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**The Internationalisation Process of High Technology INVs: The
Role of Social Capital and Network Relationships**



Spyridon Batas

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

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DECLARATION

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Abstract

This study examined the different roles of social capital (i.e. efficacy, serendipity, and liability), network relationships, network closure and structure important to the internationalisation process of high technology International New Ventures (INVs). Although there has been a growing recognition of the role of social capital in the internationalisation process of firms, research into the three roles of social capital and their interrelation with network closure and structure is a research area that very few empirical studies exist. This study seeks to fill this gap by gaining rich insights into the internationalisation process of high technology INVs and by exploring the importance of strong and weak ties mechanism in early and later international market entries. In this study social capital is the sum of actual and potential resources that derive from network relationships.

The study built on qualitative data collected from nine in-depth case studies of Greek and Scottish software INVs. The multiple semi-structure interviews were carried out in 2013 and 2014 with founders and CEOs. The material of the nine cases was used to understand and explain the internationalisation process and how social capital and network relationship influence it. The case material analysis proceeded from within case analysis to cross-case analysis in order to explore common patterns and differences across the cases. A theoretical framework based on the existing gaps was developed and tested in this research.

This study contributed to the literature on International Business (IB), International Entrepreneurship (IE) and Social capital by exploring the evolution of social capital diachronically. A new type of INV was found: the niche market INV, which strategically uses its social capital to capture and exploit new opportunities in foreign markets. New insights are given to which role of social capital becomes more crucial in initial and later international market entries. This study found that the efficacy role of social capital played an important role both in initial and later stages of internationalisation. However, the serendipity role of social capital was more important for companies with many structural holes that did not have the necessary network relationships to bridge them. This study showed that Greek and Scottish entrepreneurs have different backgrounds; Greek entrepreneurs lack previous international work experience. It was found that virtual social capital in the digital era is becoming more and more important. A number of implications for management practice, policy and education are presented for developed markets firm managers and governments in the fields of IE and IB.

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Abbreviations

B2C (Business to Customer)

CEO (Chief Executive Officer)

CTO (Chief Technology Officer)

DOI (Degree of Internationalisation)

EU (European Union)

IB (International Business)

IE (International Entrepreneurship)

INVs (International New Ventures)

MNEs (Multinational Enterprises)

RQ (Research Questions)

SMEs (Small and Medium Sized Enterprises)

US (United States)

VC (Vice Chairman)

VP (Vice President)

Chapter 1 Introduction

This chapter introduces the research topic as well as the research questions and the rationale behind the research. The chosen research methodology is discussed and key theories and concepts are defined. At the end of this chapter the outline of this thesis is summarised.

1.1 Background of the research

This thesis investigates the role of social capital and network relationships in the internationalisation process of high technology International New Ventures (INVs). Small and Medium Sized companies (SMEs) are the backbone of many countries and play a particularly important role in domestic economies. The importance of firms that rapidly internationalise from their inception has received the focus of previous research (e.g. Oviatt and McDougall, 1994; McDougall et al. 1994; Knight and Cavusgil, 1996; Rasmussen and Madsen, 2002; Kuivalainen et al., 2007; Gabrielsson et al., 2008; Hashai, 2011). The importance to enter foreign markets is not only a choice for firms but also a strategic necessity (e.g. McDougall et al., 1994; Ojala, 2009).

One of the most used models to describe internationalisation is the initial Uppsala model (Johanson and Widersheim-Paul, 1975; Johanson and Vahlne, 1977). The main assumption behind the initial Uppsala model is that internationalisation is evolutionary and is based on the acquisition, integration and use of knowledge. Firms increase their market commitment to foreign markets successively (Johanson and Vahlne, 1977). Scholars challenged and criticised this model (e.g. Oviatt and McDougall, 1994; Bell, 1995) that does not capture internationalisation of rapidly internationalising firms from inception. Johanson and Vahlne (2009) revisited their initial Uppsala model and argued that liability of foreignness (i.e. markets with high psychic distance) became less important as firms face the liability of outsidership. This refers to firms that are not members of a network. This liability may impede the internationalisation of firms. Additionally, Johanson and Vahlne (2009) responded to

their criticsers and highlighted that they never mentioned in their model that internationalisation takes place in stages. They also added that speed of internationalisation may follow a slow or fast pace.

Another theory that has been commonly used to study the internationalisation of firms is the network model developed by Johanson and Mattsson (1988). In this model it was demonstrated that firms used a variety of networks to assist their internationalisation. Additionally, four types of international firms were introduced and categorised based on various factors amongst others the access to social capital.

Recent work has challenged the validity of the traditional internationalisation theories (e.g. McDougall, 1989; Oviatt and McDougall, 1994) as some firms internationalise from their inception and do not incrementally internationalise their operations. The INV theory (Oviatt and McDougall, 1994) began to search why some firms' internationalisation behaviour could not be explained by the traditional internationalisation theories (e.g. initial Uppsala model). Researchers began to examine and explore why INVs and born-global firms differ from other type of firms and why traditional theories could not offer sufficient explanations (e.g. Coviello and Munro, 1995, 1997; Knight and Cavusgil, 1996; Madsen and Servais, 1997; Bell et al., 2003).

Oviatt and McDougall (1994) defined INVs as firms that from inception pursue to gain significant competitive advantage by using their resources effectively and the sale of outputs in multiple countries. The same authors suggested that four elements are necessary for a sustainable INV. The first element is related to firm's internalisation of transactions and the use of hierarchical authority as the mechanism of governance. The second element is related to alternative governance structures and prioritises scarcity of resources that pushes INVs to consider and use alternative approaches and planning for managing crucial assets. The third element is related to foreign location advantage and underlines the ability of INVs to develop their competitive advantage by synthesising resources across national borders. The fourth element is related to unique resources, the importance of proprietary knowledge is stressed especially in INVs that are knowledge based. According to Oviatt and McDougall (1994) mobility of knowledge may be one of the explanations for rapid internationalisation.

Previous research on INVs has showed that technological advances such as the internet facilitate the internationalisation of young firms (e.g. McDougall et al., 1994; Oviatt and McDougall, 1994; Reuber and Fischer, 1997, 2011; Fischer and Reuber, 2011). However, it has been stressed that the role of the internet in the field of International Entrepreneurship has been limited examined (e.g. Fischer and Reuber, 2011; Reuber and Fischer, 2011). Additionally, there has been little work done on the role of virtual social capital and how this can influence the internationalisation of firms. The extant literature has searched the role of online brand communities (e.g. Reuber and Fischer, 2011) but has not offered any answers whether the social capital that derives from physical or virtual networks is more beneficial for firms.

INVs are strongly associated with their founders. Founders are able to identify and exploit international opportunities and they have personal contacts in foreign markets (McDougall et al., 1994). They also develop international relationships during their studies abroad and from their previous international work experience (e.g. Reuber and Fischer, 1997; Crick and Jones, 2000). Oviatt and McDougall (1995) found that international business networks, part of social capital, should be pursued by INVs. Some questions regarding the role of social capital have remained unanswered and especially in the context of INVs. The literature has offered very limited answers concerning international social capital and its role in the internationalisation process of high technology INVs. For example Coviello and Munro (1995) examined high technology firms and found that networks facilitate internationalisation.

Previous work on social capital has mainly focused on network closure and structure and has not considered the importance of social capital in the internationalisation process of rapidly internationalising firms. Coleman (1988) argued that social capital is the value of relationships. Nahapiet and Ghoshal (1998) in their study examined social capital in relation to relationship networks. Kogut and Zander (1996) showed, in the context of strategy research, how social capital can assist firms to develop their core competencies. Nahapiet and Ghoshal (1998) argued that social capital assists to the creation of intellectual capital. Furthermore, Uzzi (1999) showed that social capital helps firms to get access to resources. Burt (1997)

highlighted that managers who have built social capital can easier capture opportunities. Oviatt and McDougall (2005) defined International Entrepreneurship as “...the discovery, enactment, evaluation, and exploitation of opportunities – across national borders – to create future goods and services” so the role of social capital and network relationships become crucial for the internationalisation process of INVs.

Napahiet and Ghoshal (1998) and Adler and Kwon (2002) clearly showed the importance of social capital for firms. Although there has been a growing recognition of the role of social capital in the internationalisation of firms, research into the three roles of social capital (i.e. efficacy, serendipity and liability) as described by Chetty and Agndal (2007) is an area where there have been very few empirical studies. The efficacy role of social capital is based on the effectiveness of social capital. The serendipity role of social capital refers to unplanned events that trigger internationalisation. Finally, the liability role is based on the ineffectiveness of social capital due to the low commitment amongst actors (Chetty and Agndal, 2007). Furthermore, network closure and structure have been limited studied in relation to the three roles of social capital in the internationalisation of firms (e.g. Angdal et al., 2008; Kontinen and Ojala, 2011a). This thesis seeks to fill the gap by understanding in-depth and gaining rich insights into the different roles of social capital, network closure and structure in the internationalisation process of INVs.

1.2 Research questions

The aim of this thesis is to contribute to the fields of International Business and International Entrepreneurship by offering an insight in the mechanism of network closure and structure and the three roles of social capital in the internationalisation process of high technology INVs. The research questions are briefly introduced here and are presented in-depth in chapter three. The first research question attempts to explain how network relationships and social capital influence the internationalisation of high technology INVs in their early and later stages of internationalisation. This will offer adequate answers to which role of social capital

is more important in early international market entries and which one is more crucial in later international market entries.

RQ1: What is the role of network relationships and social capital in high technology INVs early and late international market entries?

The second research question addressed in this study examines the interrelation between the internationalisation process of high technology INVs and the three roles of social capital, network relationships, structural dimension and network closure. This question will offer insights in the mechanism of social capital and structural dimension and network closure in the internationalisation process of high technology INVs, as it was presented earlier there have been given limited answers on this mechanism and the three roles of social capital.

RQ2: How is the mechanism of structural dimension and network closure interrelated with the different roles of social capital and network relationships in the internationalisation process?

The third research question concerns the evolution of social capital diachronically. It is important to comprehend if social capital follows the internationalisation speed of high technology INVs. Moreover, the time dimension has been limitedly examined in relation to early and later foreign market entries and how social capital can influence them.

RQ3: How does social capital evolve over time? How does time affect the internationalisation process? How does social capital influence early and late foreign market entries?

1.3 Research focus

This research examines the internationalisation process at the firm level. The aim is to show and explain how high technology firms rapidly internationalise and how the three roles of social capital and network closure and structure contribute to their fast internationalisation. Some theories are less dynamic such as Dunning's OLI paradigm and the transaction cost theory (e.g. Williamson, 1975) so in this study those are not included but briefly summarised in order to illustrate the evolution of the International Business field. This study focuses on social capital (Nahapiet and

Ghoshal, 1998; Adler and Kwon, 2002), the different roles of social capital (Chetty and Agndal, 2007; Agndal et al., 2008), network closure (e.g. Granovetter, 1973, 1985; Coleman, 1988), structural holes (e.g. Burt, 1992, 2000), network relationships (e.g. Coviello and Munro, 1995, 1997) and the INVs theory (e.g. Oviatt and McDougall, 1994, 2005; McDougall et al., 1994). This study is also complemented by the revisited Uppsala Model (Johanson and Vahlne, 2009).

This study focuses mainly on understanding the internationalisation process of high technology INVs and partly on why they internationalise. High technology firms are pushed to internationalise due to market conditions and the small domestic market (e.g. Reuber and Fischer, 1997; Oviatt and McDougall, 1999; Etemad et al., 2001; Kudina et al., 2008). In other words internationalisation is a necessity for a firm's survival. This study examines young firms that internationalise rapidly, so internationalisation should occur within six years since the inception of the firm (e.g. Oviatt and McDougall, 1997; Zahra et al., 2000).

The suggestions of Reuber and Fischer (1997) to focus on a single industry were followed because it is easier to control industry effects on internationalisation. Previous scholars selected the software sector for their studies (e.g. Coviello and Munro, 1995, 1997; Bell, 1995; Reuber and Fischer, 1997, 2011; Zain and Ng, 2006; Ojala, 2009; Dib et al., 2010; Prashantham and Dhanaraj, 2010; Fischer and Reuber, 2011) so the researcher decided to focus on the software industry because they operate in rapidly changing environments. Furthermore, the market conditions and standards change fast and many SMEs and entrepreneurial firms are common. In Scotland and Greece high technology firms tend to internationalise due to the limited domestic markets. Especially in Greece where the high technology sector is not very developed firms need to become global players. Additionally, the current economic crisis in Greece that has started in 2009 has pushed many firms to internationalise to survive from the shrinking domestic market demand.

1.4 Research methods

This research was designed to understand and examine the different roles of social capital, network closure and structure in high technology INVs and their role

and impact on the internationalisation process. In particular, the research questions examine the efficacy, serendipity and liability roles of social capital and their interrelation with network closure and structure in early and later internationalisation process.

The case study approach is utilised in this study because according to Yin (1994, 2009) why and how questions can be answered. In addition, Eisenhardt's work (1989a,b, 1991) is also followed to use multiple case studies in order to build theory. This study's research questions justify the use of case studies because the second and third questions examine how social capital and network closure and structure influence the internationalisation process. Eisenhardt (1989b) suggested that the ideal number of case studies is between 4 and 10 cases. A big number of cases increase complexity and interpretation of the results. For those reasons it was decided to examine 9 cases in total, four in Scotland and five in Greece. Qualitative data were collected from 25 semi-structured interviews with founders and CEOs of the 9 firms because these people are responsible for the internationalisation of their firms. The qualitative approach facilitates the researcher to have a clear and comprehensive view of the context (Ghauri and Gronhaug, 2005; Sinkovics et al., 2008). On the other hand quantitative research cannot offer satisfactory explanations between the observed people and the context (Creswell, 2003). Finally, according to Creswell (2003) quantitative research does not focus on participants.

1.5 Core concepts

In order to ensure compatible phraseology and to facilitate comparisons with previous studies the core concepts of this study are specifically explained. Firstly, the definition of INVs and internationalisation are defined. Secondly, the definition of social capital used in this study is presented. Finally, the definition of ties and network closure are presented.

INVs and Internationalisation

This study examines Greek and Scottish high technology firms that rapidly internationalise after their inception. Those firms explicitly seek to penetrate foreign markets both geographically close and distant. This study follows the definition of McDougall et al. (1994), Oviatt and McDougall (1994, 1997) on INVs where firms within six years from their inception internationalise and 25% to 30% of their total revenue comes from foreign operations. Additionally, the size of the selected firms is in accordance with the definition of the European Commission on SMEs where the total number of employees should not exceed 250 people (European Commission, 2013). In terms of internationalisation Zahra et al. (1998) suggested that export activities can mirror a firm's success in foreign markets. Reuber and Fischer (1997) calculated the degree of internationalisation or DOI by examining three aspects. The first aspect was the percentage of total sales revenue coming from foreign sales revenue. The second aspect consists of the time of employees that spend on international activities. Employees should spend more than 50% of their time abroad. The final aspect is related to how much the activities of a firm are geographically spread or in other words the geographic scope of activities.

In this study three aspects were considered to measure the internationalisation process of high technology INVs. The first one is the speed of internationalisation as described by Oviatt and McDougall (2005) and refers to the first foreign market entry since the inception of the firm. The second aspect consists of the geographic scope, in other words in how many countries the firm has sales and operations. The last aspect encompasses the entry mode, for example low and high market commitments as described by Johanson and Vahlne (1977).

Social capital

Social capital is very important both for firms and individuals. Social capital can offer unique assets to actors such as knowledge and access to information. Nahapiet and Ghoshal (1998), Tsai and Ghoshal (1998) and Adler and Kwon (2002) showed that social capital offers benefits to firms. Adler and Kwon (2002) highlighted that

social capital can be categorised into internal, external and both based on the focus on internal, external ties or a combination of the two. This study follows the definition of Nahapiet and Ghoshal (1998:243) who argued that social capital is “the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. Social capital thus comprises both the network and the assets that may be mobilised through that network”. Thus, social capital is examined both on individual level (i.e. founder(s) and CEO) and firm level. Tsai and Ghoshal (1998) highlighted that resource exchange and product innovation can be increased when there is high level of social capital between the interaction of firms.

Recent work on social capital has highlighted its impact on young firms. Social capital offers young firms access to venture funding (Uzzi, 1999; Florin et al., 2003), assists them to the development of their strategy (Stevenson and Radin, 2009), supports new product development (Yli-Renko et al., 2001) and facilitates their internationalisation (Coviello, 2006; Wright et al., 2007). Previous research showed that social capital plays an important role on the internationalisation process of firms and international market entries (Coviello and Munro, 1997; Yli-Renko et al., 2001; Oviatt and McDougall, 2005; Chetty and Agndal, 2007; Agndal et al., 2008; Kontinen and Ojala, 2011a). Lindstrand et al. (2011) examined longitudinally 14 Swedish biotechnology SMEs and concluded that the three dimensions of social capital (i.e. structural, relational and cognitive) as described by Nahapiet and Ghoshal (1998) were important for accessing knowledge on foreign markets and financial resources. They also concluded that social capital may affect the speed of internationalisation. Nevertheless, rapidly internationalised firms may not be able to identify the possible challenges of a foreign market. On the other hand, incremental internationalising firms can understand foreign markets and become successful (Lindstrand et al., 2011).

Adler and Kwon (2002) argued that the depreciation of social capital has not drawn the attention of scholars. Chetty and Agndal (2007) in their work encompassed the depreciation of social capital by introducing the liability role of social capital in the internationalisation of firms. The liability role occurs when the tie and network relationship decay over time. Additionally, Prashantham and

Dhanaraj (2010:991) studied 4 Indian software firms and concluded that “initial stocks of social capital may depreciate, ceasing to yield new growth opportunities beyond their utility life cycle”. They also argued that benefits of social capital to the international growth of the firm are associated with network learning, which is very important. Moreover, entrepreneurs should realise that initial social capital might become obsolete in the future (Prashantham and Dhanaraj, 2010).

