>Developed integrated solutions for complex aviation products and services.</td>
<td>Built networks with customers and partners</td>
<td>Web presence for marketing products and communication. Gathering marketing intelligence regarding customers.</td>
<td>Published product details on web. Interacted with customers.</td>
</tr>
<tr>
<td>7</td>
<td>Developed patents for qualitative analysis software.</td>
<td>Invested in overseas subsidiary</td>
<td>Web presence for marketing products and communication. Gathering marketing intelligence regarding customers.</td>
<td>Published product details on web. Interacted with customers. Transformed business activities.</td>
</tr>
<tr>
<td>8</td>
<td>Built five data centers around globe to improve speed and quality of application services.</td>
<td>Invested in overseas subsidiary</td>
<td>Web presence for marketing products and communication. Gathering marketing intelligence regarding customers.</td>
<td>Published product details on web. Interacted with customers. Transformed business activities.</td>
</tr>
</tbody>
</table>

backgrounds to create revenue-producing products and services. The firm in Case 8 offers online project management applications that provide collaboration among project teams.
Effective product development processes involve routines that ensure that concrete and joint experiences among team members, such as working together to fix specific problems or participating in brainstorming sessions, occur. Such experiences enhance innovation by breaking down the thought worlds that exist because people with different expertise not only know different things, but also know those things differently. The innovation in Case 8 demonstrates how dynamic capabilities are integrating with foreign direct investment into data centers that not only improve services but also create new markets. Process changes made by firms are related to their ICT capabilities.

**Network Capabilities**

Building and maintaining superior and effective networks are integral to a successful internationalization process (Liesch et al. 2002). Compared to MNEs; exporting firms possess fewer financial and other resources in their internationalization processes. All the firms studied were dependent on international networks and previous experience to launch a single product during internationalization. However, in order to expand into many international markets, the firms looked for different ways to build effective networks. The founder in Case 1 started developing networks through professional associations in wireless internet technology, their niche market. Eventually this firm joined Zigbee, an industry alliance for wireless internet management standards, allowing the firm to diversify into energy management systems that changed the firm’s focus from niche markets to global markets. Knowledge creation from the Zigbee alliance helped to develop new capabilities in the firm, which has also had suppliers’ input into the material used for product development.

Another significant networking capability is an international strategic alliance between an SME and an MNE. The founder in Case 4 stresses the importance of international strategic alliances:

> It is very important to have a bigger partner, because it is very difficult to expand internationally on your own. For example we recently won a project in Germany in direct competition with Cisco and Huwei that was with our partners in Germany. We could not have succeeded on our own.

The findings of the study suggest that the founder/manager configures and reconfigures the resources in the networks to achieve international strategies and increase export intensity. These findings are consistent with those of Mort and Weerawardene (2006), who argue that networking capability in Australian hi-tech sectors is central to the growth of born-global firms.
Overall, the findings of the study contribute to the development of IE research by identifying the impact of networking capabilities on INVs and established firms. Capability-based theory is premised on the view that organizational capabilities are not accrued but are developed systematically by the intentional choices and actions of a firm’s strategic leaders (Mort & Weerawardena 2006). The key factor which differentiates the capability-based model from the resource-based model is management’s ability to develop organizational routines (Grant 1991). The findings of this study support this view, identifying that dynamic networking capabilities are strategically developed by international entrepreneurial founders or managers. The development of dynamic networking capabilities is central to the implementation of their strategic vision for successfully internationalizing and taking their products to global markets.

Network cooperative strategies are particularly effective when a network is formed by geographically clustered firms, as in California’s Silicon Valley and Singapore’s Silicon Island (Copp & Ivy 2001; Ferrary 2003). As indicated in Table 4.10, all the software firms in the study joined dynamic alliance networks primarily to stimulate rapid product innovations and subsequent successful market entry and standardization of products. The global ICT industry is characterized by frequent product innovation and short product life-spans. As a result, the pace of innovation in the ICT industry is too fast for any one company to maintain success over time. Therefore, strategic partnerships have been successful and firms continue to operate in a network of firms and are participating in multiple alliances simultaneously. This view is supported by Hanson et al. (2008).

Globalization and the need to innovate are primary influences on firms’ decisions to innovate by cooperating with other companies as internationalization strategies (Guillen 2003) and cooperative strategies (Hanson et al. 2008). In this study there is evidence that, through an entrepreneurial perspective, advantage-seeking behavior is driving entrepreneurial firms to find collaborative strategies that best suit the opportunity at hand and provide the best outcomes for firms. The skills and knowledge contributed by firms forming a collaborative strategy to innovate tend to be technology-based, suggesting how technologies and their implications continue to influence the choice firms make when competing in the global ICT markets. This view is supported by Rothaermal and Deeds (2004). Firms are becoming increasingly dependent on collaborative strategies to enable successful competition in the global economy. Entrepreneurial ventures and established firms are using cooperative strategies (for example, international strategic alliances and joint ventures) to increase their financial returns and to integrate their knowledge and resources to develop and market new products (Alvarez & Barney 2001; Rothaermal & Deeds 2004).
Marketing Capability

Marketing capability is the result of an integrative process designed to apply the collective knowledge, skills and resources of the firm to the market-related needs of the business (Day 1994). The findings illustrate two patterns of marketing activities. First, firms used the internet for building an international presence to market products and services. This strategy reduces the resources needed to access international markets. The founder in Case 5 commented:

Pretty much we have a web presence with web pages and links to our partner’s site. Internet is mainly used for promotional materials.

The second pattern identified was that the power of using the internet for gathering market and competitor intelligence identifying potential customers was recognized by all the firms. The firm in Case 3, which develops traffic management systems, sees the importance of frequently searching the internet:

We use the internet, which obviously enables us to assess what countries are doing, what sort of companies are operating in our market segment and then we contact them.

The cases studied all demonstrate the impact of marketing capability on integrating the internet for marketing-related activities. The customization of products for international markets to create value for customers via key marketing activities is consistent with the findings of Cavusgil and Zhou (1994).

ICT Capabilities

ICT can be used for applications such as publicizing product details on the web, interacting with customers for feedback and transforming business activities by allowing customers to buy online and specify delivery times (Foley & Ram 2002; Cateora et al. 2009). All the firms studied had strategies to build ICT capabilities with a view to increase global opportunities and competitiveness. Three patterns emerged in ICT capability development: (1) publishing products details on the web, (2) interacting with customers for feedback and (3) transforming business activities by allowing customers to buy online.

The four hardware firms were still at the publishing and interaction level of e-commerce transformation. The firms in Cases 2, 3, 4 and 6 basically put their brochures and other product materials on their web pages. All visitors to the site see the same information and there is no facility for interaction. This stage is primarily to enter international markets to cut costs through digitalizing current marketing. At the interaction level, the information at the
publishing stage is extended with the ability for the user to get responses to requests. This is an interactive web page but limited to ask and respond. This level also has simple e-commerce. For example, the firm in Case 4 uses its website for users to log and track their service calls via the firm’s 24/7 helpdesk. The helpdesk interacts with users based on the service agreement between the two parties.

The four software firms had progressed towards e-commerce transformation by allowing customers to purchase products online. At this level, a dialogue takes place between the user and the website to personalize the interaction, as it is necessary for users to reveal information about themselves. This information is processed and used to provide appropriate responses to valued customers. At this stage, value creation is as important as cost cutting. It seems that software firms are able to adopt e-commerce more easily than hardware firms as all their products and services can be digitized. E-commerce has been a fundamental capability for ‘increasing export intensity and profit margins’, as stated by the CTO in Case 7.

The findings that ICT capabilities used for publicizing products on the web and interfacing with customers for feedback increase international opportunities and competitiveness are consistent with Loane’s (2006) findings. Macgregor and Vrozzaic (2004) support these findings that adopting e-commerce reduces administrative costs, improves internal efficiency, and improves marketing and competitiveness.

The research findings add some new insight to contemporary literature related to the choice of entry mode.

Firstly, internationalization theories and models that have been used to explain the reasons for a firm’s entry strategy have mainly focused on macro-level variables, such as environmental issues, whereas the particular characteristics of a firm’s business have received less attention. Recalling the agility and small size of the firms in this study, the results suggest that the product strategy of a firm is an important determinant of a software firm’s international strategy selection. This gives some support to Pla-Barber and Escriba-Esteve’ (2006) suggestion that a single theory cannot fully explain the internationalization behavior of high-technology SMEs.

Secondly, the intangible nature of software products creates some challenges for internationalization theories and models that have conceptualized digital products as tangible resources. This intangibility enables the delivery of the products in a digital form. In many cases, the product itself can be delivered around the globe via the internet by customers
downloading from the firm’s website, which may allow direct downloading or through subscription to their product. In these cases, the choice of international strategy is not relevant for traditional exporting activities. However, a hardware firm’s selection of an international strategy becomes important when a firm needs a physical presence or a distributor in a country for reasons such as handling after-sales support, implementing the hardware or specifying the product for customers. This might be the main reason why the distribution model of a firm is connected to the selection of international strategy.

In contrast to RBV theories, a substantive body of empirical research has often been neglected within the paradigm of dynamic capabilities. This research on capabilities such as product development and alliance formation sheds light not only on these processes, but also on the generalized nature of dynamic capabilities. When markets are very dynamic or what is termed 'high velocity' (Eisenhardt 1989), change becomes nonlinear and less predictable. High-velocity markets such as ICT are ones in which market boundaries are blurred, successful business models are unclear, and market players are ambiguous and shifting. The overall industry structure is unclear. Uncertainty cannot be predicted or specified for future states. High-velocity markets rely on rapidly creating opportunity-specific new knowledge. Existing knowledge can even be a disadvantage if managers over generalize from past situations (Argote 1999).