As stated earlier the three roles of social capital in the internationalisation process of firms as described by Chetty and Agndal (2007) have been examined in very few studies. Equally, the three roles of social capital and network closure and structure have been also explored in limited studies (e.g. Agndal et al., 2008; Kontinen and Ojala, 2011a) so there is a fruitful area for future research where this study attempts to offer clear answers to this mechanism.

Network relationships and network closure and structure

There are many definitions regarding networks and network relationships. This study focuses on network relationships and not networks per se. Additionally, network closure and structure are two concepts that this study takes into consideration to examine the internationalisation process of high technology INVs. Uzzi (1999:482) explained that embedded ties may be different from professional ties and he described them as “the degree to which commercial transactions take place through social relations and networks of relations that use exchange protocols associated with social, non-commercial attachments to govern business dealings”. As mentioned earlier this study uses the firm as a unit of analysis. In other words, the focal firm and its network relationships and network closure and structure are examined. Table 1 presents the definitions of strong, weak, equally strong and weak ties, formal, informal and intermediary ties that were used in this study. Those are presented more analytically in chapter three.

Table 1 Definitions of network ties used in this study

Network tie	Definition – Author(s)
Strong ties	“Strong tie is defined as one which is close, and which is based on trust mutual respect, and commitment” – Kontinen and Ojala (2011a:136)
Weak ties	“Weak tie is a superficial tie not yet based on strong trust and where the parties do not know each other well and are not emotionally close to each other” – Soderqvist and Chetty (2009:9)
Equally strong and weak ties	“Equally strong and weak ties are if a relationship could really be equally strong as weak, or whether this represents a group of relationships that the lead entrepreneurs could not easily categorise according to strength” – Soderqvist and Chetty (2013:542)
Formal ties	A formal tie is described as the interfirm relationships, which are focused on business or market relationships – Coviello and Munro (1997)
Informal ties	Informal ties include family and friends relationships – Coviello (2006)
Intermediary ties	Intermediary ties encompass the lack of direct contact between sellers and buyers – Kontinen and Ojala (2011a)

Source: Author

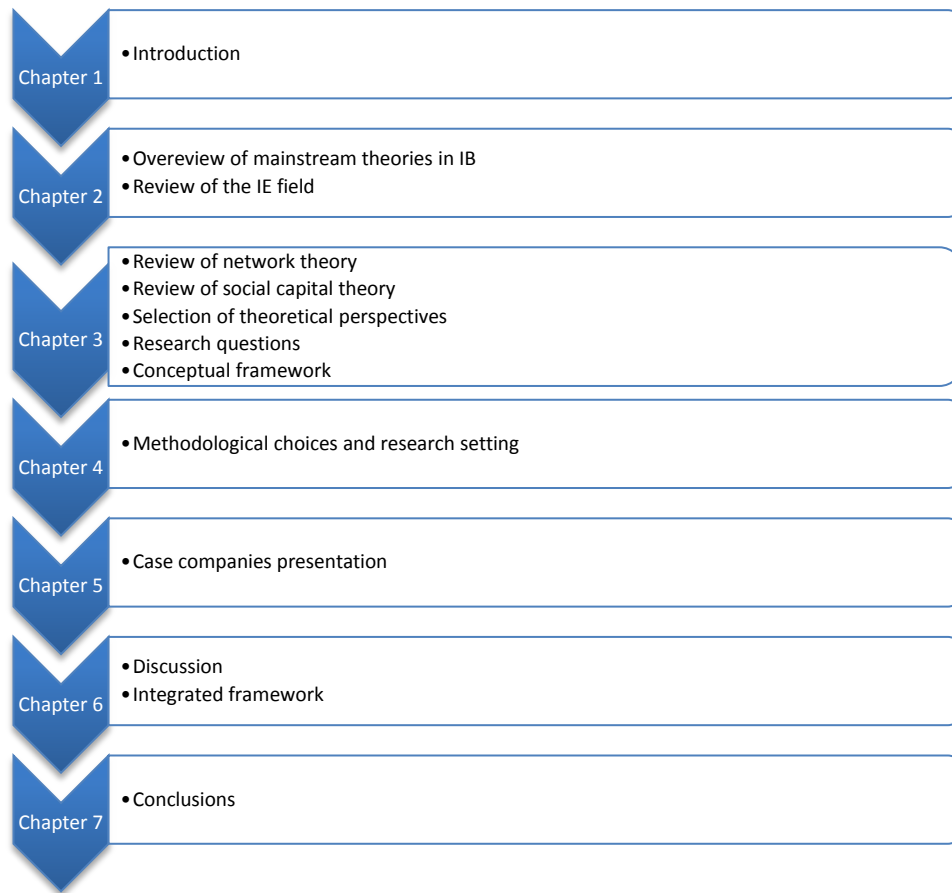
This study follows the work of Burt (1992) on structural holes. Structural holes are a rich source of social capital because they can offer a unique competitive advantage to actors who can bridge them. Structural holes or gaps are those amongst different actors of a network that are not directly connected (Burt, 1992). This research examines the role of structural holes and the three roles of social capital in the internationalisation process of high technology INVs. Previous research has shed light on the importance of strong and weak ties (e.g. Granovetter, 1973, 1985) and how those may impact the “quality” of information and the access to new knowledge and opportunities. Hansen (1999) argued that when knowledge is independent then weak ties are more advantageous; whereas when knowledge is more complex then strong ties become more advantageous. It is critical to understand which type of tie becomes more important in the internationalisation process and in relation to the three roles of social capital.

1.6 Structure of the thesis

The outline of this thesis is presented in Figure 1. Chapter 1 summarises the background of this study, the methodological choices, the definitions used in this study and the structure of this thesis. Chapter 2 presents an overview of the mainstream theories on International Business and reviews the International Entrepreneurship field in order to understand the evolution of the field and capture the different units of analysis. The crucial role of the digital economy is also presented. Additionally, the revisited Uppsala model and the INVs theory are compared in order to justify the choice of the INV approach in this study. Chapter 3 gives an insight and a thorough view on the network and social capital theory in relation to the three aspects of internationalisation process (i.e. speed, scope and entry mode) in order to show their importance in this study. Additionally, the three roles of social capital in internationalisation (i.e. efficacy, serendipity and liability) and the network closure and structure are presented. The research questions are formed based on the gaps in the existent literature. Finally, the conceptual framework is designed based on the theories presented in chapter 2 and chapter 3.

Chapter 4 presents the research methodology and research setting in order to justify the choices and the number of cases examined in this study. Additionally, the limitations of the study are discussed. Chapter 5 presents the empirical part of the thesis so the case firms and their internationalisation processes are presented in great detail. The different roles of social capital and the network closure and structure are presented in relation to the internationalisation of the firms. Chapter 6 discusses the findings of this study with the findings of the extant literature in order to answer the three research questions. Furthermore, the integrated framework is presented which is based on the test of the conceptual framework. Chapter 7 concludes this thesis and outlines the theoretical contributions on the International Business, International Entrepreneurship and Social Capital theories and managerial and policy implications are recommended. Finally suggestions for future research are proposed.

Figure 1 Structure of the thesis

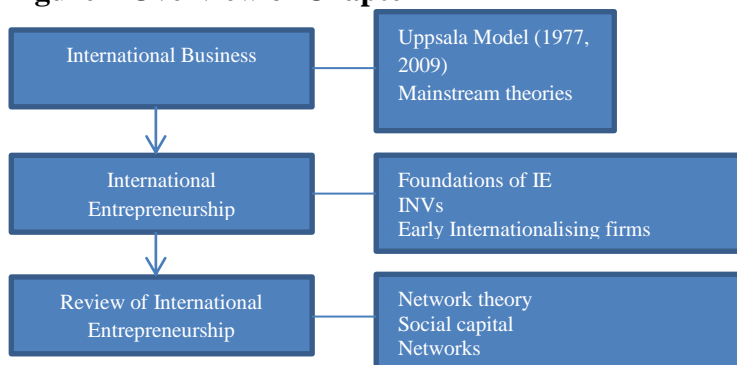


Chapter 2 Overview of IB Theories and review of IE field

2.1 Introduction

This study intends to identify the role of network relationships and social capital that help high technology International New Ventures (INVs) to internationalise. The literature enables the development of a theoretical framework that can be tested empirically. This synthesis of the literature will help us to understand what previous studies have shown on how network relationships and social capital influence SMEs internationalisation and what role they play in the process. For an overview of the chapter please see Figure 2.

Figure 2 Overview of Chapter 2



The aim of this research study is to answer the question: How is the internationalisation process of high technology INVs influenced by network relationships and social capital? Previous studies have identified the important role that networks play in enhancing the internationalisation process of SMEs (Coviello and Munro, 1997; Senik et al., 2011). Network relationships can provide SMEs with necessary knowledge and support in order to compete when they expand their operations in the international arena; these relationships can also help SMEs to collaborate with large players in the market (Etemad and Lee, 2003). Equally, network relationships can be a valuable source for knowledge and identification of

international opportunities, thus their role in motivating SMEs to enter foreign markets is paramount (Ellis, 2000; Sharma and Blomstermo, 2003).

A great number of scholars have highlighted that SMEs are the backbone of developed and emerging economies, however, the conducted research and empirical results on the internationalisation of SMEs coming from countries with different cultural backgrounds is limited (Coviello and Munro, 1995; Sim and Pandian, 2003; Bruton et al., 2008). The field of IE has emerged in 1994 as a new and promising research area, however, limited studies have examined IE in the context of more and less advanced economies. One of the most used definitions of IE is the following (Oviatt and McDougall, 1994) “international entrepreneurship is a combination of innovative, proactive, and risk-seeking behaviour that crosses national borders and is intended to create value in organisations”. Some scholars indicated that IE is a subset of IB and Entrepreneurship (Rialp et al., 2005; Coombs et al., 2009; Jones et al., 2011). In spite of this, a number of researchers have suggested that IE lacks of a robust theoretical framework (Young et al., 2003; Rialp et al., 2005; Keupp and Gassmann, 2009; Kiss et al., 2012).

Jones et al. (2011) identified a gap in the theory and more specifically in the examination of the comparative entrepreneurial internationalisation. This area emerged in 2001 and includes cross-border entrepreneurship.

The internationalisation of high technology INVs operating in developed economies is not a new phenomenon. SMEs from developed economies are more experienced in international markets (Jones et al., 2011) but advanced economies do not share the same characteristics. For example, cultural differences and different levels of infrastructure may influence the internationalisation process and the role that network relationships play (Baker et al., 2005).

Networks can assist SMEs’ scarcity of resources and enable early and fast internationalisation (Oviatt and McDougall, 1994; Coviello and Munro, 1995; Madsen and Servais, 1997). According to Tang (2011) firms should find these networks that can benefit their internationalisation. On the other hand, existing networks may act as a hindrance to enrich and broaden a firm’s network relationships. Thus, the firm may not be able to identify new business opportunities that lie outside its existing network (Gulati et al., 2000; Chetty and Campbell-Hunt,

2003). As stated previously, this study investigates the role of network relationships in support of the internationalisation process of high technology INVs instead of focusing on networks per se.

A question that emerges from the literature is: why start-ups internationalise their operations? Oviatt and McDougall (1999) and Etemad et al. (2001) proposed that home markets with limited demand, the short lifecycle of a product and the high costs of establishing a start-up, drive these companies to internationalise in order to become sustainable.

The phenomenon of early internationalising firms is becoming more important than ever because of the globalisation of the markets and the new technologies which allow the fast expansion of firms. A number of researchers found that there are many gaps in the existing theory of born global firms. For example, Rialp et al. (2005) reported the vagueness of the explanation of born global firms, and suggested what the factors are that push those firms to internationalise in early stages? In addition, there is not a clear definition of what a born global firm is (Rasmussen and Madsen, 2002; Kuivalainen, et al., 2007). Kudina et al. (2008) investigated British born global firms and verified that the main reason which pushes companies to internationalise in an early stage is the small domestic UK market.

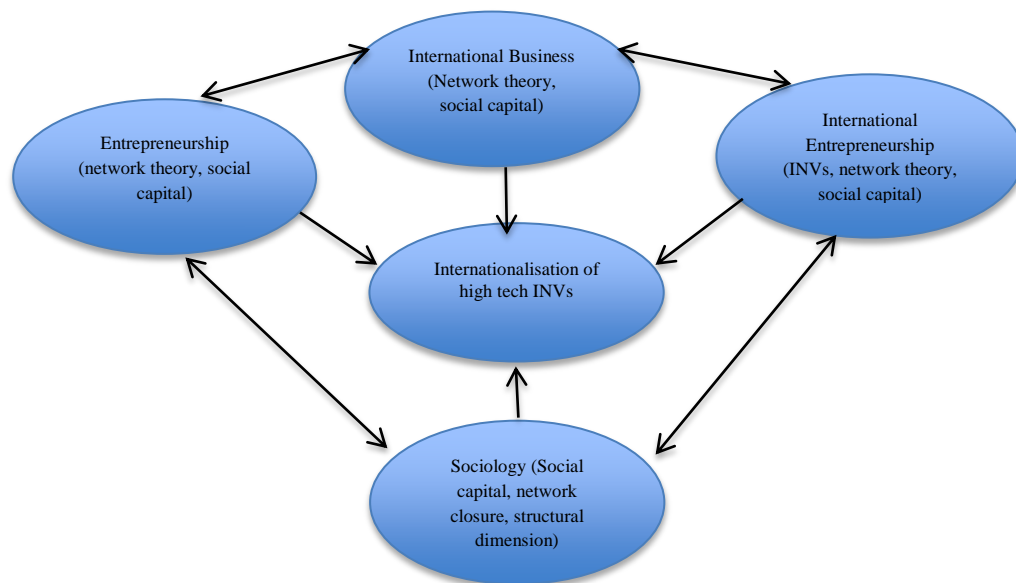
Szyliowicz and Galvin (2010:319) identified that the existing literature does not offer in-depth information on the dynamics and processes which formulate and advance the "...different regulatory, cultural, and cognitive environments in which entrepreneurial firms emerge...". The same authors reported that IE is focused on entrepreneurship and neglects the international dimension. Buckley (2002) indicated the problem of IB topics which should be appropriated by scholars from other disciplines such as the IE field. Zahra and Wright (2011) suggested that scholars should challenge the assumptions of entrepreneurship and there is a need to contribute with new theories and ideas.

The different roles of social capital (i.e. efficacy, serendipity and liability) in the internationalisation of firms introduced in 2007 by Chetty and Agndal but few studies (Agndal et al., 2008; Kontinen and Ojala, 2011a) have tested their mechanism in the internationalisation of firms. Those studies have however not answered all the questions which have arisen and only partly examined the structural dimension as

described by Burt (1992, 1994, 2000) and network closure (Granovetter, 1973; Coleman, 1988) in-depth; especially in the context of high technology INVs. Another issue related to entrepreneurship is the lack of knowledge on the various entrepreneurial activities and their link to the construction of theory and their testing (Young et al., 2003; Keupp and Gassmann, 2009; Zahra and Wright, 2011). This study attempts to address those issues and extend the theory of social capital in the IE field.

Dana and Wright (2009) proposed that empirical investigation is needed to advance the IE theory. Moreover, Coviello and McAuley (1999) suggested using the predominant theoretical frameworks in order to understand in-depth how small companies internationalise. Following their suggestions to help to narrow this gap the network theory and social capital theory, in the context of IE, will be used to develop our conceptual framework. Figure 3 illustrates the different theories and research areas, which are related to our study.

Figure 3 Key theories and research fields related to this study



Source: Author

The structure of this chapter is as follows. The second section begins with the presentation of key theories used in the IB field. The third section analyses the IE field and key theories used.

2.2 Overview of mainstream theories in International Business

This section introduces us to the mainstream theories that have been used to explain how and why firms internationalise. These theories will be briefly presented because they have limited explanatory power in this research's observed phenomena.

The evolution of International Business started in 1776 beginning with the classical trade theories when Smith developed the absolute advantage theory which was a theory focused on national level. Almost 40 years later, Ricardo created the theory of comparative advantage which was also focused on national level. Finally, more than 100 years later Heckscher and Ohlin (1933) tried to refine Ricardo's theory and introduced the factor proportion theory. According to Mtigwe (2006:8) the enduring contribution of the classical trade theories is their recognition that the search for a competitive advantage, whether immediate or delayed, is the primary motivator of most internationalisation activity anywhere in the world.

The firm level of analysis was analysed in the 1950s. FDI scholars and more specifically Hymer (1970) discussed about market imperfections. Hymer (1976) introduced the impact of market imperfections on foreign firms and how those can influence firms with limited knowledge regarding local markets. Limited knowledge concerning local market conditions can have an impact on successful or not operations in a foreign country. Vernon (1966) talked about the product life cycle which described the move of businesses into different markets in order to reduce the production cost and retain their cost advantage. FDI and the life cycle theory helped research to start focusing on the firm level and to explain how market imperfections can push companies to internationalise (Mtigwe, 2006).

Coase (1937) presented the importance of transaction cost in the internationalisation theory and Williamson (1981) verified the role of transaction cost in the internationalisation theory. The transaction cost theory assumes that different business activities, which are conducted by third (external) parties, or in other words, the market then these activities cost the company more and it is better if the company internalises many activities (Mtigwe, 2006). The transaction cost theory is part of the new institutional economics paradigm. Williamson (1985) suggested that this theory perceives the firm as a governance structure.

According to Malhotra et al. (2003:5) “the costs of conducting economic exchange in a market may exceed the costs of organising the exchange in a firm. Transaction costs are the costs of running the system and include *ex ante* costs, such as drafting and negotiating contracts, and *ex post* costs, such as monitoring and enforcing agreements”. The main rationale, which lies behind this theory, is that firms choose the most cost efficient transactions by following an appropriate governance structure. A major problem of transaction cost theory when research examines the context of early internationalising firms is its static nature. Early internationalising firms are dynamic, as well as their innovation (Malhotra et al., 2003).