In order to rapidly create opportunity-specific new knowledge about a current situation, dynamic capabilities should enable the use of prototypes and early testing to gain new knowledge quickly. For example, the firm in Case 6 created rapid learning through allocating $25,000 for projects to get immediate feedback from customers. Managers then used the new information and took account of changing conditions to develop and implement alternatives based on real-time information, cross-functional relationships and intensive communication among the internal and external stakeholders involved in the process.

The paradigm of dynamic capabilities was introduced in recent strategic management literature as a theoretical answer to a problem of how firms are able to achieve sustained competitiveness in turbulent environments. Dynamic capabilities, consisting of ‘a firm’s ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments’ (Teece, Pisano & Shuen 1997, p. 516), are argued to be the key to the mastery of continuous change required in rapidly and unpredictably transforming competitive environments.
There seems to be a close association between entrepreneurship and resource-based theory, especially dynamic capabilities (Madsen 2010). A firm’s degree of entrepreneurship is as important as new combinations of resources (Brown & Eisenhardt 1998; Eisenhardt & Martin 2000). Therefore, concepts are attached to how the firm deploys and develops resources, as well as to the strategy development and performance of the firm. While entrepreneurial strategy explains how a firm exploits simultaneous innovations at a strategic level, dynamic capabilities include operational activities which are essentially concerned with the development of the organization and its diverse operations such as product development, alliance building and foreign market entry.

The environment seems to be important in connection with entrepreneurship, and dynamic capabilities have essentially been concerned with the firm and its management in reaction to changes in the environment (Teece, Pisano, Shuen 1997; Eisenhardt & Martin 2000). This suggests that the need to develop and change resources must essentially be seen as a function of opportunity recognition and exploitation. A main assumption concerning entrepreneurship is that firm management discovers, enacts, evaluates and exploits opportunities based on the information at hand (Oviatt & McDougall 2005). Based on this, it is suggested that management attempts to be visionary, to take initiatives and to implement measures which ensure business success. In this respect, firms are opportunity seeking and forward looking. This is more than just reacting to changes in the environment, even though the changes may be a reason for the firm modifying its entrepreneurial strategy (Ireland, Hitt & Sirmon 2003; Hanson et al. 2008).

Based on this interpretation, firms develop a rationale concerning why resources ought to be changed and reconfigured. Many researchers maintain that entrepreneurship can be a key factor in improving or increasing a firm’s output or results (Shane & Venkataraman 2000; Ireland, Hitt & Sirmon 2003; Hanson et al. 2008). This suggests that an entrepreneurial strategy can contribute to an increased understanding of the establishment and utilization of the firm’s resources. However, global opportunities have forced founders or managers to analyze the opportunities that are internal and external. Firms have had to improve their strategic planning processes to exploit innovations developed in-house. External opportunities have mainly come from international strategic alliances and firms have had to reconfigure resources to adapt to those opportunities. Thus, it can be argued that there is a positive association between entrepreneurial strategy and dynamic capabilities. Consequently, entrepreneurial strategy supports the development of dynamic capabilities in exploiting multiple opportunities in a turbulent global environment such as ICT.
RQ 2.3: How does the external environment influence or impede internationalization?

The findings of this study reveal that factors facilitating international expansion have a significant influence on internationalization. These factors are identified as government support for medium-sized business, global opportunities, cultural and economic similarity, and internet technology. Table 4.10 summarizes the factors facilitating internationalization, which are discussed in the next section.

Table 4.10: External factors facilitating and impeding internationalization

<table>
<thead>
<tr>
<th>Case</th>
<th>Government Support</th>
<th>Global Opportunities</th>
<th>International Market Knowledge</th>
<th>Technology</th>
<th>Hostile Home Market</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Austrade services too expensive. Time consuming processes.</td>
<td>Expanded into 25 countries</td>
<td>Exported and expanded into mainly similar Western and developed cultures. Satisfied with current market knowledge.</td>
<td>Internet has overcome distance barriers. Difficulties with developing language support.</td>
<td>Australian market too small.</td>
</tr>
<tr>
<td>2</td>
<td>Austrade provided business introductions and opportunities at tradeshows.</td>
<td>Expanded into 3 countries</td>
<td>Exported and expanded into mainly similar Western and developed cultures. Need more knowledge about markets.</td>
<td>Internet has overcome distance barriers.</td>
<td>Australian market too small.</td>
</tr>
<tr>
<td>3</td>
<td>Austrade services too expensive. Time consuming processes.</td>
<td>Expanded into 10 countries</td>
<td>Exported and expanded into mainly similar Western and developed cultures. Need more knowledge about markets.</td>
<td>Internet has overcome distance barriers.</td>
<td>Australian market too small.</td>
</tr>
<tr>
<td>4</td>
<td>Austrade services too expensive. Time consuming processes.</td>
<td>Expanded into 11 countries</td>
<td>Exported and expanded into mainly similar Western and developed cultures. Need more knowledge about Russian markets.</td>
<td>Internet has overcome distance barriers.</td>
<td>Australian market too small.</td>
</tr>
<tr>
<td>5</td>
<td>Austrade services too expensive. Time consuming processes.</td>
<td>Expanded into 10 countries</td>
<td>Exported and expanded into mainly similar Western and developed cultures. Satisfied with current market knowledge.</td>
<td>Internet has overcome distance barriers.</td>
<td>Australian market too small.</td>
</tr>
<tr>
<td>6</td>
<td>Austrade services too expensive. Time consuming processes.</td>
<td>Expanded into 5 countries</td>
<td>Exported and expanded into mainly similar Western and developed cultures. Lack of market knowledge.</td>
<td>Internet has overcome distance barriers.</td>
<td>Australian market too small.</td>
</tr>
<tr>
<td>7</td>
<td>Austrade provided business introductions and opportunities at tradeshows.</td>
<td>Expanded into 100 countries</td>
<td>Exported and expanded into mainly similar Western and developed cultures. Satisfied with current market knowledge.</td>
<td>Internet has overcome distance barriers. Difficulties with developing language support.</td>
<td>Australian market too small.</td>
</tr>
<tr>
<td>8</td>
<td>Austrade provided business introductions and opportunities at tradeshows</td>
<td>Expanded into 45 countries</td>
<td>Exported and expanded into mainly similar Western and developed cultures. Satisfied with current market knowledge.</td>
<td>Internet has overcome distance barriers. Difficulties with developing language support.</td>
<td>Australian market too small.</td>
</tr>
</tbody>
</table>
Economic variables relating to the various markets characteristics, such as population, income, consumption patterns, infrastructure, geography, and attitudes to foreign involvement in the economy, form a starting point for assessment of market potential for the international entrepreneur (Czinkota & Ronkainen 2010). As reported by Zou and Stan (1998), the external, uncontrollable factors have received little attention from researchers.

**External Factors Influencing Internationalization**

**Government Support**

Governments that recognize the importance of assisting SMEs in exporting provide a range of support activities through state-funded export credit and promotion agencies. Austrade is the Australian Federal Government’s export promotion agency (Austrade 2010). In terms of export support, the three medium-sized firms in the study received financial and business support in expanding their markets internationally, through international trade shows and business introductions. Austrade has been a major factor in increasing export intensity for these firms. Supporting the growth and development of SMEs is a primary objective of the Australian Government, which is consistent with Evangelista’s (2005) view.

**Global Opportunities**

Internationalization has provided new growth opportunities in global markets. External environments present more opportunities (Barney 1991, Grant 1991). All the firms in the study cited the importance of global markets opening up new growth opportunities. These findings are supported by Moen (2003), who found that small domestic markets restricted business growth and export markets were more attractive for export intensity. The large global market acts as a pull factor, consistent with the findings of Etemad (2004b) and Evangelista (2005).

The findings of the study reveal that as firms advance to high-risk international strategies such as strategic alliances and foreign direct investment, global opportunities not only increase export intensity but they also increase the business sales and country scope of the firms compared to Australian ICT exporter profiles (ABS 2000).
International Market Knowledge

Cultural Similarity

In export market studies, environmental diversity is normally expressed as three elements: cultural dissimilarity, economic dissimilarity and the physical distance of export markets (Vachani 1991). All the firms in the study preferred to export to developed countries that are culturally similar such as North America, the UK, New Zealand and Western Europe as primary markets. Entering these markets was also easy as they shared the same language, making international business operations and communications easier. Asia was the secondary market as it was closer in distance and presented emerging opportunities for market growth and international sales.

Economic Similarity

Entrepreneurship is an environmentally driven phenomenon (Morris & Lewis 1995). The cross-case analysis revealed a positive link between cultural similarity and economic similarity. All the firms exported to markets that were economically similar. The firms preferred to export to developing markets in developed countries. Asian markets which are economically dissimilar but physically close to Australia presented emerging opportunities that were seized for growth.

In terms of environmental diversity, the findings reveal that Asian markets that are culturally and economically dissimilar are positively related to entrepreneurship, as the market environment of exporting firms tends to be more diverse and more risky than that of firms operating solely in domestic markets (Albaum, Duert & Strandkov 2001; Balabanis & Katsikea 2003). However, this study shows that ICT SMEs prefer culturally and economically similar markets that increase export intensity.