Finally, according to Johanson and Mattsson (1987), there is a significant difference between the transaction cost approach and the network approach. They stated that the nature of the relationship is different. Production costs and exchange can be reduced in long-term relationships, according to the network approach. On the other hand, the transaction cost approach focuses on how opportunistic partners can be controlled. The network approach focuses on trust and social norms, whereas, the transaction cost approach focuses on opportunistic behaviour (Johanson and Mattsson, 1987; Achrol, 1997).

As regards the eclectic paradigm developed by Dunning (1997), it focuses on three advantages which should be found in a firm: (O) ownership specific advantages, (L) location specific advantages and (I) internalisation advantages. The OLI paradigm can be perceived as a multi-theoretical approach that includes the resource advantage theory (ownership advantage), international trade theory (location ownership), and transaction cost theory (internalisation advantage) (Malhotra et al., 2003). Prahalad and Hamel (1990) explained that Dunning’s OLI paradigm contributed to the International Business theory by highlighting the importance to build and keep competitive advantages for a firm to be successful in the international arena. This model can be mainly applied to MNEs. There is lack of empirical evidence that can confirm its adaptability to SMEs, and in our case, high technology SMEs.

2.2.1 Uppsala Model

The internationalisation theories are divided into different streams. First of all, the incremental theory or most known as the Uppsala model was developed by Johanson and Wiedersheim-Paul (1975) and Johanson and Vahlne (1977, 1990, 2006, 2009). This theory is based in the behavioral theory of the firm and Penrose's theory of the growth of the firm. The model perceives firms as dyadic systems where different actors have different interests in development (Johanson and Vahlne, 1990:12). The main difference between the eclectic or OLI paradigm is that in the Uppsala model managers do not have perfect access to information and they are risk-averse; whereas, the eclectic paradigm supports that managers take rational decisions and have perfect access to information.

The Uppsala model assumes that markets differ and more specifically in terms of industrial development, language, culture, political systems and business practices. Those differences were highlighted in Johanson and Wiedersheim-Paul's (1975) study and called psychic distance. The psychic distance mainly occurs between geographically distant countries.

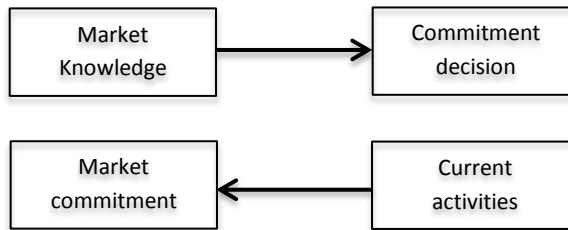
Psychic distance affects international market selection. Johanson and Wiedersheim-Paul (1975) argued that firms prefer to enter psychically close markets first and gradually enter markets with higher psychic distance. Internationalisation of the firms is strongly related to their learning capabilities. Experiential knowledge that derives from the engagement of firms in foreign markets diachronically minimises the problems which are associated with the psychic distance. Kogut and Singh (1988) showed that entry-mode decisions can be affected by cultural distance. Their study examined companies entering the US market. More specifically, the authors found that acquisitions were favoured over other entry mode choices such as joint ventures in markets when the cultural distance was low.

A number of studies have criticised the importance of psychic distance in the decision of entering a geographically close country first. For example, Bell (1995) showed that software firms from three countries (Finland, Norway and Ireland) were not affected by psychic distance. Other factors such as client following and industry trends were taken into consideration from the examined firms when they decided to enter foreign markets.

The Uppsala model demonstrates that an establishment chain drives a firm's engagement in a foreign market (Johanson and Wiedersheim-Paul, 1975; Johanson and Vahlne, 1977). The following phases are mainly observed when a firm starts from a low psychic distant country to a high psychic distant country: i) export activities which are not regular and sustainable; ii) independent agents used by the firm in order to export its products; iii) the firm decides to establish a foreign sales subsidiary; iv) and finally the firm decides to establish a foreign manufacturing plant. The first phase is related to psychically close foreign market entries where few resources are required. The later three stages are related to foreign market entries to psychically more distant countries and more resources are required. Moreover, Crick (1995) explored the relationship between government support programmes and the internationalisation of firms. He found that those programmes might fail to successfully identify and understand the real needs of firms which were highly likely to export and did not follow the traditional internationalisation patterns.

Additionally, the Uppsala model (Figure 4) describes internationalisation as a causal cycle (Johanson and Vahlne, 1990:11). The two state aspects, market knowledge and market commitments have an impact on decisions regarding commitment of resources and how activities are carried out. The two change aspects, commitment decisions and current activities influence market commitment and market knowledge. Knowledge is a very crucial aspect that feeds back firms from their initial involvement and impacts their decision to dedicate more resources to future activities. Market knowledge is very important because it drives the internationalisation process. This knowledge is experiential and can be acquired via personal experience. Johanson and Vahlne (1977) highlighted that resources can be committed to a market at a faster pace if the experiential knowledge of a market is high.

Figure 4 Uppsala Model as a causal cycle

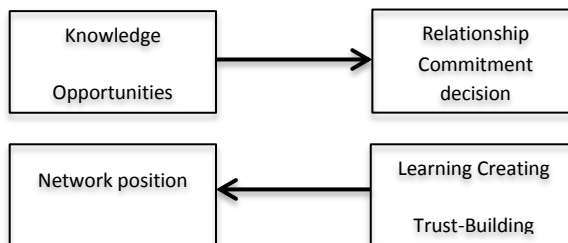


Source: Johanson and Vahlne (1977:26)

The original, 1977, Uppsala model has extended significantly and the importance of networks was included in the 2009 revised model. The revised Uppsala model moved from the liability of foreignness to the liability of outsidership (Johanson and Vahlne, 2009). It is very important to highlight that unique knowledge derives from network partners and interacting with them, which can create and help firms to discover business opportunities. Those opportunities are not available to firms that do not belong to the network, so they are outsiders (Johanson and Vahlne, 2009).

Johanson and Vahlne (2009) also answered their criticsers and clarified that the Uppsala model does not limit its scope to gradual and slow internationalisation. The same authors explained that international expansion can be rapid.

Figure 5 Revisited Uppsala Model



Source: Johanson and Vahlne (2009:1424)

Johanson and Vahlne (2009:1422) confirmed that their initial model did not contradict Oviatt and McDougall's (1994) model regarding the choice of modes. Johanson and Vahlne (2009:1422) stated that "...we have observed that companies gradually enter into what could be seen as more risky, but also potentially more beneficial and controllable, modes of operation. Increased knowledge and commitment make such risk taking desirable and possible. On the other hand,

entrepreneurs behind international new ventures are expected to optimise mode choice depending on constraints on resources and outside opportunities. We believe that this may be true...”.

De Clercq et al. (2012:147) in their review paper highlighted that the revisited Uppsala model does not anticipate early internationalisation and that firms have to first operate abroad to “learn from direct international experiences”. Bruneel et al.’s (2010) research is consistent with Johanson and Vahlne's revisited model that experiential knowledge becomes very important regarding choices when firms decide to be more engaged in foreign markets.

The Uppsala model of internationalisation remains one of the most powerful tools in the field of International Business as it predicts the behaviour of firms and more specifically when those internationalise.

2.3 Foundations of International Entrepreneurship

Oviatt and McDougall (1994) contributed to the academic world with their paper on International New Ventures. The offspring of this paper was the formation of the IE discipline. One of the most used definitions of International Entrepreneurship is the following (McDougall and Oviatt, 2000:903): “international entrepreneurship is a combination of innovative, proactive, and risk-seeking behaviour that crosses national borders and is intended to create value in organisations”.

Jones and Coviello (2005) emphasised on the important role of timing on internationalisation. They identified a gap on how companies react into different contexts which are related to macro influences such as political and economic changes. Moreover, Oviatt and McDougall (2005:540) came up with a new definition of IE “International entrepreneurship is the discovery, enactment, evaluation, and exploitation of opportunities – across national borders – to create future goods and services”.

Oviatt and McDougall (1994) found that a number of companies internationalise rapidly and share common characteristics with born globals, the so called INVs. They defined INVs as (Oviatt and McDougall, 1994:49) “a business

organisation that from inception, seeks to derive significant competitive advantage from the use of resources and the sale outputs in multiple countries”.

Entrepreneurs who manage effectively different resources from multiple countries and identify what markets demands are can drive their INVs to success (Oviatt and McDougall, 1994). According to the same authors INVs can be categorised into four types:

- i. Export/import start-ups
- ii. Multinational trader
- iii. Geographically focused start-ups
- iv. Global start-ups

Oviatt and McDougall (1994) characterised export and import start-ups and multinational traders as new international market makers. In particular, the export and import start-ups concentrate on limited countries where the entrepreneur is knowledgeable. The multinational traders operate in a number of countries and continually scan for new opportunities where “their networks are established or where they can quickly be set up” (Oviatt and McDougall, 1994:58). Geographically focused start-ups receive and develop their advantages by operating and offering their services well “the specialised needs” of a particular geographic region “through the use of foreign resources” (Oviatt and McDougall, 1994:58). The main difference between the geographically focused start-ups and the multinational trader is that the first ones focus on geographic regions where the needs are specialised. They also differ from the export/import start-up only in activities of inbound and outbound logistics. The geographically focused start-ups are able to coordinate various value chain activities, for example developments on technology, human resource and production. This type of firms may sustain their advantage by working close with an “exclusive network of alliances” in the area in which they operate (Oviatt and McDougall, 1994:58). The last type of INVs is the global start-up, which “is the most radical manifestation” of the INVs (Oviatt and McDougall, 1994:59). This type of INV develops its competitive advantage from various organisational activities where their locations are dispersing globally. Global start-ups proactively capture and identify opportunities regarding the acquisition of resources and “sell outputs” from multiple geographic locations, especially resources that offer great value (Oviatt and

McDougall, 1994:59). Global start-ups are the most challenging INVs because they demand and involve the necessary skills for a successful coordination at geographic activity level. According to Oviatt and McDougall (1994:60) global start-ups “appear to have the most sustainable competitive advantages due to a combination of historically unique, causally ambiguous, and socially complex inimitability with close network alliances in multiple countries”.

Undoubtedly, the importance of networks is highlighted in the four types of INVs. Networks cannot only sustain the competitive advantage of the INVs but also to assist them to their internationalisation process. However, some questions remain unanswered in the four types of INVs. For example Oviatt and McDougall (1994) did not explain if social capital that derives from networks and alliances can impact the internationalisation process of INVs.

This study examines INVs and will follow the definition as described above. The researcher believes that the categorisation of INVs will allow to better capture and explanation of the companies examined in this study, and will not restrict the study into the narrow definition of born globals. In addition, the study examines high technology INVs so the role of technological advancements, the internet and the digital economy will be taken into consideration as facilitating and driving forces for fast internationalisation. A large number of scholars highlighted the importance of technology and the internet in rapid internationalisation (e.g. Oviatt and McDougall, 1994; Singh and Kundu, 2002; Petersen and Welch, 2003; Yamin and Sinkovics, 2006; Reuber and Fischer, 2011; Fischer and Reuber, 2011).

McDougall et al. (1994) argued that existing theories would not offer any explanation to the INV phenomenon because those presume and support internationalisation as a gradual process. They also added that entrepreneurs of INVs have capabilities such as knowledge and networks that assist them to identify opportunities that are not seen by others.

Zahra (2005) argued that researchers identified that internationalisation is a constant move over time. He added that we could learn more from the observation of the INVs operations. The establishment of operations by companies needs time, so this may affect how age/time can be defined, especially when a researcher examines an INV (Zahra, 2005). INVs are characterised as companies with a number of

competitive advantages (e.g. unique knowledge, fast internationalisation, networks, etc.). Zahra (2005) extended this view and added that the organisational form of an INV can be perceived as a competitive advantage.

Acedo and Jones (2007) identified the relationship between internationalisation and market knowledge. More specifically, they found that the increase of market knowledge makes internationalisation for companies less precarious. Zahra and Wright (2011) found that current entrepreneurship literature focuses on two main research questions: how and where entrepreneurs identify new opportunities that enhance the firm's growth. The why question in IE remains under-examined.

IE is a subset of IB and entrepreneurship theories (e.g. Keupp and Gassmann, 2009). The foundation of IB was based on Adam Smith's work on *The Wealth of Nations*. The work of Adam Smith and his antecedents was focused on the nation level and it was before the 1950's that scholars started focusing on multinational corporations (Mtigwe, 2006). Thus, the research has been examined and tried to explain the international business phenomena as the micro-level. Ford and Leonidou (1991) and Ramaswamy et al. (1996) identified a problem in the theoretical frameworks used in the IB field. First of all, those frameworks lacked sophisticated variables, which could explain the idiosyncrasies and complexity of the observed phenomena. Many scholars understood the dynamic and important role of small entrepreneurial firms in national economies (Prefontaine and Bourgault, 2002; Mtigwe, 2006).

According to Mtigwe (2006) IE theory along with network theory are the best representatives of the recent development in IB theory. The IE theory cannot, however, be sufficiently explained by only one approach or context. Many scholars (e.g. Zahra and George, 2002) identified a main issue in IE theory. The main focus of the research is on small businesses and born global companies. Zahra and George (2002) also proposed that future research should not examine and research only small firms because theories might be excluded. The IE theory helped IB theory to move forward because the IE theory helped to focus on the entrepreneur level from the firm level. Finally, the IE theory has helped scholars to understand how international business takes place.

2.4 A review of the International Entrepreneurship field

The International Entrepreneurship field was reviewed in order to understand its evolution and to better comprehend the importance of networks and social capital in the internationalisation process of firms. Thirteen top ranked journals were identified based on the FT 45 ranking table and a cross comparison of Keupp and Gassmann review paper (2009) in *Journal of Management* and Xu and Meyer (2012) paper in *Journal of Management Studies*. The journals that were included in this review are as follows: *Academy of Management Journal*, *Academy of Management Review*, *Administrative Science Quarterly*, *Entrepreneurship Theory and Practice*, *Journal of Business Venturing*, *Journal of International Business Studies*, *Journal of Management Studies*, *Organization Science*, *Strategic Management Journal*, *Journal of World Business*, *Academy of Management Review*, *Journal of Management*, *Management Science*.

Oviatt and McDougall's 1994 paper was the starting point for identifying articles published in the field of International Entrepreneurship. Reviewing papers from 1994 onwards helped the researcher to better observe and compare the similarities and differences in theories and methodologies. Moreover, there is a consensus from many scholars (e.g. Rialp et al., 2005; Coviello, 2006; Keupp and Gassmann, 2009; Jones et al., 2011) that the seminal work of Oviatt and McDougall (1994) founded the IE field.

The selected papers were then examined in depth in order to understand the evolution of this newly emerged research area. The Social Sciences Citation Index and Web of Knowledge were used to search the most influential articles in IE field. The 23 most cited and influential studies were identified (as shown in Table 2). These articles are the root of the field. Then the Web of Knowledge was used to search for articles that cited the classic 23 studies and to screen these articles by the key word "International Entrepreneurship". To assure the validity and reliability of this study, all the articles are from chosen top ranked journals according the Social Sciences Citation Index Impact Index and FT journals ranking list. The chosen journals are both from the IB and entrepreneurship research areas due to the nature of IE field. Table 2 presents the 23 studies which had an impact on the IE field.

A number of articles in Table 2 are positioned in the IB field where their impact on shaping the IE field was very important. For example, Buckley (2002) a well-established IB scholar realised that applied concepts from other disciplines should be used in the IB field. Other scholars such as Rialp et al. (2005) and Keupp and Gassmann (2009) highlighted that IE is an intersection of IB and entrepreneurship research areas. In other words IE should not be examined without the inclusion of IB theories as the explanatory power that they offer can better describe and analyse the examined international phenomena. Some other scholars such as Peng (2003), Meyer and Peng (2005) and Peng et al. (2008) used the institutional theory to explain the internationalisation of firms. In other words traditional IB theories were used to interpret the results of their studies.

On the other hand, Oviatt and McDougall (1994, 2005), McDougall et al. (1994), Zahra et al. (2000) and Knight and Cavusgil (2004) used different theoretical lenses to explain the internationalisation of the firms. Theories such as entrepreneurship, resource based view, knowledge based view were used from the above articles. These authors examined firms that rapidly internationalise from their inception. The rapidly internationalised firms were named INVs or born globals. The definition of INVs and born globals is not similar, however, especially regarding their geographic focus and organisational structure. Zahra (2005), in particular, argued that INVs are different from other type of firms and born global firms because their organisational structure offers unique advantages in terms of internationalisation. From the above studies in the internationalisation process of firms three aspects were considered: the entry mode, the speed of internationalisation and the geographic scope. This study examines all three aspects in order to understand the internationalisation process of the firm. Buckley (2002) suggested that geography and location are areas that should be considered in the IB field. Additionally, Oviatt and McDougall (2005) proposed that speed of internationalisation is a promising research area for future research.

Table 2 Articles that influenced the IE field

Authors	Journal/ publication year	Times cited (Web of Knowledge)
Oviatt and McDougall	Journal of International Business Studies/ 1994	674
Zahra, Ireland and Hitt	Academy of Management Journal / 2000	584
Peng	Academy of Management Review/ 2003	509
Barkema, Bell and Pennings	Strategic Management Journal/ 1996	431
McDougall, Shane and Oviatt	Journal of Business Venturing/ 1994	339
Lu and Beamish	Strategic Management Journal/ 2001	336
Knight and Cavusgil	Journal of International Business Studies/ 2004	320
Rugman and Verbeke	Journal of International Business Studies/ 2004	318
Peng, Wang and Jiang	Journal of International Business Studies/ 2008	292
Wright, Filatotchev, Hoskisson and Peng	Journal of Management Studies/ 2005	267
Lavie	Academy of Management Review/ 2006	231
Leung, Bhagat, Buchan, Erez and Gibson	Journal of International Business Studies/ 2005	213
Oviatt and McDougall	Entrepreneurship Theory and Practice/ 2005	196
Buckley and Casson	Journal of International Business Studies/ 1998	195
Delios and Henisz	Academy of Management Journal/ 2000	188
Peng	Journal of Management/ 2001	173
Meyer and Peng	Journal of International Business Studies/ 2004	165
Meyer	Journal of International Business Studies/ 2004	164
Zahra	Journal of International Business Studies/ 2005	159
Shrader, Oviatt and McDougall	Academy of Management Journal/ 2000	140
Zahra, Neubaum and Huse	Journal of Management/ 2000	140
Buckley	Journal of International Business Studies/ 2002	128
Sambharya	Strategic Management Journal/ 1996	127

Source: Author

After the analysis of the 23 classic studies, 136 articles were collected through the screening process using the keyword “International Entrepreneurship”. The researcher compared industries, countries, methodologies, investment patterns, research topics, and sample size. To observe the theoretical development over time,

the classic 23 studies were tracked and their citation frequency each year, to examine if these studies have the same impact and influence over time. Moreover, the 136 articles were divided by taking into consideration different explanatory variables such as the country focus, the industry examined and publication journal. The 136 articles were then screened again to select the articles that used network theory, social capital theory or examined networks and 25 articles were identified. Finally, the future directions section of each article was examined to capture the new trends in the IE field. Those articles are presented in Table 3.

The articles were analysed systematically and examined the following aspects: if the article was empirical or conceptual, the theory used, the industry focus, the antecedents and processes, the description (i.e. sample size) and findings, and finally the future directions suggested by the author(s). This was necessary in order to evaluate their contributions to the field.

It is obvious from Table 3 that the IE articles included in this review are mainly published in IB journals and a smaller number in entrepreneurship journals. Eight papers were published in *International Business Review*, 5 in *Journal of World Business*, 4 in *Journal of International Business Studies*, 2 in *Journal of Small Business Management*, 1 in *Small Business Economics*, 1 in *Organisation Science*, 1 paper in *Entrepreneurship Theory and Practice*, 1 in *Journal of Business Venturing* and 1 in *Strategic Management Journal*. It is important to stress at this point that the methodology followed in this review has certain limitations because a large number of articles which used social capital and network theory were excluded. These 25 papers can, however, offer an overview of the trends in the IE field regarding the importance of social capital and network theory.

The researcher further examined the results of Table 3 by extracting which articles used an empirical environment and which ones a conceptual environment. The majority of the papers (23) were empirical; only one conceptual; and one a review paper. The selected papers analysed data in both qualitative and quantitative forms. Eight papers were qualitative and 15 quantitative. In terms of industry focus, 10 papers examined firms operating in the manufacturing sector, 9 on the high technology sector and 3 did not specify their industry focus.

The most influential article of the 25 papers, is the work of Coviello and Munro (1997) on the internationalisation of small software firms using network relationships. This article has been cited by many authors in the field of International Entrepreneurship according to a citation analysis on Web of Knowledge. The paper highlights the importance of network relationships regarding the entry mode choices, product development, and how the market activities can be diversified. Coviello and Munro (1997) combined the traditional internationalisation theories such as the Uppsala model (Johanson and Vahlne, 1977) and the network perspective. The authors developed a framework which includes three stages based on time. The first stage focuses on the first year of the firm where the firm mainly focuses on the domestic market in order to develop its products. The second stage encompasses years between one to three and predicts that firms will enter first psychically close countries using the network of their partners. The final stage focuses on the third year and onwards, and predicts that the firms rely on international markets mainly and develop complex relationships. Moreover, Coviello and Munro (1997) suggested that this type of firm is highly likely to change their product focus over time, to become active internationalisers and to set up sales or marketing offices abroad.

Most of the reviewed papers studied the importance of knowledge that derives from networks, the previous experience of entrepreneurs and how these can facilitate internationalisation (Riddle and Gillespie, 2003; Oviatt and McDougall, 2005; Prashantham and McNaughton, 2006; Loane et al., 2007; Presutti et al., 2007; Zuchella et al., 2007; Al-Laham and Souitaris, 2008; Tolstoy, 2009; Lindstrand et al., 2011; Yu et al., 2011; Lee et al., 2012). In particular Riddle and Gillespie (2003) argued that networks and more specific informal ties such as family members can facilitate firms to achieve successful exports. Oviatt and McDougall (2005) proposed that networks can impact the internationalisation speed of a firm. For example, better access to networks can enhance the internationalisation pace. Prashantham and McNaughton (2006) related the knowledge that derives from clusters which can help SMEs to build collaborations with MNEs. Additionally, social capital can minimise the possible barriers between SMEs and MNEs collaboration by offering the necessary knowledge (Prashantham and McNaughton, 2006). Loane et al. (2007) showed that firms with a big management team can internationalise faster based on

their superior knowledge of international markets and their access to networks. The importance of social capital is highlighted in their study because the knowledge of the management team derives from their networks, which is part of social capital. Moreover, Presutti et al. (2007) found that social capital is an important source of knowledge regarding the internationalisation of a firm. They specifically examined the network ties between start-up firms in the high technology sector and their customers and concluded that those relationships offer necessary knowledge for internationalisation.

Zucchella et al. (2007) stressed the importance of the entrepreneur's previous international experience. They found that higher the international experience of an entrepreneur, then internationalisation will be facilitated by the networks of the entrepreneur. Al-Laham and Souitaris (2008) argued that alliances play an important role in the internationalisation of firms because they help firms to identify opportunities in foreign markets. They suggested that firms should enter national alliances first, later enter international alliances as national ones can enhance the internationalisation of young firms (Al-Laham and Souitaris, 2008). Furthermore, Tolstoy (2009) argued that knowledge which derives from customer networks is more important to firms over knowledge deriving from supplier networks. Moreover, Lindstrand (2011) argued that social capital is a rich source of foreign market knowledge and suggested that social capital changes over time. Yu et al. (2011) found that foreign market sales were associated with marketing alliances and that the networks were close. For example, when the network cohesion was high, then marketing alliances assisted firms to their first international market sales by offering them the necessary knowledge. Finally, Lee et al. (2012) showed that the internationalisation of car manufacturers was strongly associated with their access to networks and other actors. Networks offer knowledge to MNEs that can impact and facilitate foreign market entries.

Another theme that emerged from Table 3 is the examination of network ties and the internationalisation of firms (Coviello, 2006; Ojala, 2009; Ellis, 2011; Kontinen and Ojala, 2011b,c). Coviello (2006) argued that network ties are important in the internationalisation of firms. She highlighted the dynamic aspect of networks, and showed that ties during internationalisation can be either strong or weak. Ojala

(2009) found that network relationships can have a minor role in the internationalisation of software firms. Firms strategically choose the first country to enter and the entry mode. He also examined the concept of formal and informal ties. Additionally, Ellis (2011) found that opportunities related to network ties led to better exchanges, especially when those were characterised by high psychic distance in terms of language, geography and culture. Kontinen and Ojala (2011b) acknowledged that the management team of family SMEs were able to better react to new opportunities in foreign markets. Additionally, they argued that international opportunities were identified from the establishment of new formal ties rather than existing informal ties. Equally, Kontinen and Ojala (2011c) argued that opportunity recognition in foreign markets especially for family SMEs, that do not have existing network ties, was related to weak ties, which were established in tradeshows. They also highlighted that trust plays an important role in the formation of new ties related to internationalisation.

Performance and the degree of internationalisation is another theme that was examined (Manolova et al., 2010; Musteen et al., 2010; Zhou et al., 2010). Manolova et al. (2010) showed the importance of inter-firm networks and the personal network of the entrepreneur in internationalisation. In particular, domestic inter-firm networks are important at the initial stages of internationalisation and their importance decreases over time. Musteen et al. (2010) highlighted that networks have a positive impact on the internationalisation and speed of the firms. Firms can internationalise faster with the use of networks. Zhou et al. (2010) showed that network dynamics and their reconfiguration had a positive impact on INVs in order to internationalise successfully in an early stage.

A final theme that was identified in the selected papers was the examination of institutions and networks (Hitt et al., 2004; Danis et al., 2010; De Clercq et al., 2010). Hitt et al. (2004) supported that firms select their partnerships and alliances based on the differences between institutional environments. They found that the intangible assets that a partner possesses influence the decision of a firm to start collaboration. In China the selection is based on intangible assets; whereas in Russia the selection is based on tangible assets. Danis et al. (2010) supported that networking of managers during internationalisation is more active especially at the

initial phases of institutional transition. On the other hand, managers spend less time on networking during internationalisation and focus mainly on market based strategies. Additionally, De Clercq et al. (2010) argued that social networking can assist entrepreneurial activities in emerging markets.

Table 3 Papers examining networks and social capital in the IE field

Authors	Journal	Conceptual/ Empirical	Theory	Industry	Antecedents	Processes	Description/ results	Future direction
Coviello & Munro (1997)	International Business Review	Empirical	Traditional internationalisation theories and network theory	Software	Incremental internationalising firms	Fast internationalisation assisted by network relationships	4 firms/ Companies internationalise fast based on the use of their network relationships	Examine different industries such as low technology firms
Etemad & Lee (2003)	Small Business Economics	Review paper	Knowledge and network	N/A	Knowledge and networks	Resources in knowledge network in the IE field	287 papers/ Most cited papers/ most cited books/ IE has been heavily relied upon IB and entrepreneurship fields	Future studies to examine the knowledge deriving from network in the IE context
Riddle & Gillespie (2003)	Small Business Economics	Empirical	Network theory (social capital - network)/ Knowledge (how to acquire information)	Clothing industry	Information and networks	Successful exporting	250 firms/ New ventures use informal ties such as friends and families to acquire knowledge and get access to suppliers	N/A
Hitt, Ahlstrom, Dacin, Levitas & Svobodina (2004)	Organisation Science	Empirical	Institutional	Various industries (but not specified)	Previous alliance experience	How does the selection of alliance is influenced from different institutions	121 firms (63 China, 58 Russia)/ Selection of partnerships is based on different institutional environments in which they have to operate	Future research should examine the findings in different countries and industries
Oviatt & McDougall (2005)	Entrepreneurship Theory & Practice	Conceptual	IE/ Network Theory/ Knowledge theory	N/A	Definition of IE in 1994	New definition of IE and speed of internationalisation	The conceptual model examines internationalisation speed that is influenced by various forces such as networks, competition and technology	Better articulation of IB and entrepreneurship theories

Authors	Journal	Conceptual/ Empirical	Theory	Industry	Antecedents	Processes	Description/ results	Future direction
Coviello (2006)	Journal of International Business Studies	Empirical	Network Theory/ INVs	Not specified	Networks	Networks dynamics in the IE field	3 case studies/ This study supports the results of Oviatt & McDougall's (1994) and highlights the importance of networks. Ties can be either social or economic, and either strong or weak	Multiple cases in different context. Compare networks using the four type firms as described by Johanson & Mattsson (1988)
Prashantham & McNaughton (2006)	International Business Review	Empirical	Social capital	ICT	Social capital	Knowledge outcomes and internationalisation	Clusters in Bangalore, Beijing, Scotland, Silicon Valley, Singapore and Stockholm/ Subsidiaries of MNEs are source of social capital. Social capital can minimise the barriers between the collaboration of SMEs and MNEs	How social capital can create better links between MNEs and born globals
Loane, Bell, McNaughton (2007)	Journal of World Business	Empirical	Knowledge and network	Computer software, biotechnology, manufacturing, media and animation	Previous internationalisation experience and management team (size)	Speed of internationalisation	143 & 53 firms in different phases. Firms with big management teams have better access to networks and their international performance is superior over firms with a sole entrepreneur	Examine the results of this study longitudinally. Understand the role of social capital on the growth of new ventures

Authors	Journal	Conceptual/ Empirical	Theory	Industry	Antecedents	Processes	Description/ results	Future direction
Presutti, Boari & Fratocchi (2007)	International Business Review	Empirical	Social capital	High Technology	Social capital	Knowledge (acquisition) for internationalisation	107 firms/ The research examined the association of the three dimensions of social capital (Nahapiet & Ghoshal, 1998). Network ties of high tech start-ups and their key customers are positively associated with knowledge acquisition	Longitudinal studies to examine the relationship of customers and start-up in a dynamic context
Zucchella, Palamara & Denicolai (2007)	Journal of World Business	Empirical	Network	Not specified	Entrepreneurial characteristics, business and location characteristics	Internationalisation precocity of SMEs	Internationalisation of firms is strongly related to the previous international experience of the entrepreneur	Comprehend the role of the industry that firms operate and examine the importance of social networks
Al-Laham & Souitaris (2008)	Journal of Business Venturing	Empirical	Knowledge and institutional	Biotechnology industry	Research ties and local embeddedness	International research alliances	It is beneficial for firms to enter first national alliances before entering international alliances. Local clusters can enhance the internationalisation of new ventures by assisting them to identify international opportunities	Future research should examine how network structure influences the internationalisation and vice versa

Authors	Journal	Conceptual/ Empirical	Theory	Industry	Antecedents	Processes	Description/ results	Future direction
Styles & Genua (2008)	Journal of World Business	Empirical	Network and Entrepreneurial Orientation	Software, Medical	Entrepreneurial Orientation, time and Internationalisation Process	Internationalisation decision	The network of academics that commercialise their ideas may help them to the internationalisation process	Future studies could examine longitudinally commercialisation and internationalisation process in the context of INVs
Ojala (2009)	International Business Review	Empirical	Network theory	Software	Network relationships	Internationalisation	8 firms/ Knowledge intensive firms prefer to choose first the entry mode and country without consulting their network relationships. In other words entry to psychic distant countries is related to strategic choices of the firm and not based on network relationships	Test the results of this study to different contexts like country and industry
Tolstoy (2009)	Journal of Small Business Management	Empirical	Hayek's assumption about knowledge in different individuals and entities - Network theory	Various industries	Dependence on supplier network knowledge - dependence on customer network knowledge - knowledge combination	knowledge creation - international entrepreneurial firms	188 firms/ customer network knowledge input is more important than supplier network knowledge input	Future research can investigate if types of external networks such as university networks and institutional create knowledge differently from the internal network of the firm

Authors	Journal	Conceptual/ Empirical	Theory	Industry	Antecedents	Processes	Description/ results	Future direction
Danis, Chiaburu & Lyles (2010)	Journal of International Business Studies	Empirical	Network theory - Institutional theory - strategic management	Various industries	Institutional theory	Transition economies and internationalisation of firms based there	135 SMEs in 1993, 200 SMEs in 2001/ Managerial networking is more active during the early stages of institutional transition and market based strategies are less important. At later stages managers spend more time in market based strategies and less time in networking	Understand the causal mechanisms of this study and examine the speed of transition
De Clercq, Danis & Dakhli (2010)	International Business Review	Empirical	Social network and institutional theories	N/A	Institutions	Business activity	Social networking such as participation to voluntary associations is related to higher entrepreneurial activities in emerging markets	Future research should examine the relationship between social networks and institutional factors and how those influence the nature of business activity
Manolova, Manev & Gyoshev (2010)	Journal of World Business	Empirical	Network model of internationalisation and INVs	Various industries	Networks	Degree of internationalisation	623 firms/ The study examined inter-firm networks and the personal network of the entrepreneur. Partnerships and collaboration with other firms especially at the early stages of new ventures help to the internationalisation	Future research should include more measures (e.g. number of countries operating, number of products) in order to holistically examine internationalisation. Studies should analyse those issues in different contexts

Authors	Journal	Conceptual/ Empirical	Theory	Industry	Antecedents	Processes	Description/ results	Future direction
Musteen, Martina & Datt (2010)	Journal of World Business	Empirical	Network theory and social capital	Manufacturing industry sector	Networks	Performance, speed	155 firms/ Networks facilitate internationalisation and may have an impact on the speed of internationalisation and its performance	Test the findings of this research in emerging economies
Zhou, Barnes & Lu (2010)	Journal of International Business Studies	Empirical	International entrepreneurial proclivity - network dynamics of reconfiguration	Various (most textile, garment, footwear or accessory manufacturers)	International entrepreneurial activity	Performance advantage of INVs	436 firms/ Capability upgrading is important for successful INVs coming from China in order to achieve early internationalisation	Early internationalisation of firms should be examined with the lens of dynamic capabilities
Ellis (2011)	Journal of International Business Studies	Empirical	Social network theory	Various	Social networks	Opportunity recognition in emerging economies	Entrepreneurial networks are important because they offer certain opportunities that limit tie-based interactions and may impact the internationalisation paths	Future research should examine the information that derives from the entrepreneurial networks
Kontinen & Ojala (2011b)	Journal of Small Business Management	Empirical	Network theory (network ties and opportunity recognition)	Manufacturing sector	Networks (business ties and family ties)	Opportunity recognition	8 firms/ international opportunities were recognised through new formal ties rather than existing ones. Trade exhibitions were the main source of international opportunity recognition	Firms with different ownership structures, other than family business, should be examined

Authors	Journal	Conceptual/ Empirical	Theory	Industry	Antecedents	Processes	Description/ results	Future direction
Kontinen & Ojala (2011c)	International Business Review	Empirical	Network theory (types of network ties)	Manufacturing sector	Networks (strength of ties, network activities)	Opportunity recognition	8 firms/Opportunity recognition is associated with weak ties especially when family SMEs do not have existing network ties. Trust plays an important role for creation of new ties and internationalisation	Future studies should examine the development of the network and the international opportunity recognition
Lindstrand, Melen & Nordman (2011)	International Business Review	Empirical	Social capital (three dimensions)	Biotechnology	Social capital	Foreign market knowledge	14 firms/ Foreign market knowledge and financial resources can be acquired from social capital. Existing social capital changes over the internationalisation process	Include time in studies in order to better understand the internationalisation of firms
Yu, Gilbert & Oviatt (2011)	Strategic Management Journal	Empirical	Network and knowledge	Biotechnology	Knowledge and alliances	Time of initial foreign sales	118 firms/ Marketing alliances are more possible to initiate initial international market sales when there is high network cohesion. Whereas high network cohesion minimises the role of technological alliances to initiate foreign market sales	The degree and scope of internationalisation should be examined diachronically in order to see how network alliances can influence them. Future studies should examine the informal social networks of a firm can impact the country choice

Authors	Journal	Conceptual/ Empirical	Theory	Industry	Antecedents	Processes	Description/ results	Future direction
Lee, Abosag & Kwak (2012)	International Business Review	Empirical	Network theory and knowledge	Car manufacturing	Networks knowledge	Internationalisation (first market entry)	3 firms/ The foreign market entry and how fast it can take place is a result of the networks of the MNE and other actors such as business and social political actors	Examine firms that do not operate in the car manufacturing sector

Keupp and Gassmann (2009) criticised the narrow focus of IE scholars on small firms. The researcher disagrees, however, with them because the internationalisation process of firms is observed more transparently to SMEs according to Ghauri (2004) and Chetty and Agndal (2007).