Technology

Trends in ICT have made internationalization easier for SMEs. Widespread diffusion of ICT has made internationalization a viable and cost-effective option (Knight & Cavusgil 2004). All respondents reported that ICT has reduced costs in internationalization. This external factor is significantly linked with the cases of firms shifting towards the e-commerce capabilities that enable firms to publicize, interact and sell products online to customers globally. E-commerce has also increased export intensity and profit margins for firms.
External Factors Impeding Internationalization

Hostile Home Market

‘Hostility’ characterizes environments with ‘precarious industry settings, intense competition, harsh, overwhelming business climates and the relative lack of exploitable opportunities’ (Covin & Slevin 1989, p.75). All the firms stated they had to export as the Australian ICT market was too small to sustain a profitable business. The small domestic market acted as a push factor for firms (Etemad 2004b; Evangelista 2005). Moen (2003) argues that born-global firms perceive the home market as being unattractive due to stagnation and small size and they perceive exporting as necessary to their survival.

Government Support

Government support was found to positively affect medium-sized businesses as a facilitating factor for export intensity. The study also found that the five small firms found Austrade services too expensive and time consuming for their businesses. This raises the question of how relevant government support is for SMEs and whether it supports only businesses that can afford services costing $190 per hour.

International Market Knowledge

International marketing knowledge facilitates knowledge of customers, product development and the adaptation of key marketing tactical elements to target foreign customers with good quality, differentiated goods (Knight & Cavusgil 2004). Two patterns emerged in relation to international market knowledge: (1) lack of market knowledge and (2) satisfaction with market knowledge. Managers of hardware firms stated that they lacked market knowledge and managers of software firms were satisfied with their market knowledge. The significant difference is that software firms entered more markets than the hardware firms that also increased export intensity.

In addition to having market knowledge, firms that have unique resources such as intellectual property have a competitive advantage. Intellectual property is the property of the mind or intellect; in business terms, this also means proprietary knowledge (IP Australia 2011). The respondent in Case 3 stated, ‘I pulled out of the China market because I could not protect my products’. Firms face the problem of having their products copied and offered at lower prices, undercutting the original developer of the software. Unprotected intellectual property tends to
be linked with culturally dissimilar markets, as many emerging countries have inadequate laws for the protection of intellectual property.

**Internet Technology**

As shown in Table 4.10, all firms stated that ICT facilitated export intensity. Table 4.10 shows that three firms found developing language support for dissimilar cultures difficult and expensive. Finding people who had the language and technical skills to support the software products increased the cost of producing and supporting these firms’ products.

The research findings show that the Australian ICT market is small and therefore hostile. The internet has made foreign market entry attractive as the global ICT market offers multiple opportunities and potential for growth. Austrade has limited export support for medium-sized ICT firms and the cost of its services is a barrier to small ICT firms entering foreign markets. This finding is supported by Ibeh (2003), Moen (2003) and Evangelista (2005).

Marketing in dissimilar external environments is a high-risk entrepreneurial act. Australian ICT SMEs initially enter the similar environments of English-speaking countries, which provide economies of scale for software development and technical support. Once they commit to high-risk international strategies, INVs enter dissimilar environments to increase export intensity.

Entrepreneurship cannot avert or alleviate the negative influences of a hostile environment. The spontaneous reaction is for exporters to avoid operating in such environments (Balabanis & Katsikea 2003). The small market of the Australian ICT industry and its distance from other developed countries suggest that a global mind-set should be a primary consideration for ICT SMEs in order to exploit global opportunities.

In Table 4.10, the cross-case findings reveal that Australia's domestic ICT market is only 1% of the global ICT market that is worth US$3.8 trillion (Harrison 2008). Australia is geographically distant from most developed countries that are economically and culturally similar. Thus, Australian ICT SMEs should be seeking opportunities globally and leveraging in the domestic market, as internet technology virtually erodes geographic borders. Through cooperative strategies, Australian ICT SMEs can focus on their areas of specialization and exploit innovations in many markets and regions with minimal firm costs, and can continue to stay agile and create knowledge that meets market demands.
In contrast to accepted theory, small firms play a major role in economic growth by being a major source of employment (Thurik 2007). But only a small percentage survives for more than five years and eventually grows up to be ‘gazelles’ that drive innovation and economic growth. This emphasizes the need for government intervention to create conditions that are conducive to the creation and expansion of small firms to optimize their potential for economic growth. To foster the growth of small businesses, governments need to improve SMEs’ access to financing, information infrastructure and international markets (OECD 2000).

In most countries regulations and institutionalized bureaucracy discourage the establishment of entrepreneurial small firms and impede the growth of those already established. To redress this, what is required of a government is to develop regulatory and financial frameworks that remove existing constraints and facilitate the passage of small entrepreneurial firms along the road to growth and internationalization. Governments should provide the lead to encourage the formation of small firm clusters that pool resources and share costs to overcome some of the constraints they confront due to insufficient access to financial resources. Cluster formation can lead to low-cost training, marketing and research in addition to other spill-over effects such as the availability of information needed to develop the competitive advantage that is necessary to compete in global markets. Silicon Valley in California and Guosjo in Sweden are examples of successful local clusters of high entrepreneurial activity (ABS 2011). As discussed in RQ 2.2, the internet allows entrepreneurial firms to join international strategic alliances to share risk and knowledge creation that paves the way to global growth and competitive advantage, reducing the need for physical clusters.

Governments that recognize the importance of assisting small firms to globalize their operations provide a range of support activities through state-funded export credit and promotion agencies. The support activities include export insurance, bank guarantees and advice, information on foreign markets, export opportunities, participation in foreign exhibitions and trade fairs, and preparation of marketing tools in foreign languages and their circulation in foreign markets (OECD 2005). Supporting the growth and development of SMEs is a primary objective of the Australian and New Zealand governments. Within the Australian economy the role of small firms is well documented. In Australia, national and state governments have developed many small business and export development programs.
4.5 Summary

The overall findings of this study and how they relate to previous research are summarized in Table 4.11. The emerging insights are discussed in section 5.1.
### Table 4.11: Summary of findings and emerging insights

<table>
<thead>
<tr>
<th>RQ</th>
<th>Findings</th>
<th>Previous Research</th>
<th>Emerging Insights</th>
<th>Previous Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Technical/industry experience, international experience, international networks, entrepreneurial intention, risk-taking propensity. Entrepreneurial actors pursue opportunities identified as a result of previous experience and networks in their industries, and exploit products to start a business.</td>
<td><strong>Supported by:</strong> Brockhaus (1980); McDougall &amp; Oviatt (1994); Madsen &amp; Servais (1997); Shane (2000); Shook, Priem &amp; McGee (2003); Evangelista (2005). Shane &amp; Venkataraman (2000); Holcombe (2003); Evangelista (2005); Oviatt &amp; McDougall (2005); Chandra, Styles &amp; Wilkinson (2009); Gaglio &amp; Winter (2009).</td>
<td>Opportunity-seeking aware actors have the ability to scan and exploit trends of change and introduce new products, services or processes by starting a business.</td>
<td>Shane &amp; Venkataraman (2000); Ireland et al. (2001); Oviatt &amp; McDougall (2005); Hanson et al. (2008); Gaglio &amp; Winter (2009); Aviram (2010);</td>
</tr>
<tr>
<td>2</td>
<td>Initially ICT firms enter foreign markets through low-risk exporting methods such as internet and agents as a result of reactive orders or opportunities.</td>
<td><strong>Supported by:</strong> Johanson &amp; Weidersheim-Paul (1975); Johanson &amp; Vahlne (1977); McDougall &amp; Oviatt (1989); Guillen (2003); Bell et al. (2003); Evangelista (2005).</td>
<td>Opportunity seeking drives firms to leapfrog stages of international strategies to suit the opportunity being exploited.</td>
<td>Guillen (2003); Freeman et al. (2006); Karlsen et al. (2003); Hanson et al. (2008); Cateora et al. (2009).</td>
</tr>
<tr>
<td>2.1</td>
<td>Firm age, firm size, firm sales, export intensity, country scope. Entering foreign markets through international strategic alliances and foreign direct investment has a positive impact on firm size, firm sales, export intensity, and country scope.</td>
<td><strong>Supported by:</strong> Oviatt &amp; McDougall (2005); Pla-Barber &amp; Escriba-Esteve (2006). Lu &amp; Beamish (2001), Dhanaraj &amp; Beamish (2003), Oviatt &amp; McDougall (2005).</td>
<td>Agile and flexible firms are responding to changing customer needs and shifting environmental and market conditions faster than their large competitors.</td>
<td>Johnson (2004); Freeman et al. (2006); Daft et al. (2010).</td>
</tr>
<tr>
<td>RQ</td>
<td>Findings</td>
<td>Previous Research</td>
<td>Emerging Insights</td>
<td>Previous Research</td>
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<tr>
<td>2.2</td>
<td><em>Born-global firms exploit their first unique products in their niche markets through low-risk exporting with their existing international networks that allow them to internationalize early.</em></td>
<td>Supported by: Barney (1981); Porter (1985); Porter (1996); Knight &amp; Cavusgil (2004); Evangelista (2005); Oviatt &amp; McDougall (2005).</td>
<td>Advantage-seeking behavior of the firm fosters adapting and collaborating: The agile firm has the ability to innovate rapidly and simultaneously to adapt and integrate product, processes, services, and strategies to match and create global ICT markets. The agile firm has the ability to collaborate and manage partnerships with internal and external stakeholders for knowledge creation and sharing risks.</td>
<td>Supported by: Teece, Pisano &amp; Shuen (1997); Eisenhardt &amp; Martin (2000); Foley &amp; Ram (2002); Knight &amp; Cavusgil (2004); Oviatt &amp; McDougall (2005); Mort &amp; Weerawardena (2006); Hanson et al. (2008).</td>
</tr>
<tr>
<td>2.3</td>
<td><strong>External Influencing Factors</strong>&lt;br&gt;Global opportunities, government support, international market knowledge, technology</td>
<td>Supported by: Barney (1991); Grant (1991); McDougall &amp; Oviatt (1994); Moen (2003); Knight &amp; Cavusgil (2004); Evangelista (2005); Austrade (2010)</td>
<td>The hostile, small Australian ICT market has fostered opportunity-seeking and advantage-seeking behavior for founders and managers. Management teams seek global opportunities that increase firm sales. They seek advantages by collaborating with partners that give them the best advantages for knowledge creation and minimizing risks.</td>
<td>Supported by: Barney (1991); Grant (1991); McDougall &amp; Oviatt (1994); Moen (2003); Knight &amp; Cavusgil (2004); Evangelista (2005); Cateora et al. (2009); Hanson et al. (2009).</td>
</tr>
<tr>
<td></td>
<td><strong>External Impeding Factors</strong>&lt;br&gt;Hostile home market</td>
<td>Moen (2003); Evangelista (2005).</td>
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</table>
In summary, the findings reveal:

1. Opportunity recognition of the first product, service or process is exploited through the start-up of a new business in the domestic market.

2. International opportunity recognition of products, services or processes are exploited through dynamic international strategies.

3. Founders and managers measure business success against wealth creation (i.e., sales, profitability and growth) not against age of internationalization or export intensity.

4. Firms adapt capabilities to the opportunity at hand and collaborate with internal and external stakeholders to create wealth.

Overall, the findings support other research findings that international entrepreneurship is a dynamic and adaptive phenomenon (Evangelista 2005; Coviello, McDougall & Oviatt 2011; Jones, Coviello & Tang 2011). Through the entrepreneurial framework of internationalization, the results reveal that the hostile and small Australian ICT market has fostered opportunity-seeking and advantage-seeking behavior for founders and managers of ICT SMEs. Management teams are seeking global opportunities that increase firm sales and profitability. They are seeking global advantages by collaborating with partners that give them the best advantages for knowledge creation and minimizing risks. Implications for theory are that a holistic view of entrepreneurial internationalization should be dynamic, so that entrepreneurial firms adapt and collaborate with internal and external stakeholders to create wealth.

Chapter 5 discusses the emergent findings and the implications for theory, management practices and policy makers. Finally, the contributions of this study are presented.
Chapter 5: Conclusion

5.1 Introduction

International Business posits that SMEs enter markets in stages via a static process. In contrast, this research has found that ICT SMEs actually internationalize dynamically with an entrepreneurial process of opportunity recognition and exploitation and new venture creation. Gamboa and Brouthers (2008) stated that international entrepreneurship has been explained through an international business theoretical lens. International business theories have viewed entrepreneurship from an MNE perspective and have exploited opportunities by exporting in stages via a static process of internationalization. As illustrated in Figure 5.1 the SME internationalization process (stages theory and learning theory) is incremental, which means that firms repeat the process in all markets rather than applying their experience in one market when entering another which requires a greater commitment of resources (De Burca, Fletcher & Brown 2004).

Figure 5.1: SME internationalization process

| Stage 1: No regular exporting activities | Stage 2: Export via independent agents | Stage 3: Establishment of an overseas subsidiary | Stage 4: Establishment of an overseas manufacturing subsidiary |

Source: Johanson and Weidersheim-Paul (1975)

In contrast, Jones, Coviello and Tang (2011) stated that explanations of entrepreneurial internationalization are lacking from an entrepreneurial theoretical lens where entrepreneurship is the primary theme, including sub-themes of opportunity recognition and exploitation and new venture creation. As illustrated in Figure 5.2 this study provides evidence that entrepreneurial firms follow the entrepreneurial process of opportunity recognition and exploitation of products and services through the start-up of a new business in the domestic market. Then an international opportunity is recognized products and services are dynamically exploited via international strategies such as exporting, contractual agreements, strategic alliances and ownership based on the opportunity at hand. Therefore,
each opportunity in a market is evaluated individually and resources are committed based on expected wealth creation. Similarly, established firms that identify international opportunities could leapfrog the new venture creation stage of the process and exploit the opportunity at hand through dynamic international strategies.

**Figure 5.2: Entrepreneurial internationalization process**

This chapter integrates the overall findings of the investigation with respect to the five research questions presented in Chapter 4. As recorded in Chapter 3, the study adopted a qualitative approach to analyzing the research questions through eight case studies. The findings reported in Chapter 4 are summarized and a revised conceptual model through an entrepreneurial theoretical framework is presented in section 5.1. The implications for theory, management practices and policy are presented in section 5.2. The limitations associated with qualitative research and the implications for future research are discussed in section 5.3. The chapter concludes with a summary of the contributions made by this study to theory, practice and policy development in international entrepreneurship.
5.2 Summary of Key Findings

Overall, the findings support previous research findings that entrepreneurial internationalization is a dynamic and adaptive phenomenon (Evangelista 2005; Coviello, McDougall & Oviatt 2011; Jones, Coviello & Tang 2011). The key findings of this study fill gaps in developing the theory of entrepreneurship as the primary theme in international entrepreneurship.

1. Opportunity recognition of the first product, service or process is exploited through the start-up of a new business in the domestic market.

2. International opportunity recognition of products, services or processes are exploited through dynamic international strategies based on the opportunity at hand.

3. Founders and managers measure business success against wealth creation (i.e., sales, profitability and growth) not against age of internationalization or export intensity.

4. Firms adapt capabilities to the opportunity at hand and collaborate with internal and external stakeholders to create wealth.

5.2.2 Adaptive Entrepreneurial Strategy

Figure 5.3: Adaptive entrepreneurial strategy
Through an entrepreneurial theoretical perspective, ICT entrepreneurs see and understand entrepreneurial internationalization activities in two main stages: (1) domestic opportunity recognition and exploitation and (2) international opportunity recognition and exploitation. The revised model draws together the two main activities integrating the findings and comprises four elements: (1) founder characteristics, (2) firm characteristics, (3) dynamic capabilities and (4) external environment. From the data and analysis a model has been developed depicting the complex phenomenon of entrepreneurial internationalization as illustrated in Figure 5.3.

5.2.2.1 Founder Characteristics

The founder profile is characterized by entrepreneurial awareness, entrepreneurial intentions, technical and industry experience, international experience, propensity for risk-taking, breadth of international networks, and opportunity recognition capabilities. Founder’s with entrepreneurial awareness have the ability to recognize and evaluate opportunities (Aviram 2010) and who actively seek opportunities and have the intention to start a new venture (Shook, Priem & McGee 2003; Gaglio & Winter 2009). They have developed specialized knowledge from within their industry in order to create products, services or processes gained from their technical knowledge and international experience to exploit their first product (Shane 2000; Evangelista 2005; Chandra, Styles & Wilkinson 2009). Entrepreneurial founders take calculated risks in exploiting opportunities with the expectation of achieving rewards and business success (Brockhaus 1980; Drucker 1985). Relationships gained from industry and international experience enable exploitation of opportunities in domestic niche markets and across international networks (Gartner 1985; Evangelista 2005; Oviatt & McDougall 2005).

The entrepreneurial internationalization process begins with a potential entrepreneurial opportunity seen through a clear entrepreneurial lens (Douglas 2009). The founder’s ability to recognize and evaluate opportunities due to their superior technical knowledge enables them to see technology trends and predict the need for future products, services, or business processes. Analyzing risks with technical and industry knowledge, and international experience allows the entrepreneur to manage down risk in exploiting the opportunity and introducing new products, services or processes by starting a new business in the domestic market (Schumpeter 1934; Shane & Venkataraman 2000; Gaglio & Winter 2009). Entrepreneurial actors that succeed are quick to scan and exploit trends of change. They have
worked out how to innovate rapidly and simultaneously, and collaborate with multiple partnerships for knowledge creation and risk sharing.

In order to seek opportunities, firms must analyze the trends in their industry and scan for indicators of change from the external environment, interpret them, and quickly evaluate to exploit innovations whether they are products, services or processes. They need to simultaneously share information to create knowledge internally and externally with strategic partners.

In this digital age, when complex, varying indicators may be available simultaneously to all competitors, entrepreneurial firms should similarly exploit analytical tools for their websites to ensure that they acquire the right information from their customers and partners. Analytics from their websites would provide patterns of data for trend analysis. For example, Google Analytics is a free service for websites that gives rich insights in website traffic and marketing effectiveness (Google 2011). The service allows you to analyze traffic data to improve better-targeted advertising to create higher converting websites.

Another channel for seeking opportunities is through innovation intermediaries, such as Innocentive, NineSigma, or yet2.com (Lakhani 2008; Piller 2009). For example, InnoCentive is the global innovation marketplace that pays up to US$1 million to solve problems paid by large firms who post the problems on the site (Innocentive 2011). Open innovation sites have created another form of exploiting innovations without the need to discover problems and exploit them internally. Customers are defining the problem and asking problem solvers to come up with ideas to solve them. This allows entrepreneurial ICT firms to focus on their area of expertise without having to develop extra capabilities and thus lose opportunities due to a lack of resources to research and develop incremental or radical innovations.

5.2.2.2 Firm Characteristics

Research conducted indicates that entrepreneurial ventures begin in the domestic market and the founders then use their previous international experience to seek international opportunities. The importance of the founder or entrepreneurial team in growing new ventures internationally becomes critical for firm survival as the hostile home market is being dominated by ICT MNEs (ABS 2007). Australian ICT SMEs are driven to internationalize as MNE competition limits business growth (Shook, Priem & McGee 2003; Evangelista 2005). Beyond the founding stage of the new venture, management teams commit to more financial and human resources to develop the capabilities needed to execute international strategies and
achieve international goals (Guillén 2003; Cateora et al. 2009; Pride & Ferrell 2010; Rix 2011). As entrepreneurial ventures commit to growth, the firm’s business success is measured by total sales of the firm, profitability and growth during internationalization (Ireland et al. 2001; Ireland, Hitt & Sirmon 2003; Hanson et al. 2008).

Traditional approaches to strategy and internationalization assumed a relatively static world (Guillen 2003; Hanson et al. 2008). They aimed to build a sustainable competitive advantage by achieving dominant scale, occupying an attractive niche, or exploiting certain capabilities and resources (Barney; Grant 1981; Porter 1980; 1985; Dess, Lumpkin & Eisner 2007). However, globalization, internet technologies, and digital communication have converged to disrupt the business environment (Christensen 1997) resulting in most firms dying from a lack of innovation (Chesbrough 2006).

All firms use some form of innovation to develop and test new products and services. Hence, the traditional approaches can be costly and time-consuming, increasing organizational complexity and financial risks. To overcome these barriers, entrepreneurial firms are using an array of new approaches and technologies, especially in virtual environments, to generate, test, and exploit innovative ideas faster, at lower cost, and with less risk than their rivals can. Like MNEs who use InnoCentive to solve technical design problems, technology firms can use sites such as yet2.com to find buyers for their innovations through licencing or selling reducing the cost of hiring marketing resources and implementing marketing plans that are time consuming and expensive.

In addition to changing the way in which firms innovate to develop new products and services, firms need to broaden the scope of their innovations. In an increasingly turbulent ICT environment, business models, strategies, and routines can also become obsolete quickly and unpredictably. Entrepreneurial firms are innovating their product range as well as their business models. The internet has allowed software firms to provide free download of their products with either limited functionality or on a short-term basis allowing customers to test the product before they buy it. It seems that free software is generating more customers and generating revenue from different streams such as online advertising or custom development.

Agile entrepreneurial firms need to be able to adapt quickly to the global environment to stay competitive. Organizations need to create environments that promote knowledge flow, diversity, autonomy, risk taking, sharing, and flexibility on which dynamic capabilities thrive. Contrary to static strategic thinking, firms require dynamic strategies and flexible structures to
adapt to the environment. A flexible structure and the autonomy of decision making are powerful levers for increasing adaptability. Typically, dynamic firms have replaced hierarchy with modular units that freely communicate and recombine according to the opportunity at hand. To reinforce this framework, it is important to foster a culture of advantage-seeking behavior. As firms foster advantage-seeking behavior, dynamic firms drive decision making down to the innovators, allowing the people most likely to detect changes in the environment to respond quickly and proactively. A dynamic organization could be expected to succeed if it provides people with simple, generative rules to facilitate interaction, help people make trade-offs, and set the boundaries within which they can make decisions.

5.2.2.3 Dynamic Capabilities

Dynamic capabilities enable international entrepreneurial ventures to exploit opportunities in a rapidly changing global environment such as ICT. Entrepreneurial firms are dynamically transforming organizational and strategic routines to achieve new resource configurations as new ICT markets and technologies emerge (Eisenhardt & Martin 2000). Firms integrate and reconfigure internal and external competences to take advantage of international opportunities through dynamic international strategies, cooperative strategies and ICT capabilities based on the opportunity at hand.

The founders’ of new ventures used their superior knowledge to exploit their first product in ICT niche markets. New product development is enhanced as feedback from customers and industry analysis is used to modify capabilities to create new resource configurations. To enter international markets, the new venture selects the international strategy that is best suited to the opportunity at hand. International strategy selection requires evaluation of the feasibility of the opportunity based on the industry’s competitive conditions, the foreign market situation, government policies and the firm’s unique set of resources, capabilities and core competencies (Hanson et al. 2008). The results of the feasibility evaluation determine how the firm deploys and develops resources, as well as influencing the firm’s strategy development and performance.

International entrepreneurial ventures develop cooperative strategies such as international strategic alliances and joint ventures to increase their financial returns and to integrate their knowledge and resources to develop new products and take them to market (Alvarez & Barney 2001; Rothaermal & Deeds 2004). Joining dynamic alliance networks stimulates rapid exploration of new ideas, value-creating product innovations and subsequent successful global market entries (Simsek, Lubatkin & Kandemir 2003).
ICT capabilities combine marketing, internet and transformation of business activities (Foley & Ram 2002; Cateora et al. 2009). International opportunities influence strategies to build ICT capabilities to increase global opportunities and competitiveness. E-commerce enables international entrepreneurial ventures to transform business activities by allowing customers to buy online, thus enabling the ventures to rapidly adapt business models and enter global markets (Day 2011).

Opportunity seeking and innovation require a firm to think beyond its internal environment and work more closely with customers and suppliers. The unit of analysis for strategy has mainly been a single firm or business unit. Firms need to think about dynamic strategies for opportunity specific situations. Increasingly, ICT industry structure is better characterized as high-velocity with many unknowns and unpredictability. In such an environment advantages come to firms that can create effective strategies at the network or system level. Collaborative firms are therefore learning how to push activities outside the company without benefiting competitors and how to design and evolve strategies for networks without necessarily being able to rely on strong control mechanisms.

Collaborative firms manage their environments by using common standards to foster interaction with minimal barriers. They generate trust among strategic partnerships participants, by enabling people to interact frequently and by providing transparency. Entrepreneurial firms join cooperative strategies such as international strategic alliances and dynamic network alliances to rapidly increase growth, share knowledge and risks. ICT firms can now take advantage of ecosystems developed by firms such as Apple and Google or social coding such as open source encryption. Apple's adaptive system of suppliers, telecom partnerships, and numerous independent application developers, created to support the iPhone. Google's Android operating system, too, capitalized on a broad array of hardware partners and application developers. The ability to bring together the assets and capabilities of so many entities allowed Apple and Google to fast track the technology diffusion curve and become new market leaders at a phenomenal rate. In contrast social coding sites such as GitHub provide a collaborative online environment for teams to build software applications with simple management tools.

5.2.2.4 External Environment

Globalization and the internet have made ICT markets turbulent and unpredictable. The Australian ICT market is worth less than 1% of the global ICT market, creating a hostile environment that has intense competition and lacks exploitable opportunities for ICT
entrepreneurial firms (Evangelista 2005). International new ventures need to be proactive in seeking global opportunities in the global ICT market worth US$3.8 trillion and growing at a rate of 5.6% (Harrison 2008). SMEs planning for internationalization can access the export credit and promotion services offered by the Australian Government to speed up the process of internationalization and increase business growth by matching their business with international strategic alliances for ICT innovation (Austrade 2010).

The diffusion of technology made SME internationalization a feasible and cost-effective option (Knight & Cavusgil 2004). An internet technology such as e-commerce has allowed SMEs to compete with MNEs on a global scale. Firms that adopted selling products online in particular have the ability to reduce the cost of development by allowing customers to download their software products and test the products before they are purchased. This process also reduces the cost of packaging and distribution via digital downloads. Although selling online has increased global sales and profit margins for entrepreneurial firms, global diversity in culture increases the cost of development especially when translating products into different languages.

Founders’ take risks in domestic markets as they have superior knowledge and experience in their industry by starting up a new business. In the global environment while ICT opportunities are increasing in Asia, entrepreneurial firms entered similar western cultural and economic environments that are more distant (Vacchani 1991). Firms initially export to English speaking countries with large ICT markets such as the United States and the United Kingdom. This allows marketing products and services with minimal changes to their products and is less risky in receiving payment for orders. As firms acquired international market knowledge through their international strategic alliances and dynamic network alliances they entered closer markets and expanded their customer base.

5.3 Implications

The aim of this study was to investigate entrepreneurial internationalization through an entrepreneurial theoretical lens, to provide insights for entrepreneurs, managers and policy makers in the Australian ICT industry.

5.3.1: Implications for Existing Theory and Models

The investigation of the entrepreneurial internationalization activities of Australian ICT SMEs has advanced the body of knowledge in international entrepreneurship through an entrepreneurial theoretical framework. To date, there has been little research into
entrepreneurship as the primary theme of the internationalization of Australian ICT SMEs. This study has addressed this gap by investigating how Australian ICT SMES recognize and exploit international opportunities, and how Australian ICT SMEs approach internationalizing their business. The current study has a number of implications for entrepreneurship and international entrepreneurship theory and models as seen through an entrepreneurial theoretical lens.