The themes that emerged from the review of the 25 papers were related to: networks knowledge and internationalisation, network ties and internationalisation, networks and international performance, and networks in different institutional environments. The researcher believes that the mechanism of network relationships and social capital in internationalisation are promising areas for research as limited studies have focused on those aspects.

Furthermore, Dana and Wright (2009) conducted a Delphi panel in order to draw useful conclusions about the future directions of the IE field. The majority of scholars who participated suggested that future research should focus on empirical investigation in order to identify patterns and causality. This study attempts to capture patterns and the reasons that lie behind the mechanism of social capital and network relationships.

2.4.1 Early internationalising firms

Having reviewed the IE field we know that scholars used their own terms to describe the early internationalising firms and that there are different labels for those firms, i.e. not only born global or INVs but also early internationalising firms, which is a term used by Rialp et al. (2005) and Svendsen (2009).

During time and in different studies, the early internationalising firms have been given different names (Andersson and Evangelista, 2006): born globals (Knight and Cavusgil, 1996; Madsen and Servais, 1997), global start-ups (e.g. McDougall et al., 1994), international new ventures (Oviatt and McDougall, 1994) and instant exporters (e.g. Coviello and McAuley, 1999).

The born global firms do not have a very clear definition. Many scholars provided an explanation of the characteristics included in companies. A number of scholars criticised and questioned if born globals are truly global, and suggested that a more appropriate name would be the born international (Hashai, 2011). Hashai

(2011) described these companies as firms that continuously expand their operations geographically. Moreover, he stated that born globals prefer to focus on a single expansion path, at a certain time period, and might change their expansion path over time.

The definition of born global firms includes companies with 25% of foreign sales out of the total turnover, and those that internationalise within 3 years of their inception (Knight and Cavusgil, 2004; Kuivalainen et al., 2007; Gabrielson et al., 2008). Gabrielson et al. (2008) gave their own definition of born global firms. According to them “born globals have products with global market potential”. These products, in addition with the entrepreneurial capability, help the early and rapid internationalisation. It is crucial for these firms to target international markets from their inception. Finally, born globals should not be a spin-off of a large company; and entrepreneurs should be prepared to take risks similar to those of a small start-up firm.

Kalinic and Forza (2012) categorised the two main views on the internationalisation of SMEs in the gradual approach and the born global companies. The first category includes the Uppsala model which is dynamic and is related to market knowledge and sales in geographically, culturally, economically close markets (Kalinic and Forza, 2012). They stated that according the Uppsala model (Kalinic and Forza, 2012:704) “...learning from experience is a key change mechanism in a firm’s internationalisation...”. On the other hand, the main literature on born global companies describes (Kalinic and Forza, 2012:704) that “...a major source of their international competitive advantage is based on knowledge intensity...”.

2.4.2 Resources and knowledge in the context of IE

When researching topics in IE the focus has predominately been on factors that enable early internationalising firms to exist. Resource-based theory (Barney, 1991) could be perceived as a key theory for entrepreneurship because resources play such a crucial role in the new venture and its success (Bhide, 2000). A number of scholars agreed that entrepreneurship is part of the resource-based framework

(Conner, 1991; Alvarez and Busenitz, 2001). Peteraf (1993) found that resource-based theory evolved as a predominant paradigm which is related to strategic management studies. The relationship between resource-based theory and entrepreneurship can be a base for further empirical work (Alvarez and Busenitz, 2001).

The entrepreneurial opportunities mainly exist because their value is differently viewed from entrepreneurs; and more specifically when these values are transformed from inputs to outputs (Shane and Venkataraman, 2000; Alvarez and Busenitz, 2001). In addition, the capability of entrepreneurs to identify new and different resources to generate entrepreneurial opportunities was examined by a number of scholars (Brush et al., 2001; Alvarez and Busenitz, 2001).

Alvarez and Busenitz (2001) proved that resource-based theory can be a very useful explanatory tool to examine and better understand the different and complex entrepreneurial phenomena. The researchers used the lens of this theory to understand in-depth entrepreneurial aspects.

Weerawardena et al. (2007) identified two streams about knowledge in the literature. The first stream examines the relationship of entrepreneur's prior international experience and the early internationalising firms (Oviatt and McDougall, 1997; Autio et al., 2000; Moen and Servais, 2002). Kuivalainen et al. (2010) confirmed this and added that international experience is an important factor for the internationalisation of a firm and its international performance. The other stream searches how entrepreneurs with previous business experience are more capable of absorbing knowledge and internationalising rapidly (Cohen and Levinthal, 1990; Oviatt and McDougall, 2005). Grant (1996) and Autio et al. (2000) explained that firms then give priority to technological learning have more possibilities to adjust and grow in new markets. Dib et al. (2010) found a relationship between born global companies and the technical knowledge of the entrepreneurs. Similarly, Hashai (2011:997) states "born global companies want to leverage their competitive advantage (technology knowledge) to supplement this technology knowledge".

According to Cavusgil and Knight (2009:54): "dynamic capabilities represent the firm's ability to integrate, reconfigure, gain, and release organisational resources. Dynamic capabilities operate to direct organisational resources, operational routines,

and competencies toward achieving superior performance in the markets where the firm chooses to operate”. The same authors added that born global firms’ advanced tacit knowledge helps them identify opportunities in global scale.

De Clercq et al. (2012) found that early internationalisation cannot be a random phenomenon and that it is related to the acquisition of knowledge. In addition, the creation of knowledge and its use are paramount in the high-technology sector (Kuivalainen et al., 2004; Kuivalainen et al., 2010).

Autio et al. (2000:547) introduced the concept of learning advantages of newness: “as firms get older, they develop learning impediments that hamper their ability to successfully grow in new environments and that the relative flexibility of newer firms allows them to rapidly learn the competencies necessary to pursue continued growth in foreign markets”.

There is a demarcation between the resource-based view and the knowledge based view. The resource based view theory can be perceived as static and cannot fully explain the early internationalisation of companies (Prashantham, 2005; Kuivalainen et al., 2010). On the other hand, knowledge-based view is more dynamic as the capabilities change and progress over time (Augier and Teece, 2007; Kuivaleinen et al., 2010). In addition, the internationalisation patterns and strategies of technology extensive SMEs are facilitated by their intensity level of knowledge (Autio et al., 2000; Jones and Coviello, 2005; Kuivaleinen et al., 2010). Firms should innovate and create their own technology capabilities and produce exclusive products in order to attain a competitive advantage (Zhou and Li, 2010).

The main focus has been on resources and knowledge but we cannot stop there, so more is needed. This thesis examines the evolution of social capital over time and attempts to understand the mechanism of network structure and closure and social capital in the early and later internationalisation of high technology INVs. We will focus on the digital economy which has received limited examination in the IE field. This thesis tries to fill these gaps and progress IE further.

2.4.3 Digital economy

In this study high technology INVs are examined. Therefore, it is critical to comprehend the importance of new technologies and the internet in the internationalisation process of high tech firms. Additionally, the virtual environment that those firms and especially software firms operate in, may impact their internationalisation process and choices. The importance of information and communication technologies was stressed by a number of scholars (e.g. McDougall et al., 1994). These technologies were identified as enablers of international entrepreneurship. Reuber and Fischer (2011) identified a gap in the IE field. They stated that a great number of businesses use new technologies and especially the internet to pursue and capture international opportunities. The IE literature, however, has only partly focused on this phenomenon. This study examines high technology INVs, for this reason it is necessary to include in the literature review how new technologies enhance the internationalisation of these firms. Previous reviews on IE (e.g. Coviello and Jones, 2004; Rialp et al., 2005; Keupp and Gassmann, 2009, Jones et al., 2011) have stressed that technology based firms internationalise earlier and faster compared to traditional firms, but they did not find research examining internationalisation that was internet enabled.

Young and small firms lack of resources. Technological advancements such as speed of communications (i.e. internet) and the reduction of transaction costs made internationalisation easier and possible for these firms (Oviatt and McDougall, 2005; Gassmann and Keupp, 2007; Mathews and Zander, 2007).

A number of firm-level factors which are related to IE were highlighted for offline contexts, these include: learning (e.g. Sapienza et al., 2004), business networks (e.g. Coviello, 2006; Prashantham and Dhanaraj, 2010), management team dynamics and commitment to international expansion (e.g. Reuber and Fischer, 2002). Reuber and Fischer (2011) stated that these factors can also be significant in online contexts.

Reuber and Fischer (2011) categorised the importance of internet enabled markets and how those can have a positive impact on firms into three aspects: the online reputation, the online technological capabilities, and the online brand

communities. Each aspect will be briefly developed and explained in order to highlight why they play an important role.

2.4.3.1 Online reputation and internationalisation

The online reputation in internet enabled markets is crucial as the competition online is high. At an early stage of a firm online reputation is important because future buyers are influenced by and imitate previous buyers (Reuber and Fischer, 2011). Roberts and Dowling (2002) added that favorable reputations are beneficial for firms in terms of attractiveness and cost. Scarcity of resources can be overcome with the use of internet because this medium minimises both cost and search (e.g. Arenius et al., 2005; Moen et al., 2008; Chandra and Coviello, 2010; Reuber and Fischer, 2011), and allows firms to develop the online reputations they require to survive in the international arena.

Moen et al. (2003) and Dewally and Ederington (2006) found that associations with important and prestigious people and organisations, certifications and references are very important mechanisms, which enable firms to build their reputation and especially these that operate online.

Another important factor that has an impact on online firms is the country of origin. Fischer and Reuber (2011) found that 55% of their sample software companies that were selling online their products did not disclose their country of origin. The country of origin can generate positive or negative stereotypes (e.g. Gurhan-Canli and Maheswaran, 2000) and influence the appreciation of a firm and its products (e.g. Han, 1989). Hence, a firm that is perceived as global can generate positive (e.g. prestige and quality of products) rather than negative stereotypes (Reuber and Fischer, 2011).

2.4.3.2 Online technological capabilities and internationalisation

International opportunities can be better discovered and exploited when firms develop online technological capabilities, the role of top management is also important regarding the adoption of new technologies as well as the valuation of online initiatives (Reuber and Fischer, 2011).

Doing business online is very challenging for firms because there are cultural differences concerning behaviours and attitudes (Lynch and Beck, 2001). Firms that can adapt their daily operations with new technologies (e.g. Loane et al., 2004) and adapt their marketing activities (e.g. Moen et al., 2003; Sinkovics and Penz, 2006) can enhance their sales in international markets. Additionally, Zahra and George (2002) stressed the importance of capabilities for adopting new technologies (information technology).

2.4.3.3 Online brand communities and internationalisation

It was stressed in the IE field that internationalisation can be facilitated when social networks are better connected with their stakeholders (e.g. McDougall et al., 1994; Coviello and Munro, 1997; Coviello, 2006). The role of internet was very important in intermediating and empowering consumers (Andersen, 2005; Chandra and Coviello, 2010).

Reuber and Fischer (2011) highlighted that online brand communities assist companies to identify, exploit and assess opportunities in foreign markets. These communities offer valuable knowledge and information about buyers. Finally, online communities help firms to access audiences in distant markets by minimising at the same time the risk of (Reuber and Fischer, 2011:661) “becoming too isolated from their online foreign markets”.

2.5 Key internationalisation theories in this study

Social capital is an aspect and theory that has been used in the INVs literature. Oviatt and McDougall (1994) argued that INVs have a competitive advantage due to their governance structure and their ability to recognise the importance of network structure in the internationalisation. Larson (1992) stated that relationships in a network may yield high personal and economic value as the members generally share rents and the relationships are not based on opportunism. In the context of INVs where firms operate in multiple foreign markets the founders prefer to recruit people with international work experience. Collaboration and

partnerships overshadow opportunism as the reputation of businesses and individuals are at stake and this may have an impact on economic rents (Arenius, 2002).

Previous research has found the international experience of managers to be important. This experience was associated with network creation during studying or working in foreign countries and the development of an international mindset that could build intellectual social capital (McDougall et al., 1994; Reuber and Fischer, 1997; Crick and Jones, 2000). Additionally, networks can influence the choice of market and entry mode. In particular, Coviello and Munro (1995) argued that internationalisation heavily relied on membership in international networks and that the initial trigger for entry mode and foreign market choice was associated with principal network partners.

In the initial Uppsala model (Johanson and Vahlne, 1977) the dimension of social capital and networks was not included and discussed because the model focused on learning and risk avoidance. However, in the revisited Uppsala model (Johanson and Vahlne, 2009) the role of networks and social capital was included and the model moved from the liability of foreignness to the liability of outsidership. In other words, actors that are not members of a network could face hindrances in internationalisation if they were not located inside networks.

Table 4 compares the differences between the INVs theory and the revisited Uppsala model. From the literature we know that the INV approach is more relevant to rapidly changing environments. In other words firms are more proactive in the INVs approach, whereas in the initial Uppsala model they are more reactive. There are, however, similarities between the revisited Uppsala model and the INVs approach. Networks and social capital are necessary for the internationalisation process of the firms. INV theory argues that learning types are based on the four types of firms. Networks are sources of knowledge. Equally, the revisited Uppsala model highlighted the importance of network relationships because those offer valuable knowledge to firms. Both the initial and the revisited Uppsala model support that the speed of internationalisation can be slow or fast. The INV approach did not clearly define speed of internationalisation. Additionally, the main prediction of the revisited Uppsala model consists of the ability of firms to overcome the obstacle of the liability of foreignness with the assistance of networks. On the other

hand the INVs approach predicts that the characteristics of the entrepreneur and the unique governance structures of those firms help the speed of internationalisation.

Table 4 Differences between INVs and revisited Uppsala Model

Different aspects	Revisited Uppsala Model 2009	INVs
Definition of internationalisation	Internationalisation can be influenced from networks. "Internationalisation is seen as the outcome of firm actions to strengthen network positions by what is traditionally referred to as improving or protecting their position in the market".	Internationalisation is influenced by a number of factors such as: networks, tacit and unique knowledge, governance structure, etc. The definition of INVs is the following: "INV is a business organization that, from inception, seeks to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries".
Key concepts	The new model was adapted to incorporate networks. The model focuses on networks rather than firms, networks help firms to enter psychic distant markets. The authors discuss about liability of networks (outsidership or insidership) rather than liability of foreignness. Finally, the model perceives business networks as a market structure.	The authors tried to fit INVs within the theory of the MNE. Their framework describes sustainable INVs. The authors emphasise that INVs control assets (e.g. unique knowledge) rather than owning them – these firms face the scarcity of resources problem. The framework categorises INVs in four different types according to the number of countries involved and the number of activities coordinated (Export/Import start-up, multinational trader, geographically focused start-up and global start-up).
Learning types	Firms learn from networks. Opportunities recognition is part of the knowledge in the 2009 model. Entrepreneurs' networks and previous knowledge are related to the speed of internationalization. Knowledge is also developed in relationships. Experiential learning is crucial for a firm's internationalisation.	Entrepreneurs can learn from social interaction. Network formation is also very important for acquiring knowledge. Technology is also a facilitator and source of information. Depending on the type of INV learning types may differ: new international market makers (knowledge of inbound and outbound logistics), geographically focused start-up (involves tacit knowledge), global start-ups (learn from networks).
Internationalisation speed	The authors said that the 1977 Uppsala model did not mention speed. Although the model describes an incremental internationalisation. They argue that firms can learn quickly and enter markets quickly, this does not come to contrast to their model, because the model never dealt with speed per se.	There is not a clear definition about the speed of internationalisation. However, the authors describe that INVs internationalise faster than traditional companies. Internationalisation may occur from inception.
Key predictions	The key prediction is that liability of foreignness can be overcome with the use of networks. Networks can have an impact on the speed of internationalisation but the model does not focus on speed. Insidership helps firms to easier enter foreign markets. On the other hand, outsidership works as an impediment. Finally, business networks have a considerable impact on choices related to: geographical market and entry mode.	INVs focus on international markets from inception. Entrepreneurial characteristics and governance structures help for speedier internationalisation. Technological advancement had an impact on these firms and their speed of internationalisation. INVs rely on different types of resources from MNEs in order to overcome problems in foreign markets.
Empirical support	Conceptual paper. However, the authors based their model on the 1977 model. The original model was based on 4 Swedish manufacturing MNEs.	The paper is conceptual and empirical. The authors used empirical evidence from previous studies. The companies examined operate in the high tech sector.
Unit of analysis	Firm & Network	Entrepreneur
Theories based on	Network model of internationalisation Behavioural theory	Entrepreneurship Strategic Entrepreneurship RBV
Premises	Non equilibrium in markets Uncertainty avoidance Depend on sources controlled by the network	Non equilibrium in markets Opportunity seeking entrepreneurs Various resources possessed by entrepreneurs

Source: Author

This study examines high technology SMEs that operate in multiple markets. Moreover, the environment that those firms operate in is characterised as high velocity as described by Bourgeois and Eisenhardt (1988) who described a rapidly changing environment as a fast and interrupted change in technology, competition, demand and regulation. In the INV approach, entrepreneurs are more risk taking, innovative and proactive. Whereas as, in the Uppsala model managers are more risk averse. For these reasons, the researcher decided that the INVs approach is more appropriate for this study.