**Implications for Entrepreneurship Theory**

The refined model offers a holistic view of entrepreneurial internationalization based on the entrepreneurial life-cycle. It addresses gaps in current theories as well as clarifying some of the ambiguities in the recent focus on entrepreneurship as the primary theme (Douglas 2009; Gaglio & Winter 2009, Timmons & Spinelli 2009). Broadly speaking, existing theories of international entrepreneurship predominantly address international opportunity recognition and exploitation via international strategies as an incremental process. In contrast the entrepreneurial internationalization process from an entrepreneurial theoretical lens illustrates entrepreneurial firms exploit international opportunities dynamically based on the opportunity at hand.

**Implications for International Entrepreneurship Theory**

Schumpeter (1934) set the scene for entrepreneurial innovative combinations which are still applicable to high-technology industries such as ICT, and provide strong examples of creative destruction such as the personal computer, the internet and mobile phones. Innovative combinations have been extended by theories in international business, internationalization and entrepreneurship with single elements rather than an integrated process of the five elements of innovative combinations (1) the introduction of a new good or service; (2) the introduction of a new method of production; (3) the opening of a new market; (4) the acquisition of a new source of supply of materials or parts; and (5) the start-up of a new venture in any industry. As a result, international entrepreneurship started explaining the theory from the opposite end of the entrepreneurial life-cycle to MNE theories, which have a macroeconomic view of the firm. International new ventures were measured after start-up by age and export sales, which are an extension of SME internationalization theories (born global). Whereas, ICT entrepreneurial ventures are regarded as fast growth firms that innovate and adapt to create wealth for customers and stakeholders (Timmons & Spinelli 2009).
5.3.2: Implications for Management Practices

This study provides insights for entrepreneurs and managers planning to internationalize. One implication of the results is that SMEs should not be discouraged from entering foreign markets. Rather, founders and managers of ICT firms should focus on the attractiveness of the global market and its potential for high growth and high export intensity. While global markets are turbulent and fast-changing, opportunities arise for innovative firms that can solve problems and create technological solutions through strategic alliances, foreign direct investment and dynamic network alliances. Firms need flexible structures and modular units or teams so they can adapt to the needs of their customers and respond quicker than their MNE competitors.

To be entrepreneurial, firms must develop an entrepreneurial mind-set among their managers and employees. International marketing knowledge plays an important role in entering international markets. Founder and the management team must emphasize the management of their resources, particularly human capital. For example, recruiting senior managers with international marketing experience was a key factor in increasing export intensity and establishing international strategic alliances among international new ventures. The importance of the capability to identify and exploit opportunities to gain and sustain a competitive advantage indicates that firms must have strong human capital. Human capital is critical for access to complementary resources from partners in order to compete effectively in domestic and international markets.

As entrepreneurial opportunities continue to appear in global markets, firms should be willing to engage in entrepreneurial internationalization. By entering global markets that are new to them, firms can learn new technologies and management practices and diffuse this knowledge throughout their firm. Furthermore, the knowledge firm’s gain can contribute to their innovations. Entrepreneurial ventures entering international markets must also be innovative and adapt their capabilities such as rapid prototyping of new products and services helps entrepreneurial ventures to fast track concept proofs enabling a critical ‘to market’ advantage over MNEs channel to lengthy commercialization planning paradigms. Thus, by developing the resources of human capital and firm capabilities, taking advantage of opportunities in domestic and international markets, and using the resources and knowledge gained in these markets to be innovative, firms achieve competitive advantages. As a result, they create value for their customers and stakeholders.
5.3.3 Implications for Policy Making

This study provides insights for policy makers in improving entrepreneurial internationalization in the ICT industry. Entrepreneurial activity is increasing around the world and firms practicing strategic entrepreneurship contribute to a country’s economic development. Countries such as Brazil, Russia, India and China have made dramatic economic progress by changing the institutional rules for businesses operating in their countries. Similarly, firms that seek to establish their technology as a standard are engaging in international strategic alliances because creating a standard produces a competitive advantage for the firm (Garud, Jain & Kumaraswamy 2002).

To move towards a knowledge economy, the Australian Government could assist in the development of dynamic capabilities within the Australian ICT industry. Such as ability to rapidly prototype new products and services, ability to rapidly scale to market and develop dynamic network alliances with ICT MNEs to increase the speed of international expansion for ICT SMEs. Government could stimulate the private sector to continuously engage in the creation of dynamic capabilities. The government can take a strategic approach to creating capabilities and stimulating their utilization in the knowledge economy by increasing funding for ICT research and development to enable SMEs to acquire long-term competitive advantages in the global ICT market. The government should consider industrial development in terms of capability building in the case of innovation-based industries, where technology itself is the product.

A new economic agenda should be created to increase investment in knowledge and knowledge-based industries if the Australian economy is to expand (Wood 2003). Rupert Murdoch (2001) noted that unless Australia spends more on higher education and the future growth of a knowledge-based economy, its economy is threatened with something far worse than global disadvantage, namely, global irrelevance! Hence, Australia should actively work towards developing an entrepreneurial culture focusing on the individual and how they could commercialize their ideas internationally to contribute to wealth creation at the microeconomic level of the entrepreneur and the firm.
5.4 Limitations and Future Research

5.4.1 Limitations of Qualitative Analysis

Despite the advantages of the qualitative analysis employed in this study, such as answering questions that other methods cannot and providing stronger conclusions for the how and why for theory building, it does have limitations.

Firstly, the qualitative analysis of the eight case firms is restricted to the ICT industry and therefore the findings may have limited generalizability to other industries.

Secondly, since this study uses a limited number of cases (eight firms in total), there is a risk that conclusions developed from the qualitative data analysis are idiosyncratic and have limited generalizability to other organizational contexts (Eisenhardt 1989).

Thirdly, because the qualitative analysis was limited to Australian ICT SMEs, it is not known whether all the factors of entrepreneurial internationalization identified in this study are unique to Australian ICT SMEs or are common to all Australian SMEs.

To expand on the findings from case studies, the results of studies using the case study method should be followed by wider empirical tests using probability sampling frames. In addition, as the sample uses an Australian sampling frame, caution should be exercised in generalizing from these findings to other country contexts. The implications of these limitations for future research are discussed in the following section.

5.4.2 Implications for Future Research

This study filled the gap in entrepreneurial internationalization by examining entrepreneurship as the primary theme. First, due to the qualitative nature of this study, further research is required to test the factors influencing entrepreneurial internationalization for generalizability among SMEs.

Second, a greater understanding of entrepreneurs, management teams, and venture capitalists/investors is required. For example, do intellectual and relational capital, or capabilities, differ across organizational contexts. Research in this area could also help develop a better understanding of how knowledge is created and exploited.

Third, since entrepreneurship literature distinguishes between nascent, serial and portfolio entrepreneurs, this provides an additional dimension for exploring entrepreneurial
internationalization and how it relates to cognitive processes and the development of knowledge and capabilities.

Fourth, given the variety of performance antecedents and outcomes relevant in IE, future research should acknowledge and try to examine a wide range of measures in an integrative manner. This could help our understanding of how specific performance measures are influenced by specific antecedents. This might also link antecedents and outcomes to venture type (e.g. global startup vs. geographically focused start-up).

Fifth, a holistic investigation into studies of entrepreneurial process and exit strategies among venture types and how they compare against their outcomes. For example domestic versus international ICT SMEs could be compared providing entrepreneurs and investors insight into the greatest return on investment.

Finally, in an institutional context a comparative study of entrepreneurial internationalization models could be tested in forecasting the impact on export and employment growth. This study could provide data for policy makers into which areas need government funding and support.

5.5 Key Contributions to Knowledge

This study contributes to entrepreneurship and international entrepreneurship literature and provides insights for managers and policy makers. This research adds richness to the international entrepreneurship literature by placing entrepreneurship as the primary theme within the entrepreneurial internationalization process (Jones, Covilleo & Tang 2011). This research has examined entrepreneurial internationalization through an entrepreneurial theoretical lens with the following contributions:

1. This study's contribution to theory lies in the extension of Evangelista’s (2005) model of international new venture creation and Oviatt and McDougall’s (2005) model of accelerated internationalization, as well as extending extant theories of SME internationalization where there has been limited examination of entrepreneurship as the primary theme, in particular issues concerning opportunity recognition and exploitation and new venture creation (Coviello, McDougall & Oviatt 2011; Jones, Coviello & Tang 2011).

2. This study provides a reconceptualized model to examine entrepreneurial internationalization through an entrepreneurial theoretical lens rather than an
international business lens by using entrepreneurship as the main theme. This study adds opportunity recognition and exploitation of products and services through the start-up of a new business in the domestic market. As an international opportunity is recognized products and services are dynamically exploited internationally based on the opportunity at hand. Therefore, each opportunity in a market is evaluated individually and resources are committed based on expected wealth creation.

3. This study shows that from an entrepreneurial process entrepreneurial ventures during start-up or international opportunity exploitation are focused on wealth creation, where a firm succeeds in business by achieving sales, profit and growth goals (Timmons & Spinelli 2009), as opposed to the speed of internationalization and export intensity (born global) (Pla-Barber & Escriba-Esteve 2006).

4. This study addresses the identified need for an examination of entrepreneurial internationalization through a qualitative study to examine how and why SMEs recognize and exploit opportunities, startup new businesses and internationalize their businesses (Weerawardena et al. 2007; Coombs, Sadrieh & Annavarjula 2009; Coviello, McDougall & Oviatt 2011; Jones, Coviello & Tang 2011).
References


ABS (2011) 'Characteristics of Australian Exporters 2009-10', ABS.


Aviram, A (2010) 'Entrepreneurial alertness and entrepreneurial awareness-are they the same?', *Academy of Entrepreneurship Journal*, vol. 16, no. 1.


Bell, JD (1995) 'The internationalisation of small computer software firms - a further challenge to "stage" theories.', *European Journal of Marketing*, vol. 29, no. 8, p. 60-75.


Cantillon, R (1755) 'Essai sur la nature du commerce en général', Fetcher, London.


Fuentelsaz, L, Gomez, J & Polo, Y (2002) 'Followers entry timing: Evidence from the Spanish banking sector'.

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Hamm, S (2005) 'IBM discovers the power of one', Business Week, 14 February, p. 80.


Johanson, J & Vahlne, JE (1977) 'The Internationalization process of the firm - a model of knowledge development and increasing foreign market commitments', *Journal of International Business Studies*, vol. 8, no. 1, p. 23-32.


Knight, F (1921) 'Risk, Uncertainty and Profit', Houghton Mifflin, Boston.


Murdoch, R (2001) 'Only brain power can secure the future', *The Age*.


Rix, P (2011) 'Marketing a Practical Approach', 7th edn, McGraw Hill Australia, North Ryde NSW.


Shane, S (1992) 'Why do some societies invent more than others?', *Journal of Business Venturing*, vol. 7, p. 29-46.


Temperley, NC, Galloway, J & Liston, J (2004) 'SMEs In Australia's High-Technology Sector: Challenges and Opportunities', CSIRO and AEEMA.


Tookey, DA (1964) 'Factors Associated with Success in Exporting', *Journal of Management Studies*, vol. 1, no. March.


Yin, RK (2009) 'Case Study Research: Design and Methods', Fourth edn, SAGE.


Appendix A: Invitation to Participate in Research

Invitation to Participate in a Research Project

Project Information Statement

Project Title:
An exploratory study of export intensity in Australian ICT SMEs

Investigators:

• Mr. Fahri Benli (Business Management PhD candidate), Tel: 0406 784 063, fahri.benli@rmit.edu.au.

• Dr. David Gilbert (Senior Supervisor: Senior Lecturer in Entrepreneurship & Small Business, Tel: 9925 5196, david.gilbert@rmit.edu.au)
Dear Interviewee;

You are invited to participate in a research project being conducted by Fahri Benli towards a PhD in Management at the School of Management at RMIT University. This information sheet describes the project in straightforward language, or ‘plain English’. Please read this sheet carefully and be confident that you understand its contents before deciding whether to participate. If you have any questions about the project, please ask one of the investigators.

**Who is involved in this research project? Why is it being conducted?**

The investigator (Fahri Benli) is a PhD candidate enrolled in a full-time PhD degree in Management in the School of Management at RMIT University.

The supervisor for this research project is:

- Dr. David Gilbert (Senior Supervisor: Senior Lecturer in Entrepreneurship & Small Business, Tel: (03) 9925 5196, david.gilbert@rmit.edu.au)

Through this project the investigator hopes to explore the export intensity of Australian ICT SMEs. Ultimately, this research is being conducted in order to develop recommendations to improve export intensity in Australian ICT SMEs.

**Why have you been approached?**

You have been approached to participate in this research because your expertise can be of valuable input in improving export intensity in Australian ICT SMEs. You have been individually and
personally selected by the investigator (Fahri Benli) and your contact details have been obtained from your website.

**What is the project about? What are the questions being addressed?**

This project is about developing recommendations to improve export intensity for Australian ICT SMEs. The study has been designed by the researcher, which will be refined through the conducting of interviews. The interviews will provide insight and theoretical foundation for the development of recommendations to ICT SMEs, policymakers and further research.

The questions being addressed deal specifically with how information from the interviews will be used in order to develop the recommendations. Approximately 12 interviews are expected to be held during this research study.

**If I agree to participate, what will I be required to do?**

If you agree to participate, you are requested to agree to be engaged in a 45-60 minute interview with the investigator (Fahri Benli) from any dates between November 1 and November 30, 2007 to be conducted in Melbourne. Please fill in the consent form (*Appendix 1*) and provide it to the investigator before commencing the interview.

The interview will have several open ended questions with the underlying focus directed towards discussing and analyzing the proposed improvements to export intensity. An outline of the research questions for the interview is also provided in (*Appendix A*).

**What are the risks or disadvantages associated with participation?**

There are no risks associated with participation in this research project and any future publication stemming from this research will respect your right as agreed in the consent form (*Appendix 1*).
‘If you are unduly concerned about your responses to any of the questionnaire items or if you find participation in the project distressing, you should contact Fahri Benli (‘the researcher’) as soon as convenient. Fahri Benli will discuss your concerns with you confidentially and suggest appropriate follow-up, if necessary.

**What are the benefits associated with participation?**

The benefit associated with participating in this research project is contributing your invaluable expertise and experience in helping the investigator to improve export intensity in Australian ICT SMEs.

**What will happen to the information I provide?**

All information provided in the interview will be tape recorded (the participant may request at any time that taping cease during the interview) for data integrity and transcribed. The information will then be entered using NVivo software to allow for qualitative analysis of the results. The analysis will contribute towards improving export intensity for Australian ICT SMEs.

The analysis will constitute the investigator’s thesis report, which may also be published in scholarly journals. Steps are also put in place to securely store and safeguard the information collected during the tenure of this research project and access to the provided information will only be for the investigator and his immediate supervisor (Dr. David Gilbert). All collected information will be kept securely at RMIT for a period of 5 years upon completion of the research thesis before being destroyed.

However, ‘Any information that you provide can be disclosed only if (1) it is to protect you or others from harm, (2) a court order is produced, or (3) you provided the researchers with written permission’.

**What are my rights as a participant?**

- As a participant you have:
  - The right to withdraw their participation at any time, without prejudice.
- The right to have any unprocessed data withdrawn and destroyed, provided it can be reliably identified, and provided that so doing does not increase the risk for the participant.
- The right to have any questions answered at any time.

**Whom should I contact if I have any questions?**

Fahri Benli, mobile: 0406784063, email: fahri.benli@rmit.edu.au

Dr. David Gilbert, Tel: 9925 5196, email: david.gilbert@rmit.edu.au

**What other issues should I be aware of before deciding whether to participate?**

There are no other issues that you should be aware of as a participant.

Yours Sincerely

Fahri Benli

Dip.Bus, MBA

Any complaints about your participation in this project may be directed to the Secretary, Portfolio Human Research Ethics Sub Committee, Business Portfolio, RMIT, GPO Box 2476V, Melbourne, 3001. The telephone number is (03) 9925 5594, email address rdu@rmit.edu.au. Details of the complaints procedure are available from the above address or http://www.rmit.edu.au/council/hrec.
Appendix B: Survey Instrument

Entrepreneurial Internationalization business interview guide

Section 1 – Business Profile

- When was the business first established?
- How many employees (full time equivalent) does the business employ?
- What has been the approximate rate of growth of sales over the last three years?


- What range indicates the average gross sales of the business?

Less than $1m  ☐  $10-19m  ☐  $100m+  ☐
$1 - $5m  ☐  $20-49m  ☐
$6-9m  ☐  $50-99m  ☐

- In each of the last three years, what % of the business’s sales have been from exports to overseas markets?

• In what year did the business commence sales to overseas markets?

Year……………..

• In each of the last three years, what is the total number of countries that the business has made sales to?


• Which specific countries has the business exported to in the last three years?

__________________________________________

__________________________________________

__________________________________________

• What would be the business’s preferred method of exporting?

Directly to subsidiaries ☐ Via agents in Australia ☐
To parent company ☐ Via agents overseas ☐
To unrelated company ☐ Online ☐
Other ☐

• In each of the last three years, has the business been involved in formal networking with other businesses? (Please tick response for each year).
How would you describe the business objectives of the business?

*(Please rank each objective where 1 = most important, 2 = next important, etc).*

<table>
<thead>
<tr>
<th>To increase the value of the business</th>
</tr>
</thead>
<tbody>
<tr>
<td>To increase profitability</td>
</tr>
<tr>
<td>To employ family members &amp; provide them with careers</td>
</tr>
<tr>
<td>To grow the business</td>
</tr>
<tr>
<td>To sell the business</td>
</tr>
<tr>
<td>To pass on to the next generation</td>
</tr>
</tbody>
</table>
What are the top three sources of capital for the business?

(Please rank each objective where 1 = most important, 2 = next important, etc).

<table>
<thead>
<tr>
<th>Shareholder’s funds</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Retained profits</td>
<td></td>
</tr>
<tr>
<td>Cash flow</td>
<td></td>
</tr>
<tr>
<td>Bank overdraft</td>
<td></td>
</tr>
<tr>
<td>Bank loans</td>
<td></td>
</tr>
<tr>
<td>Equity finance</td>
<td></td>
</tr>
<tr>
<td>Leasing</td>
<td></td>
</tr>
<tr>
<td>Family Loans</td>
<td></td>
</tr>
</tbody>
</table>

How is the senior management function structured in the business?