2.6 Summary

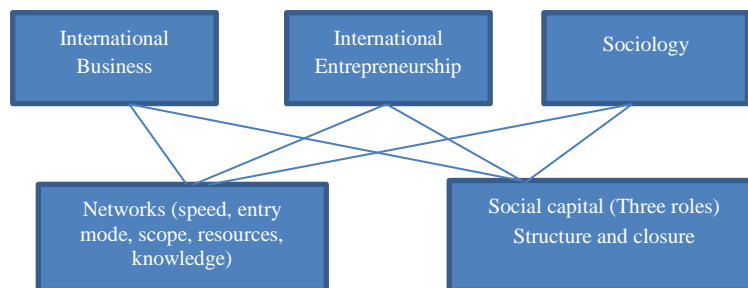
This chapter reviewed the theoretical foundations of IB before moving more narrowly to IE. The role of new technologies has been shown to be paramount to the internationalisation of young ventures that face the problem of scarcity of resources. Traditional IB theories such as the initial Uppsala model (Johanson and Vahlne, 1977) examined the internationalisation process of firms by assuming that managers are risk averse; whereas in the INV approach Oviatt and McDougall (1994) argued that those firms owners are risk takers and actively seek to identify new opportunities. Another difference between the two theories is the unit of analysis, where the Uppsala model focused on the firm and environment, the INV approach focused on the entrepreneur. The following chapter presents and reviews the network and social capital theories in order to justify the theoretical choices of this study. The following chapter is a specific theoretical chapter that narrows the focus even further. This is achieved by answering the questions devised in this thesis through the specific lens of two theories, namely network and social capital. The following chapter addresses this, while justifying the need to study through network and social capital.

Chapter 3 Theoretical Underpinnings: Network and Social Capital Theories

3.1 Introduction

This chapter reviews the network and social capital theories. The theoretical choices are also justified and the research questions are presented. Sections 3.2 and 3.3 explain the role of network relationships and social capital in existing literature. Section 3.4 refers to the existing gaps in the literature that form the research questions of this study. Section 3.5 describes the relationship between the different concepts presented in the conceptual framework. The last section presents the concluded points and implications. For an overview of the chapter please see Figure 6.

Figure 6 Overview of Chapter 3



3.2 Network theory and internationalisation process

Johanson and Mattsson (1988) introduced network theory to the international context, based on social exchange theory and resource dependence theory. Network theory argues that the internationalisation of firms is a phenomenon related to networks. The authors observed that firms used diverse networks to ease their activities in foreign markets activities. The network model of internationalisation describes that firms develop relationships with customers and suppliers. In other words, internationalisation is associated with the development of network ties with companies in foreign markets that are members of a network. The role of ties was

highlighted in Johanson and Vahlne's (1990) work; it was argued that ties between firms in various markets actually serve as bridges in order to facilitate foreign market entries. Johanson and Mattsson (1988) proposed that a firm can balance its scarcity of resources by two ways: i) advancing its placement in a current network; ii) developing new ties. Firms that belong to networks are motivated from mutual benefits to prosper and keep network ties with each other (Johanson and Mattsson, 1988; Johanson and Vahlne, 2003). The structure of network ties is presented later in this chapter in section 3.3.4 where their relevance to this study is discussed. The network model of internationalisation argues that it is very important for firms during the internationalisation process to acquire resources coming from external resources, which are exchanged with various actors in the network (Johanson and Mattsson, 1988).

In the network model of internationalisation (Johanson and Mattsson, 1988) the importance of social capital was highlighted. Based on the four types of international firms social capital was examined. The first type of firm is the 'early starter' where relationships with firms in foreign markets are not important and limited in number. The 'early starter' lacks international social capital. The internationalisation process is not assisted by market relationships and it is crucial for the early starter to develop international social capital to become a 'lonely international'. Lonely international firms are highly internationalised, whereas, the market they operate in is less international. This type of firms internationalise before their competitors so their main advantage is that they are capable of developing international networks and their position in the market (Johanson and Mattsson, 1988:254). Lonely international firms have rich social capital. Those firms are experienced players in the international market and have relationships in foreign markets. Additionally, this type of firm can cope with different cultures and institutional environments. When markets internationalise at the same time, then the firm becomes an international player like other firms. The third type of international firm is the 'late starter' where there is absence of social capital, however, markets are rich in social capital and the firm can exploit this. The final type of international firm is the 'international among others' where the firm has rich social capital and is connected to various international networks. Those networks offer opportunities for

acquiring external resources. Furthermore, this type of international firms rapidly sets up sales subsidiaries because it must synchronise multi-location activities.

Hohenthal et al. (2014) found that the network theory of internationalisation has been adopted by many studies; however, the development of networks over time has been limitedly examined. The same authors supported that Coviello and Munro (1997) and Coviello (2006) tried to examine networks by conceptualising their development diachronically. This study attempts to understand how network relationships and social capital evolve over time.

In order to examine the internationalisation process of high technology INVs this study considers three criteria: 1) the time that the first foreign sale or business development took place. This is calculated by subtracting the year of inception from the year where the company initiated its first business activities in a foreign market; the most common definition of an INV is within six years of its establishment (Oviatt and McDougall, 1997); 2) The number of countries where the firm operates, which is defined by the geographical scope of the firm's activities in foreign markets (Oviatt and McDougall, 2005; Coviello, 2006); 3) The entry mode that firm chooses to enter a new foreign market.

Previous studies found that young firms prefer to choose low commitment entry modes and as they become more mature and experienced choose higher commitment entry modes. SMEs, as mentioned earlier, lack sufficient resources to enable them to internationalise rapidly. As regards this weakness, SMEs are pushed to identify networks that have a positive impact on internationalisation (Coviello and Munro, 1999; Johanson and Vahlne, 2003; Mort and Weerawardena, 2006). It was highlighted in previous studies, that networks influence the internationalisation patterns of a company concerning economic transactions with customers (Bell, 1995; Coviello and Munro, 1999). Moreover, networks can help SMEs with scarce resources to support their international business activities and expansion (Oviatt and McDougall, 2005; Coviello, 2006). Hamilton (1991) found that business networks in, the form of social capital based, on interconnected relationships (i.e. Quanzi in China), offer Asian firms a competitive advantage because transaction costs can be minimised, as well as, the costs related to the search for buyers.

There is a difference between business networks and social networks. Social networks encompass the links of an entrepreneur with other people at the society level (Shirokova and McDougall-Covin, 2012). The definition of social networks according to Gilmore and Carson (1999) refers to a “collection of individuals who may not be known to each other and who, in some way contribute something to the entrepreneur, either passively, reactively or proactively whether specifically elicited or not”. Business networks refer to the interfirm links (Ellis, 2011). The liability of foreignness can be overcome with the use of social networks when a born global decides to enter a foreign market (Zaheer, 1995). In addition, social networks can offer valuable knowledge on foreign markets opportunities (Zaheer, 1995).

Previous studies have associated social networks with international and national opportunity recognition (Aldrich, 1999), mobilization of resources (Shane and Stuart, 2002) and access to tacit knowledge (Stuart and Sorenson, 2003). Social networks in emerging economies facilitate business activity and can have an impact on firms’ performance and strategic choices (Peng and Luo, 2000; Batjargal and Liu, 2004). Network ties may help to access to the necessary resources that assist firms to grow and survive in both national and international markets (Yan and Manolova, 1998; Peng and Luo, 2000). Kiss and Danis (2010) stressed the gap in literature concerning the types of network ties, which are more or less important in distant institutional environments (i.e. cultural, language differences, etc.). The importance of networks on the internationalisation of firms was stressed by Johanson and Vahlne (2009:1411) who argued that “markets are networks of relationships in which firms are linked to each other in various, complex and, to a considerable extent, invisible patterns”. Hence ‘insidership’ in relevant networks is necessary for successful internationalisation.

In order to examine the role of networks in the three aspects of internationalisation process (i.e. speed, geographic scope and entry mode) the relevant literature was reviewed. Moreover, based on the review in Chapter 2, the roles of knowledge and resources that derive from networks and their facilitating role in different institutional environments, were highlighted and, therefore, included in this review.

3.2.1 Networks and speed of internationalisation

The most common definition of speed of internationalisation, developed in empirical studies, refers to the difference between the firm's inception year and the year of the first international sale (Oviatt and McDougall, 1994; Reuber and Fischer, 1997). For the purpose of this study this definition will be used because the internationalisation process of high technology SMEs will be examined .

At theoretical level, speed of internationalisation is defined by the first market entry in a foreign country or the first foreign outputs that are influenced by enabling forces like technology advancements, motivating forces such as competition, mediating forces like the entrepreneur's characteristics and moderating forces such as knowledge and networks (Oviatt and McDougall, 2005).

Being a member of a social network can accelerate internationalisation because the exchange of knowledge and trust are perceived as a competitive advantage (Coviello and Munro, 1995). On the other hand, Ghannad and Andersson (2012) concluded that networks were not so crucial in the internationalisation of Swedish born globals.

Vasilchenko and Morrish (2011) in their study on ICT SMEs proposed that social networks are paramount for forming business networks and internationalising their operations. In particular the rapidly changing environment pushes companies to internationalise in an early stage in order to exploit opportunities in foreign markets (Sapienza et al., 2006; Freeman et al., 2010). Undoubtedly, speed of commercialising new ideas is important in the ICT sector (Vasilchenko and Morrish, 2011).

Many studies analysed the relationship between the born global firm's early and rapid internationalisation with entrepreneur's networks (Harris & Wheeler, 2005; Dib et al., 2010; Dimitratos et al., 2010). Harris and Wheeler (2005) found that internationalisation could be better founded if strong interpersonal relationships are used. Sharma and Blostermo (2003) suggested that weak ties can provide the firm with the possibility to act autonomously, and also have a positive impact on their adaptability to foreign markets. Additionally, rapid internationalisation can be influenced by how easy or not it is to access international social networks (Oviatt and McDougall, 2005; Han, 2006). Moreover, the strategic plans of firms to internationalise their operations can be influenced by the foreign market knowledge;

this knowledge may have an impact on the speed of internationalisation (Moen and Servais, 2002; Sharma and Blostermo, 2003; Dib et al., 2010).

This study examines high technology INVs, these companies possess intangible assets which are unique and assist them to internationalise faster. These assets include: unique technical knowledge on products (Rialp et al., 2005), and knowledge of markets (Bell et al., 2011). The product knowledge mainly derives from the human capital of the firm, whereas the knowledge of markets is associated with the firm's links to networks. Sharma and Blomsterno (2003) suggested that a company being early internationaliser is positively related to networks and various forms of partnerships.

3.2.2 Networks and entry mode

The market selection and entry mode choice are very crucial and depend on the internationalisation orientation of the management team (Johanson and Vahlne, 1977; Moen et al., 2004). External independent actors who are not members of the formal network of the focal company can help to enter new markets where prior knowledge is absent (Awuah et al., 2011). Previous studies have connected the firms' network links with the foreign market choice and entry mode (e.g. Moen et al., 2004).

Chen (2003) found that networks can determine the choice of FDI location. In addition to the previous point, Chetty and Agndal (2007) supported the relationship between mode of internationalisation and network links. Finally, companies acquire knowledge when it comes to exploiting foreign markets opportunities from their personal contacts instead of using market intelligent research (Ellis, 2000).

INVs in the high technology sector develop complex relationships with their business partners. These firms use more complex and multiple entry modes, when they decide to enter new foreign markets, such as marketing with partners, distributors and joint-ventures. In later stages of born globals internationalisation process, the firm may open regional offices and subsidiaries in the foreign markets (Coviello and Munro, 1997). The entry mode of high technology companies does not follow the traditional Uppsala model of internationalisation. McDougall et al. (1994)

and Coviello and Munro (1997) supported that networks can assist the fast international growth of high technology firms.

Awuah et al. (2011) found that internationalisation is not a one-off decision but a series of decisions and an interaction between firms and unrelated actors, which can influence the market choice and the entry mode choice. Previous studies found that high technology start-ups with resource scarcity and fast commercialisation vision, prefer to collaborate with third parties instead of exporting (Bell, 1995; Jones, 1999; Burgel & Murray, 2000).

Ojala (2009) examined 8 Finnish high technology SMEs. He came to the conclusion that only two companies used formal networks with their distributors in foreign markets and only two firms used informal relationships with their friends. His findings contradict those of Coviello and Munro (1995, 1997), Coviello and Martin (1999) and Coviello (2006) where formal and informal relationships can be perceived as facilitators of the internationalisation activities of SMEs.

Johanson and Mattsson (1988) highlighted the importance existing networks play in the market selection decision process. The incremental internationalisation theory describes that during the export phase, there is a proclivity for firms to invest to psychically distant countries. Shane (1996) highlighted that contractual agreements can mitigate internal governance costs, especially those that are related to controlling and monitoring agent behavior and opportunistic behavior. Bell et al. (2003) and Ojala and Tyrvainen (2007) proposed that SMEs especially those that operate in knowledge-intensive sectors due to the nature of their niche products prefer to enter countries, which are lead markets.

Zain & Ng (2006) examined three Malaysian software SMEs. They found that networks can assist SMEs to select a market, decide an entry mode, minimise risk, and finally help to increase their network. However, their sample and context are difficult to generalise to different countries and other sectors. In addition, Lu and Beamish (2001) suggested that internationalisation can be hindered by the scarcity of resources, credibility and limited experience; however, these obstacles can be facilitated or overcome with the use of networks. Ellis and Pecotich (2001) examined Australian SMEs and found that exports were strongly correlated and started by the

person who was responsible for those decisions making and his/her existing social network.

A number of previous qualitative studies (e.g. McDougall et al., 1994; Murray, 1996) have described the characteristics of the founder and key employees in the internationalisation process. On the other hand, quantitative studies (e.g. Bell, 1995; Shrader et al., 2000) have examined the market entry forms and geographic scope of foreign sales. For example, Lindqvist (1991) supported that Swedish firms preferred direct exporting and foreign sales via intermediaries like distributors and agents. However, her research lacked explanatory variables that could explain the entry mode choices. Another illustrating example is Bell's study (1995) that examined Finish, Irish and Norwegian software firms. He found that almost 70% of sales transactions were carried out via direct exports or agents and distributors. Only a small number of companies were engaged with FDI in the form of sales subsidiaries and marketing. Furthermore, Shrader et al. (2000), based on their results of U.S. firms, found that firms that decide to invest in high-risk countries can minimise the risks by using networks.

The majority of studies in the entry mode choices in the International Entrepreneurship field have been mainly descriptive and exploratory and not explanatory (Burgel and Murray, 2000). There are few studies that explain the reasons that lie behind the entry mode choices (e.g. Bell, 1995; Shrader et al., 2000). This study is explanatory in terms of understanding the mechanism of network closure, structural dimension and different roles of social capital in the internationalisation process of high technology INVs.

3.2.3 Networks and geographic scope

The traditional internationalisation process theory perceives geographic distance as an impediment for rapid internationalisation (Johanson and Vahlne, 1977). Geographic distance can be defined as the difficulty to comprehend how a foreign environment-market works (Johanson and Wiedersheim-Paul, 1975). However, INVs are able to overcome the obstacle of the geographic distance as they enter distant markets (Oviatt and McDougall, 1994; Gabrielsson et al., 2008).

Furthermore, Styles and Amber (2000) proposed that social networks are able to offer knowledge regarding cultural differences when firms decide to enter psychic distant markets. Shirokova and McDougall-Covin (2012) proposed that in industries with a high degree of internationalisation, the role and value of networks is not so crucial in order to establish new links with businesses. It was justified from previous studies that the geographic scope is greater when an early internationalising firm is more international (e.g. Hashai, 2011).

Another factor that companies take into consideration when they internationalise is the location risk. Location risk can be perceived as the difference between home and host environments that encompasses culture, business, and economic practices. When firms enter a psychic distant market, they prefer to choose entry modes with high degree of local participation or a low degree of resource commitment (Kim and Hwang, 1992).

There is a debate on the role of networks in the internationalisation process. On the one hand, networks are described as a necessary factor for rapid internationalisation, while on the other hand, their role was found less crucial. According to network theory, social networks do not play an important role when a firm enters a geographically distance market. The selection of a foreign market can be influenced by a number of variables such as location, demand, and competition risks. Those variables influence the entry mode choices and can have an impact on the level of resource commitment and control (Hill et al., 1990).

3.2.4 Networks and resources

As stated earlier, resource scarcity is the main impediment of SMEs in order to further develop their operations (Brouthers et al., 1998; Leonidou, 2004). SMEs' expansion to foreign markets can be negatively affected by the lack of experiential knowledge and capital (Zaheer, 1995; Peteraf and Barney, 2003). There are no advantages for these firms to internationalise in an early stage according to the resource-based view of the firm (Peteraf & Barney, 2003). However, this view has been challenged by a number of empirical studies which showed that some SMEs internationalise from their inception (Oviatt and McDougall, 1994; Knight and

Cavusgil, 1996; Madsen and Servais, 1997). The literature has partly explained the important role of networks and their substitute as resources for SMEs (Coviello and Munro, 1995; Oviatt and McDougall, 1999, 2005; Andersson and Wictor, 2003; Loane and Bell, 2006). SMEs face the problems of 'liability of newness' and 'liability of foreignness' that can be overcome with the assistance of networks (Tang, 2011). Firms should use their networks as a strategic asset and more specifically in the event that they decide to internationalise quickly (Mort and Weerawardena, 2006; Loane and Bell, 2006).

Chetty and Campbell-Hunt (2003) suggested that SMEs are more likely to use limited number of networks, and depend on them. This results in less freedom on the part of SMEs that have to follow the goals of partners, which are resource-rich (Chow and Fung, 2000).

Different institutional and business environments may result in variations among the network partners and the effects on internationalisation (Peng and Heath, 1996; Child and Rodrigues, 2005). Tang (2011) suggested that SMEs with sophisticated networking skills are able to overcome their resource scarcity. Moreover, he found that foreign business resources such as market knowledge, and distribution channels that were derived from networks, have a positive impact on the speed of internationalisation. Organisational resources such as human capital that were derived from networks may, on the other hand, hinder the internationalisation process.

Andersson and Evangelista (2006) demonstrated the importance of personal networks in born globals. They also found that personal networks can assist entrepreneurs to acquire the necessary funds and to give access to potential partners in other locations. The results of Coviello's (2006:723) research argued that "networks will open doors for INVs by providing market access, financing, distribution channels, referrals and a pool of contacts for both internal and external development".