(Please indicate title position, and whether the person possesses a tertiary qualification in business management/commerce or administration)

<table>
<thead>
<tr>
<th>Management Position</th>
<th>Tertiary qualification in business management, commerce or admin?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Yes ☐ No ☐</td>
</tr>
<tr>
<td>2.</td>
<td>Yes ☐ No ☐</td>
</tr>
<tr>
<td>3.</td>
<td>Yes ☐ No ☐</td>
</tr>
<tr>
<td>4.</td>
<td>Yes ☐ No ☐</td>
</tr>
<tr>
<td>5.</td>
<td>Yes ☐ No ☐</td>
</tr>
<tr>
<td>6.</td>
<td>Yes ☐ No ☐</td>
</tr>
</tbody>
</table>
7. **Does the business have any of the following business practices in place?**

*(Please circle the most appropriate response for each business practice?)*

<table>
<thead>
<tr>
<th>Business Practice</th>
<th>Yes □</th>
<th>No □</th>
</tr>
</thead>
<tbody>
<tr>
<td>Documented strategic or business plan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Export marketing plan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regular profit / loss statements (once per year)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benchmarking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management training of employees during the year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Documented organizational structure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Documented job descriptions for managers</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Does the business have any of the following business improvement techniques in place?** *(Please circle the most appropriate response for each technique?)*

<table>
<thead>
<tr>
<th>Business technique</th>
<th>Yes □</th>
<th>No □</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovation Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Quality Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competitive Lean Manufacturing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply-Chain Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project Management</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
How frequently did the business seek business advice from the following sources during the 2006/2007 financial year? *(Please circle the most appropriate response for each source of advice?)*

<table>
<thead>
<tr>
<th>Source of advice</th>
<th>Frequently used in the 2006/2007 financial year</th>
</tr>
</thead>
<tbody>
<tr>
<td>External accountant</td>
<td>Never ☐ 1-3 times ☐ &gt;3 times ☐</td>
</tr>
<tr>
<td>Bank</td>
<td>Never ☐ 1-3 times ☐ &gt;3 times ☐</td>
</tr>
<tr>
<td>Family or friends</td>
<td>Never ☐ 1-3 times ☐ &gt;3 times ☐</td>
</tr>
<tr>
<td>Government small business agencies</td>
<td>Never ☐ 1-3 times ☐ &gt;3 times ☐</td>
</tr>
<tr>
<td>Austrade</td>
<td>Never ☐ 1-3 times ☐ &gt;3 times ☐</td>
</tr>
<tr>
<td>Industry associations/chamber of commerce</td>
<td>Never ☐ 1-3 times ☐ &gt;3 times ☐</td>
</tr>
<tr>
<td>Solicitor</td>
<td>Never ☐ 1-3 times ☐ &gt;3 times ☐</td>
</tr>
<tr>
<td>Business consultants</td>
<td>Never ☐ 1-3 times ☐ &gt;3 times ☐</td>
</tr>
</tbody>
</table>

**Information about interviewee:**

- What is your current role in the organization?

- How long have you occupied this position?

- How and when did you commence working for the business?

- What is the nature of your working background and education?
What are the key skills you bring to the business?

Section 2 – Managerial capabilities of the business

Management structure:

- What is the current management structure?

- How has this changed over time? What caused these changes?

- To what extent have formal job descriptions being developed for each management role?

- Is this current management structure adequate in your view? How might it be improved?

- Does the business have an exit plan? What effect has the exit plan had on the business structure? Positive or Negative?

- In what ways (if any) has the management structure assisted or inhibited the international expansion of the business?

Management processes:

- How are decisions made, within the business? Who is involved in the process?

- In what ways does the business plan for the future?
  - Who is involved in this process?
In your view, is this adequate? How might it be improved?

- How is performance monitored in this business?
  - Who is involved in this process?
  - In your view, is this adequate? How might it be improved?

- To what extent does the business engage in the training of its management?

**Section 3 – Internationalization/Globalisation Process**

- What do you understand by the terms ‘internationalization’ and ‘globalisation’? Do you think there is a difference?

- In what ways has internationalization or globalisation affected the business?

- In your opinion, why has the business expanded internationally or globally?

_Probing questions:_

- What was the trigger / critical event?
- Who were key decision makers in expanding internationally or globally?
  - How was this decision made?
- What is the key motivation for expanding internationally or globally?
  - How does this align with the objectives of the business? Such as Growth?
- What was the Market entry method employed (born global, international office, distributor, agent, joint venture, direct sales, e-commerce)
- What countries to target?
From your perspective, what future plans does the business have with regard to its international or global expansion?

- Increase – what does the business need to do in order to achieve this?

- Same or decrease – why is this?

**Section 4 – Influences on Internationalization**

What do you think are the differentiating capabilities of the business?

- What advantages (if any) arise from being a small to medium enterprise (SME)?

- What capabilities have been particularly important in order to grow internationally or globally?

- Has there been any particular capability that the business has had to develop in order to grow internationally or globally? Who has been the instigator/driver of this change?

- Are there any other capabilities that the business may need to develop in order to further grow internationally or globally?

What external relationships have been particularly important to the business (e.g. suppliers, distributors, professional associations, government agencies, end-user customers)?

- In what (if any) way has being an SME assisted in developing these important relationships?
In what (if any) way have these important relationships influenced the business’s international or global expansion?

Section 5 – Effects of Internationalization on the business

What effect has international or global expansion had upon the business?

Probing questions:

- Business success?
- Production processes?
- Governance?
- Ethics?
- Management: people and practices?
- Opportunities?
- Innovation?

Section 6

- To what extent are senior managers able to act independently and make decisions?
  - Effect on international or global expansion?

- To what extent has the business being innovative with its PRODUCTS, PROCESSES and TECHNOLOGY? Could you provide examples?
  - Who are the key drivers of innovation?
  - Effect on international or global expansion?

- Would you regard the business as leader or follower with respect to:
  - The development of new processes with your business? Could you provide examples?
The development of new products? Could you provide examples?

Identifying new opportunities? Could you provide examples?

To what extent does the business actively pursue business opportunities internationally or globally?

To what extent does the business use any systems or processes in opportunity identification?

What is the business’s attitudes towards risk?
  - Financing?
    - Comfortable with venturing into new markets?
    - Willingness to commit large sums of money to new ideas / projects?

To what extent does the business actively take on its competitors?

Section 7

- How do you use internet technology to access and develop markets? Could you give examples of the technologies used?

- Do you use internet technologies such as B2B, C2C portals like Ali Baba, or Guru?

- Are there any aspects of the business’s export performance that, in retrospect, you think could have been done differently?
  - Strategic planning?
  - Management: people and processes?
  - Technology and Innovation?
  - Export/Market knowledge?
- From your perspective, do you think ICT SMEs have any particular advantages or disadvantages when it comes to growing internationally or globally?
  - Research shows that approximately 4% of all Australian business’s export into international or global markets, and approximately 3% of all Australian exporting business’s are SMEs. Based upon your dealings with SMEs, why do you think this is?

- What advice would you give SMEs that were considering exporting?

- Is there anything else you would like to say that we haven’t covered that is relevant to this study?

- Any supporting documentation that is relevant to the study that I may peruse.
Appendix C: Interview Consent Form

RMIT HUMAN RESEARCH ETHICS COMMITTEE

Prescribed Consent Form for Persons Participating In Research Projects Involving Interviews, Questionnaires, Focus Groups or Disclosure of Personal Information

PORTFOLIO OF

Business

SCHOOL/CENTRE OF

Management

Name of Participant:

Project Title: An exploratory study of export intensity in Australian ICT SMEs

Name(s) of Investigators: (1) Fahri Benli Phone: 

(2) Dr. David Gilbert Phone: 9925 5196

1. I have received a statement explaining the interview/questionnaire involved in this project.

2. I consent to participate in the above project, the particulars of which - including details of the interviews or questionnaires - have been explained to me.

3. I authorise the investigator or his or her assistant to interview me or administer a questionnaire.

4. I give my permission to be audio taped: ☐ Yes ☐ No

5. I give my permission for my name or identity to be used: ☐ Yes ☐ No

6. I acknowledge that:

   (a) Having read the Plain Language Statement, I agree to the general purpose, methods and demands of the study.

   (b) I have been informed that I am free to withdraw from the project at any time and to withdraw any unprocessed data previously supplied.

   (c) The project is for the purpose of research and/or teaching. It may not be of direct benefit to me.

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(d) The privacy of the information I provide will be safeguarded. However should information of a private nature need to be disclosed for moral, clinical or legal reasons, I will be given an opportunity to negotiate the terms of this disclosure.

If I participate in a focus group I understand that whilst all participants will be asked to keep the conversation confidential, the researcher cannot guarantee that other participants will do this.

(e) The security of the research data is assured during and after completion of the study. The data collected during the study may be published, and a report of the project outcomes will be provided to___________(researcher to specify). Any information which may be used to identify me will not be used unless I have given my permission (see point 5).

Participant’s Consent

Name: _______________________________ Date: __________________

(Participant)

Name: _______________________________ Date: __________________

(Witness to signature)
Where participant is under 18 years of age:

I consent to the participation of _________________________ in the above project.

Signature: (1)                                             (2) Date: __________________
(Signatures of parents or guardians)

Name: __________________________________________ Date: __________________
(Witness to signature)

Participants should be given a photocopy of this consent form after it has been signed.

Any complaints about your participation in this project may be directed to the Chair, Portfolio Human Research Ethics Sub-Committee, Business Portfolio, GPO Box 2476V, Melbourne, 3001. The telephone number is (03) 9925 5594 or email address rdu@rmit.edu.au. Details of the complaints procedure are available from: www.rmit.edu.au/council/hrec