3.2.5 Networks and knowledge

Oviatt and McDougall (2005) proposed that there are three types of firms that rely differently on knowledge and resultant speed of internationalisation. The first type includes traditional firms, which adapt well-understood technologies (Uppsala model). The second type refers to knowledge-intensive firms that use complex knowledge to design new products. These firms internationalise faster because they develop a competitive advantage. Finally, the third type encompasses the knowledge-based firms. These firms use sophisticated knowledge and follow very fast internationalisation because they have a unique sustainable advantage (Oviatt and McDougall, 2005).

This study focuses mainly on the second and third type of firms. High technology INVs offer products, which require unique knowledge, and their speed of internationalisation is fast. Dubini and Aldrich (1991) supported that networks can be perceived as a very useful and powerful tool for entrepreneurs. Analysing networks has been a popular method and framework in the context of IE (Coviello and Munro, 1995, 1997; Oviatt and McDougall, 1994; Bell, 1995). It is important to highlight, at this point, that Bell's (1995) research on software companies in Western countries proposed that networks could explain the internationalisation process of the examined firms. Bell (1995) also found that exports can be facilitated by formal and informal networks that evolve diachronically.

Networks can assist businesses to obtain the necessary knowledge regarding institutions in foreign markets. Gaining this knowledge, firms can learn the rules and regulations in different countries (Senik et al., 2011). Johanson and Mattson (1988) stressed the importance of having networks that can positively influence the time and mode of internationalisation by providing necessary links and information on new markets. Thus, the entry into foreign markets can be less risky (Coviello and McAuley, 1999). In addition, networks can minimise entry barriers by offering knowledge on new foreign markets and capabilities (Coviello and Munro, 1995; Chen, 2003). In addition to this Coviello and Munro (1995) described the importance of connections and how those help SMEs to obtain the necessary knowledge on foreign markets and minimise entry barrier problems.

Hohenthal et al. (2014:17) argued that experiential network knowledge can have an impact on the value of business relationship, especially at an early stage of a company's expansion "in a foreign market network", whereas the impact of international experience is less important. They also stressed that international experience has a direct effect on "the perceived importance of knowledge about customers" (Hohenthal et al., 2014:17). Finally, the same authors found that during the evolution of a business relationship, managers realise that those relationships become more important than knowledge regarding competitors.

3.2.6 Networks and different institutional environments

The market choice, entry mode and expansion strategies can be heavily influenced by institutional networks (i.e. government institutions and agencies). Additionally, these can mitigate the risk and cost of internationalisation (Zain and Ng, 2006).

Senik et al. (2011) found that three sources of networks helped SMEs to grow international. The first includes institutions (e.g. government agencies), while the second source includes personal relations (e.g. relatives, colleagues). Finally, the third source consists of business associates (e.g. owners, managers). The role of networks encompasses their assistance to identify key people in foreign markets who can help new established SMEs to locate new opportunities and exploit them.

According to Dib et al. (2010) the three most influential variables in the decision of a company to become born global are: the firm, the network and the entrepreneur. In unstable environments entrepreneurs try to sustain their businesses by attaining domestic legitimacy and using powerful personal networks (Kiss and Danis, 2010; Danis et al., 2011). In particular, Vasilchenko and Morrish (2011) supported that formal and informal ties can help ICT firms to maintain a competitive position when they enter new international markets.

The strategic decisions of firm behaviour can be influenced by the international links to which an entrepreneur has access. Previous models, which have tried to explain the internationalisation process of fast internationalising firms, did not focus on the moderating role of both social and business networks in different

institutional contexts. It is worth mentioning that institutional differences and barriers may affect the internationalisation of firms (Dib et al., 2010). Rona-Tas (1994) found that individuals in political bureaucracy might assist firms to become aware of new laws and regulations. SMEs face the problem of legitimacy; their future network partners do not easily trust or recognise small and newly established firms (Stuart et al., 1999; Zahra and Wright, 2011).

Previous studies suggested that networks in Russia and Brazil, two of the biggest emerging economies, were not so crucial in the internationalisation process (Dib et al., 2010; Shirokova and McDougall-Covin, 2012). On the other hand, it was argued that networks assist rapidly internationalising firms to expand their operations into different foreign markets. Thus, entrepreneurs use their personal networks to overcome institutional deficiencies (Kiss and Danis, 2010).

3.3 Social Capital

In the previous section the role of networks on the internationalisation process was examined. It is now important to explain what social capital is. Social capital derives from network relationships and plays a critical role in firms. Thus, this section reviews social capital, which is rooted in sociology, and then presents its specific role in the internationalisation of firms.

Social capital has become a very important concept that was used by a number of scholars in social sciences. Social capital derives from social relations and mobilises in order to ease and accelerate action (Adler and Kwon, 2002). In previous research social capital theory was used to explain economic development, community life and governance (e.g. Portes and Sensenbrenner, 1993; Jackman and Miller, 1998). Furthermore, social capital encompasses economic relations which are embedded within social and political contexts (Granovetter, 1985). Social capital theory argues that actors can access a large number of resources from their participation in different relationships (Gabbay and Leenders, 1999). In addition to the previous point, Nahapiet and Ghoshal (1998) supported that social capital has a great value in terms of its ability to assist actors to achieve their targets, whereas, it

would be almost impossible without it or possible only with an extra cost to the focal actor.

Stam et al. (2014) argued that social capital and all the resources within an entrepreneur's personal network are very important and influence a small firm's performance. For example network relationships can open doors and assist entrepreneurs to discover new business opportunities and enhance the legitimacy of firms.

It is very important to understand, in-depth, the different roles of social capital in a number of studies. First, social capital was used to explain how career success can be influenced by this concept (e.g. Burt, 1992; Podolny and Baron, 1997). Secondly, researchers used the lens of social capital to understand how it can assist employees to find jobs (e.g. Granovetter, 1995). Thirdly, scholars explained how resource exchange could be eased by social capital (e.g. Hansen, 1998; Tsai and Ghoshal, 1998) and how it can facilitate the development of intellectual capital (Nahapiet and Ghoshal, 1998). Fourthly, previous research showed that social capital can have a positive impact and supplier relations can be strengthened (e.g. Baker, 1990; Uzzi, 1997). Social capital or the resources that an entrepreneur may access via his or her personal networks can assist him or her to discover opportunities (Bhagavatula et al., 2010), enhance the legitimacy for his/her firm (Elfring and Hulsink, 2003) and resources can be mobilised in the personal network (Batjargal, 2003).

Based on the examples above, it is clear that social capital has been applied to a wide spectrum of studies. Despite the number of studies on social capital, little is known about social capital and high technology INVs internationalisation especially in the context of Scotland and Greece.

Colleman (1998) highlighted that social capital can be connected to appropriability. Appropriability is related to studies used the concept of social capital to explain trust, social networks and inter-firm networks. On the other hand, social capital has been criticised by scholars (e.g. Lappe and DuBois, 1997:119) who mentioned that this notion is an elastic term.

Adler and Kwon (2002:18) described that "goodwill is the substance of social capital, its effects flow from the information, influence, and solidarity such goodwill

makes available”. The same authors added that the sources of social capital actually derive from the social structure where the actor is located. Social capital is distinguished and different from other types of resources, social capital is “the resource available to actors as a function of their location in the structure of their social relationships” (Adler and Kwon, 2002:18). Additionally there are three dimensions of social structure: market relations, hierarchical relations and social relations. This study mainly focuses on market relationships, i.e. the relationships between firms and sellers and buyers where the exchange of services and products are made on monetary terms are examined.

Definitions of social capital

There are different definitions of social capital based on the work of Adler and Kwon (2002) in Table 5 which summarises these from prior studies. These definitions are different in terms of their focus, the different effect that social capital may have and the sources of social capital. Secondly, the definitions differ on whether the focus is on the interrelationships of actors, the relationships among actors within an entity and a combination of the previous two. Social capital can focus on external relations where this form is called bridging or it can focus on internal ties so the social capital takes the form of bonding (e.g. Putman, 2000).

Table 5 Definitions of social capital

Viewpoints	Authors	Definitions
External	Bourdieu (1985:248)	“the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalised relationships of mutual acquaintance or recognition”
	Bourdieu (1985:243)	“made up of social obligations (‘connections’), which is convertible, in certain conditions, into economic capital and may institutionalised in the form of a title of nobility”
	Bourdieu & Wacquant (1992:119)	“the sum of the resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalised relationships of mutual acquaintance and recognition”
	Burt (1992:9)	“friends colleagues, and more general contacts through whom you receive opportunities to use your financial and human capital”
	Burt (1997:355)	“the brokerage opportunities in a network”
Internal	Coleman (1990:302)	“Social capital is defined by its function. It is not a single entity, but a variety of different entities having two characteristics in common: They all consist of

	Putman (1995:67)	some aspect of social structure, and they facilitate certain actions of individuals who are within the structure” “features of social organisation such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit”
Both	Nahapiet & Ghoshal (1998:243)	“the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. Social capital thus comprises both the network and the assets that may be mobilised through that network”

Source: Adapted from Adler and Kwon (2002:20)

The bridging views perceive social capital as a resource that ties a focal actor with other actors. This view explains why some firms are more successful over their competitors. Social capital allows actors in social networks to establish and use links with other actors. The bridging views are related to external ties. On the other hand, the bonding views of social capital are related to internal ties. These views encompass the social capital as part of a collectivity such as an organisation and community so the links are important amongst the groups of the collectivity. The most important features of the bonding views of social capital are “cohesiveness and the pursuit of collective goals” (Adler and Kwon, 2002:21). The third type of views refers to those that are neutral from the internal and external aspects. According to Adler and Kwon (2002) the neutral definitions have an advantage compared to the other two because external and internal views are encompassing different unit of analysis for example an employee and his/her relations to other actors either within a firm or outside the firm. Additionally, based on these views the social unit like a firm may be influenced by other actors that belong to its external and internal linkages. This study follows Adler and Kwon (2002) who used both internal and external viewpoints so Nahapiet and Ghoshal’s (1998) definition is adopted.

Dimensions of social capital

According to Nahapiet and Ghoshal (1998) three dimensions of social capital were found from the interaction between firms: structural, relational and cognitive. The same authors described the structural dimension as “the overall pattern of connections between actors, which could be described as network ties, network configuration, and appropriable organisation” (Nahapiet and Ghoshal, 1998:251). This dimension is important in order to comprehend if network ties are existent

between units and to understand the network configuration. Personal contacts can generate value for individuals and companies. Personal contacts can be very useful for individuals as they can offer them opportunities to find a new job or to get access to a new customer. Firms can also take advantage of their contacts in order to acquire new knowledge and resources. This study examines high technology INVs that become international players from their inception so the importance to make new contacts and take care of them is paramount.

The relational dimension of social capital encompasses the assets which are generated and developed through relationships that are embedded in trust, norms, obligations and identification (Nahapiet and Ghoshal, 1998:251). According to the same authors, the relational dimension is concentrated on the relations people have which can impact their behaviour. For instance, firms with the same position in a network may act differently based on their closure, and attachment to other members. The level of trust amongst the members may have an impact on knowledge and resources sharing. The relational dimension is related to assets which are embedded in relationships and include trust and trustworthiness (Nahapiet and Ghoshal, 1998). Trustworthiness is important and derives from the level of trust that an actor can offer and how he or she can be trusted by other actors. In embedded relationships trustworthiness can perform as a governance mechanism (Uzzi, 1996). In other words, when actors trust each other resources are easier shared and there is no need for firm and strict governance mechanisms. Furthermore, Nahapiet and Ghoshal (1998) argued that obligations, expectations, identity and identification are meanings related to the relational dimension of social capital.

The cognitive dimension of social capital encompasses the resources which are related to shared interpretations, and systems of context amongst actors which are incorporated in shared codes, languages and shared anecdotes. Individuals that share a common vision can better collaborate by building more opportunities to share knowledge and by minimising possible misinterpretations (Nahapiet and Ghoshal, 1998). Tsai and Ghoshal (1998) stressed the importance of a common goal among parties because there are higher chances to understand the benefits that come from exchanging and combining their resources. Firms that share the same vision are, therefore, highly likely to establish partnerships and share their resources.

Summarising the three dimensions of social capital is important to highlight that trust and trustworthiness are crucial for sharing knowledge, resources and build partnerships which can assist firms to internationalise their operations successfully.

Is Social capital a capital?

Many scholars have indicated that social capital should not be perceived as a form of capital. For example Baron and Hannan (1994) expressed their disagreement that studies use economic terms in the field of sociology, and characterised the existing work on social capital, as a plethora of capitals. On the other hand, a number of scholars supported that social capital is a capital. First, Adler and Kwon (2002) argued that social capital can change over time and can be augmented like any other form of capital. For example, actors can have better access to information. Secondly, social capital can be ‘appropriable’ and ‘convertible’ as described by Coleman (1988) and Bourdieu (1985) respectively. Social capital is appropriable because actors can exchange information, knowledge and advice. Additionally, social capital can actually be converted and take other forms of capital such as economic capital. For example, an actor may use his/her social capital to get access to venture capitals.

Social capital can be used as a substitute from actors when there is lack of resources. In this study, where INVs face the problem of scarcity of resources, the importance of social capital is very high. A very good example to illustrate the substitute nature of social capital is when firms do not have financial resources and use their superior network relationships to get access to these resources. Lazerson (1995) showed that social capital helped firms to reduce their transaction costs by enhancing the effectiveness of economic capital.

To maintain its efficacy, social capital should be maintained. Adler and Kwon (2002) mentioned that the depreciation rate of social capital cannot be predicted. Social capital can be depreciated for two reasons: a) because the actors do not use it; and b) the contextual changes may make it obsolete.

Social capital can also be perceived as a public good for a collectivity (Coleman, 1988). In other words, the use of social capital does not reduce its availability to other actors. However, if actors are not part of a network of

relationships then those are excluded. This can be illustrated in the work of Johanson and Vahlne (2009) who stressed the disadvantages of outsidership. Leana and Van Buren (1999) argued that the external and internal views are different in terms of focus where the first one focuses on private goods and the second one focuses on public goods. In addition to the previous point Adler and Kwon (2002) argued that external views (bridging social capital) can be defined close to private goods.

Some scholars (e.g. Coleman, 1988) supported that the uniqueness of social capital lies in its location. Social capital derives from the relations with other actors and not in the actors themselves. Burt (1992:58) highlighted the “ownership structure” of social capital “no one player has exclusive ownership rights to social capital. If you or your partner in a relationship withdraws, the connection dissolves with whatever social capital it contained”.

Scholars (e.g. Adler and Kwon, 2002) stressed that social capital cannot be quantified or measured. However, the benefits that accrue from social capital can be evaluated. For example, scholars showed how important social capital is in the internationalisation of firms and measured it in terms of how many times it occurred (e.g. Chetty and Agndal, 2007; Agndal et al., 2008; Kontinen and Ojala, 2011a).

Opportunity, motivation and ability of social capital

Social capital transactions can be created by the opportunities that come from actors' networks of social ties. External ties are very important because they can connect the contacts of one actor to other actors. Additionally, internal ties can generate opportunities to allow a collective of actors to work jointly (Adler and Kwon, 2002).

Putman (1993) argued that social capital can derive from norms and trust, and not only from networks. Thus, motivations can be a source of social capital. Motivations encompass the reasons why actors decide to assist and offer their knowledge to other actors. Social capital is also associated with generalised reciprocity, as described by Putman (1993:182-183) “not I’ll do this for you, because you are more powerful than I, nor even I’ll do this for you now, if you do that for me

now, but I'll do this for you now, knowing that somewhere down the road you'll do something for me”.

A number of authors highlighted the connection between social capital and trust. Some argued that social capital stems from trust (e.g. Putman, 1993), some others supported that trust is a form of social capital (e.g. Coleman, 1988) and some others proposed that trust and social capital are synonyms (e.g. Fukuyama, 1997). Adler and Kwon (2002:26) supported that trust should be perceived as one of the most important “motivational source of social capital”.

Another source of social capital is ability and as described by Adler and Kwon (2002:26) it encompasses “the competencies and resources at the nodes of the network”. Some authors did not accept that ability could be seen as a source for social capital, for instance Burt (1997) argued that social capital is related to opportunity, and that human capital is associated with individual ability. Additionally, Nahapiet and Ghoshal (1998) supported that trust is important but they also highlighted that shared beliefs can be perceived as a form of ability.

Social capital as an asset and liability

Some authors argued that social capital does not only have positive outcomes. Social capital and unbalanced investment can lead to a constraint asset and liability (Gargiulo and Benassi, 1999). Additionally, social capital can be beneficial for one actor only (i.e. focal actor) or may have a negative impact on the other members of a network (Adler & Kwon, 2002).

One of the most important benefits of social capital is information. The focal actor has better access to a wider number of sources and this can help and enhance the quality and relevance of information (Adler and Kwon, 2002). The benefit role of social capital was highlighted by Coleman (1988), who gave an example of a scientist who was up to date with the research field as a result of his regular interaction with peers. Moreover, previous studies on networks have supported that access to information can be facilitated by network ties regarding job opportunities (e.g. Granovetter, 1973; Burt, 1992) and innovations (e.g. Burt, 1987). Podolny and Page (1998) argued that interorganisational networks can assist companies to obtain

knowledge and new skills. Uzzi (1997) showed that fine-grained information can be exchanged when firms are socially embedded.

Burt (1997) supported that brokering activities concerning information from partners to the focal actor can be facilitated by social capital. The whole network can benefit from the diffusion of information which depends on mutual outflow of information. Uzzi (1997) agreed that fine-grained information amongst firms is very useful and important because they can capture the future needs of the market and customers. Moreover, Hansen (1999:88) argued, “when project teams end up transferring codified and independent knowledge, weakly tied project teams have an advantageous search position compared with strongly tied teams”. The same author explained that “weakly tied project teams still have an advantageous search position compared with strongly tied ones, but, in transferring highly complex knowledge, they are likely to incur severe transfer problems because of a poor interaction with the source unit” (Hansen, 1999:89). In other words, weak ties are important for searching for new information, and strong ties for complex information transfer and tacit knowledge.

Adler and Kwon (2002) argued that the second benefit of social capital is related to control, power and influence. A very good example to illustrate the importance of power is the work of Burt (1992) who argued that benefits can stem to entrepreneurs who are capable of bridging groups which are not connected. Entrepreneurs who have the ability to bridge disconnected groups can yield benefits from the negotiating power that they obtain, as well as, from their position as powerful actors. In one of his more recent works, Burt (1997) supported that managers who were able to bridge structural holes had more negotiating power and were more powerful actors, as a result of their ability to control intergroup projects.

The third benefit of social capital consists of solidarity. Solidarity is important because the closure of social capital is high and formal controls become less important (Adler and Kwon, 2002). Nelson (1989) demonstrated in his work that regular cooperation amongst intergroup ties in organisations can lead to speedier solutions when despites arise. Additionally, when the level of trust is very high amongst network members, rich and sensitive information can then be disseminated due to the solidarity amongst actors (Krackhardt and Hanson, 1993).

On the other hand, social capital creates risks which can be higher than its benefits (Leana and Van Buren, 1999). Adler and Kwon (2002) argued that building social capital should be perceived as an investment, where the focal actor has to finance and support and in some cases this investment cannot be cost efficient. For example, Hansen (1999) showed that groups with strong ties can deliver projects later than groups with weak ties. Additionally, the number of ties a focal actor has and the number of the other actors' ties can influence the dependence of the contacts to the focal actor. In other words, when actors have a large number of contacts, they rely less on the focal actor and, therefore, the power of the focal actor becomes weaker (Ahuja, 1999). Finally, solidarity may have a negative impact on the focal actor because the flow of information and new ideas may be hindered, Powell and Smith-Doerr (1994:393 cited in Adler and Kwon, 2002) found that "the ties that bind may also turn into ties that blind".

Adler and Kwon (2002) suggested that social capital should be balanced in terms of benefits and risks. They also argued that groups without internal and external ties would be affected by a low stock of social capital. Moreover, they proposed that actors should try to achieve a balance between internal and external linkages.

3.3.1 Social Capital and internationalisation process

The internationalisation process can be defined as the expansion of firms into new markets, the use of more international relationships as the firm becomes more engaged in international operations and finally the diachronic change of organisational structures from less to more resource-consuming (Chetty and Agndal, 2007). Calof and Beamish (1995) and Pedersen et al. (2002) stressed out that limited research has been done on the internationalisation modes and how those change over time. Kogut and Zander (1996:503) stated that "a firm be understood as a social community specialising in the speed and efficiency in the creation and transfer of knowledge". This approach and perspective are central to comprehend the structure of a firm. In other words, social interaction with other actors is source of social capital for firms.

Previous studies on social capital highlighted that social action is related to relationships as these act as a resource (e.g. Burt, 1992). Social capital theory has a central proposition which describes networks of relationships as a very useful resource for managing social affairs (Nahapiet and Ghoshal, 1998), and giving their proposed members “the collectivity owned capital, a credential which entitles them to credit, in the various senses of the word” (Bourdieu, 1986:249).

Network relationships are valuable resources for firms. Granovetter (1973) found that weak ties and Boissevain (1974) stated that ‘friends of friends’ can assist members of a network to access information and opportunities which are not available outside the network. Specific networks, which are not easily accessible, are significant source of social capital because they offer their members social status or reputation (Bourdieu, 1986; Burt, 1992).

According to Bourdieu (1986) and Bourdieu and Wacquant (1992) firms acquire resources from their network relationships, this ability is considered as social capital and its role in the internationalisation process is very important. Social capital can be either beneficial or it can act as a hindrance for a firm. Chetty and Agndal (2007) categorised social capital based on its role in internationalisation in three categories: efficacy, serendipity and liability. These roles will be defined later in this chapter. Johanson and Vahlne (2006) highlighted that internationalisation process is strongly related to social capital. This process includes the development and access to social capital with regard to firm’s creation, and expansion of international relationships.

INVs can have access to both domestic and international social capital. Domestic social capital encompasses external ties that have only domestic operations. In other words, the partners are all domestic. On the other hand, international social capital is related to external ties that include foreign partners and partners in the domestic market which have international presence. Domestic social capital can assist firms to acquire resources in the domestic market. International social capital can be very crucial for the internationalisation of firms. Additionally, international social capital can help firms to acquire resources in mainly foreign and domestic markets (Arenius, 2002).

INVs may face impediments in accessing international social capital because the international environment has differences in terms of culture, language and political systems. These differences were described in the Uppsala model (Johanson and Vahlne, 1977) where the existence of psychic distance, between home and foreign markets, may hinder the development of external ties. Nonetheless, Oviatt and McDougall (1994, 2005), McDougall et al. (1994) and Bell (1995) argued that rapidly internationalising firms may overcome the psychic distance obstacles and easily create external ties.

Firms that internationalise their operations abroad have a position in their home country network. Johanson and Mattsson (1988) analysed in their network model of internationalisation, the domestic network position and its impact on internationalisation. Firms cannot reap the benefits of knowledge and experience of their network, regarding foreign markets, if their network is domestic and not internationalised. When firms face this situation, the development of knowledge is necessary in order to internationalise their operations. On the other hand, when firms belong to networks that are already internationalised then the home market relationships are crucial for the internationalisation, as their power is higher than relationships developed in export activities. In this situation, firms are highly likely to follow their domestic market customers or suppliers.

The network model of internationalisation (Johanson and Mattsson, 1988) has been challenged by Chetty and Blankenburg Holm (2000). Chetty and Blankenburg Holm (2000) showed, in their study on the internationalisation of manufacturing SMEs, that a wider network of relationships was more important for the internationalisation, whereas Johanson and Mattsson (1988) argued that production network relationships were more important. The firms examined on Chetty and Blankenburg Holm's (2000) study used relationships such as suppliers, customers, agents, distributors, organisations that promote exports, competitors and consultants. Therefore, international social capital included more resources than those found in Johanson and Mattsson's (1988) study. Chetty and Blankenburg Holm (2000) suggested that one of the weaknesses in the network model of internationalisation, was that the model did not take into account how important was the role of the decision maker, and the characteristics of the firm, which influence the discovery of

opportunities in penetrating foreign markets. Those two factors were related to networks and became an area of research in the INV literature (McDougal et al., 1994).

Rasmussen et al. (2001) in their study on born global firms highlighted the importance of social capital in internationalisation. In particular, one of their cases was an Australian software firm. Its relationships assisted it to become more credible, trustworthy and gain access to financial resources. Furthermore, the company was benefited by its relational social capital to enter foreign markets.

Examining social capital in this research is important because this study will capture the internationalisation process of high technology INVs which is a dynamic process. Larson and Starr (1993) stated that social capital is not static as it changes diachronically. Additionally, Rauch (2001) found that based on the nature and change of a firm's relationship (i.e. creation of new relationship, integration into existing ones, and termination of problematical ones), social capital can be developed or reduced.

3.3.2 Efficacy, serendipity, and liability role of social capital

A firm's ties throughout internationalisation are initiated, built, and strengthened, thus the internationalisation process involves elaborating and acquiring social capital (Johanson and Vahlne, 2006). Chetty and Agndal (2007) proposed that social capital can have three roles: efficacy, serendipity, and liability. These three roles are related to the internationalisation process of firms.

According to Chetty and Agndal (2007) the efficacy role is related to the effectiveness of the social capital of a firm. The efficacy role helps firms to market entry and mode adaptation. It also assists firms to identify possible business opportunities and acquire necessary knowledge for new or existing markets. Additionally, the efficacy role of social capital can alter a mode change from a low-control to a high-control mode (Chetty and Agndal, 2007). The efficacy role is critical in situations where the demand for information can change and cooperation with business associates is important. Yli-Renko et al. (2001) stated that firms should interact frequently with their partners in order to access their knowledge. The higher

the interaction in a network is, the greater the social capital which can be accumulated (Chetty and Agndal, 2007). In addition, reciprocal dependence in relationships, leads to value formation (Blankenburg Holm et al., 1999).

Chetty and Agndal (2007:11) highlighted that the serendipity role refers to: “the unexpected events arising from a firm’s social capital that trigger a mode change. Thus, the mode change is not initiated by the firm, but rather, by serendipity”. Nahapiet and Ghoshal (1998) found that organisations are engaged in conversations in different social contexts. They stated that “these meetings and social events provide the unplanned and unstructured opportunities for the accidental coming together of ideas that may lead to the serendipitous development” (Nahapiet and Ghoshal, 1998:258). Moreover, Agndal et al. (2008) found that the serendipity role of social capital is more predominant when firms penetrate geographically or psychically distant countries. Crick and Spence (2005) stated that serendipity is an important factor in both early and late foreign market entry, however, this is resultant from a manager’s response and the capture of new business opportunities.

The liability role refers to “the trigger for change that occurs as a result of the high costs and amount of time required to monitor and sustain social capital and poorly performing partnerships that do not accomplish the expected sales” (Chetty and Agndal, 2007:12). Firms have to adapt their modes when a negative situation arises in the market (Chetty and Agndal, 2007). The liability role of social capital occurs when partners and distributors are not committed to the producer and when they (i.e. their partners) become competitors. In other words, when a firm’s relationships are characterised as problematic, and costly, then the firm is highly likely to use a different mode (Chetty and Agndal, 2007; Kontinen and Ojala, 2011a). Uzzi (1997) also argued that an unpredicted loss of a core network actor can become a reason to change social capital from an asset to liability.

The analysis Chetty and Agndal (2007) offered limited explanations so it is important to search deeper in social capital in relation to internationalisation and comprehend the mechanism of network structure and closure. This approach will offer better explanations to the role of social capital and network relationships.

3.3.3 Social capital and foreign market entry

Crick and Jones (2000) found that network relationships assist SMEs' international expansion. This assistance may take the form of various resources. For example, they may offer necessary market knowledge. Leonidou (2004) added that foreign market knowledge is crucial in internationalisation and that, its lack, is one of the major hindrances of foreign market entry. Additionally, Harris and Wheeler (2005) supported that social capital offers a number of functions which are related to internationalisation. More precisely, they found that knowledge of business practices, product and distribution advice are part of enabling functions of social capital.

Internationalisation can also be assisted by resources offered to firms by their networks like reputation, organisational, etc. (Chetty and Wilson, 2003). Agndal et al. (2008) found that social capital is dynamic, and changes and varies over time. SMEs, due to their limited resources, use their network relationships or other external parties in order to access information on international markets. This knowledge reduces uncertainty and may have an impact on decision making (Chetty and Campbell-Hunt, 2003). These third parties play an important role because they act as a bridge between the company and the international market (Adler and Kwon, 2002; Ellis and Pecotich, 2011). Some SMEs internationalise by following their clients in foreign markets (Majkard and Sharma, 1998). This social capital assists firms to internationalise at an early stage, and to begin focusing on foreign markets rather than the domestic market (Agndal et al., 2008).

External parties, such as customers and suppliers, can trigger foreign market entries. These external parties act as sources of information for SMEs regarding new opportunities and may introduce future and potential customers and intermediaries (Ellis, 2000). In situations like those previously described, the internationalising firms can be described as passive until the internationalisation event has occurred. This is the serendipity role of social capital as described by Chetty and Agndal (2007).

Axelsson and Johanson (1992) found that social capital can be shaped, and formed over time, especially when firms operate internationally. It is important to highlight at this point, that newly established firms have limited relationships that

can trigger foreign market entries. Firms with foreign operations tend to have a larger number of relationships and this helps firms to be better connected; their existing relationships become deeper; and they are able to access their partners' relationships.

3.3.4 Network structure and closure

According to Kontinen (2011:28) the network model of internationalisation focused on the type (i.e. informal, formal and intermediary) and context (direct and indirect) of the network tie. The social capital theory, on the other hand, focuses on the level of trust, the different emotions, and the resources which are associated with the network tie (Kontinen, 2011). Social capital can offer a thorough and more analytical lens to comprehend the structure and mechanism of networks in the internationalisation process of high technology INVs.

Members of a network can develop ties which help the exchange of resources and knowledge. Strong and weak ties can be developed in social capital. Granovetter (1973) found that strong ties are related to relationships that have been shaped and developed diachronically through interaction and which include emotional strength, attachment and joint services. Because strong ties involve high maintenance costs, actors can only have a limited number of them (Singh, 2000). Weak ties, in contrast, do not require high maintenance costs so entrepreneurs can have a greater number of them and they can be very useful because they offer valuable information to the entrepreneur. Granovetter (1973) found that weak ties can be perceived as bridges to different sources of information, especially when those sources do not belong to an entrepreneur's close network (i.e. strong ties). He also suggested that weak ties offer unique knowledge to entrepreneurs because the interaction in weak ties is sporadic compared to the more frequent interaction in strong ties. Burt (2004) concluded that weak ties play an important role and help entrepreneurs to gain access to new ideas. Strong ties may offer different resources to entrepreneurs and are characterised by high levels of trust (Granovetter, 1985). Singh (2000) suggested that strong ties are more willing to share knowledge and advice amongst the different actors of the network. Finally, Agndal et al. (2008) verified that strong ties are very important in

the initial internationalisation process of a firm and weak ties play an important role in later stages.

Coleman (1988) and Burt (1992) used a sociological lens to examine structural holes and network closure and they both argued that those two mechanisms are very crucial to supplying social capital. Network closure, according to Coleman (1988), is positively associated with social capital because it eases the development of effective norms and sustains the trustworthiness of others, thereby strengthening social capital. The same author showed that when the closure of the network is more open, norms can be violated and hence those are unfounded and unpunished. Social capital will be weakened, as a result, due to the low levels of trust amongst the actors.

Based on the structural hole theory (Burt, 1992) social capital is originated in the brokerage of opportunities, which are created in a sparse network with a small number of superfluous ties. Structural holes or gaps can yield a competitive advantage for an actor whose relationships can connect or bridge the holes. Actors whose networks do not have many structural holes and can manage them, are rewarded with opportunities (Burt, 1992). Adler and Kwon (2002:24) highlighted that "...if information circulates more within than between groups, then a key source of social capital is a network of ties characterised by many structural holes – linkages to groups not otherwise connected".

According to Burt (2000) a network of firmly interconnected persons can generate network closure. The idea of network closure highlights how close-knit social ties may have a positive impact on the creation of social capital. In other words, network closure is related to networks where the actors are well connected so no one is able to escape without being noticed by the other actors. This means that a network is characterised from high levels of density (Coleman, 1988). In the situation where two or more actors acknowledge that collaboration may yield positive outcomes, then social norms allow closure of the network (Burt, 2010). Burt (2010:251) argued that in a very well connected network "people have strong relations with one another or can reach one another indirectly through strong relations to mutual contacts".

Network closure and structural holes are two mechanisms that generate social capital. In previous research these two mechanisms have been considered different from each other. In spite of this, some studies have shown that they are reciprocal mechanisms (e.g. Podolny and Baron, 1997; Burt, 2000). The performance of a firm is associated with how closed a network is and how many contacts are non-redundant. In other words, a firm has high performance when the network is closed and contacts are active (Burt, 2000). Podolny and Baron (1997) argued that managers can have access to appropriate information regarding new opportunities from networks that are able to bridge structural holes. Those opportunities can be exploited when close-knit ties are used. Embedded ties are preferred by organisations and those can generate and assist in the creation of network closure (Gulati and Gargiulo, 1999). The same authors stressed that when organisational change is necessary, structural holes may be more crucial than in network closure, because they provide better flexibility.

The strength of ties (i.e. strong and weak) was a popular topic in sociology and especially to understand how information is transferred and innovation can be adapted by firms (Granovetter, 1973; Lin et al., 1981). There is no consensus as to whether strong and weak ties are different or similar entities (Dubini and Aldrich, 1991; Uzzi, 1997) or how relationships differ between strong to weak ties (e.g. Aldrich and Zimmer, 1986). Hite (2003) examined in-depth strong ties and also concluded that there is not a clear demarcation between strong and weak ties.

Granovetter (1973) argued that the strength of ties is related to amount of time, emotional strength, attachment and joint services which characterise the tie. Marsden and Campbell (1984) in their work checked if Granovetter's propositions could be tested. They came into the conclusion that closeness is the most appropriate measure for the strength of tie so emotional attachment in the relationship is the prime indicator.

Marsden and Campbell (1984) and Uzzi (1997) challenged and expressed their disagreement in measuring the strength of ties based on duration and frequency because these indicators overvalue the strength of ties. Alternatively, they suggested, that strength of ties are more associated with subjective facets such as closeness, appreciation and cooperation. Granovetter (1985) argued that information flow can

be speedier, more credible and influential in strong ties. On the other hand, weak ties are important because they offer new ideas and information compared to obsolete and unnecessary information received through strong ties (Granovetter, 1973). Granovetter (1973) also argued that weak ties are more crucial at attaching disconnected networks than strong ties.

There are a number of factors, according to previous studies, that can explain the strength of a tie such as closeness (Marsden and Campbell, 1984), trust (Jack, 2005), commitment (Hite, 2003) and mutual respect (Jack, 2005). This research follows the definition of Kontinen and Ojala (2011a:136) for strong ties which says a “strong tie is defined as one which is close, and which is based on trust mutual respect, and commitment”. Soderqvist and Chetty (2009:9) describe a weak tie as “a superficial tie not yet based on strong trust and where the parties do not know each other well and are not emotionally close to each other”. Soderqvist and Chetty (2013) came up with a new type of tie where it cannot be characterised neither as strong nor weak, it is called an equally strong and weak tie. According to Soderqvist and Chetty (2013:542) equally strong and weak ties occur “...if a relationship could really be equally strong as weak, or whether this represents a group of relationships that the lead entrepreneurs could not easily categorise according to strength”.

Ojala (2009) mentioned that the structure of network ties (i.e. strong and weak) includes formal ties, informal ties, and intermediary ties. Soderqvist and Chetty (2009) stated that weak and strong ties can be found in formal ties, informal ties, and intermediary ties. Coviello and Munro (1997) described a formal tie as the interfirm relationships, which are focused on business or market relationships. Coviello (2006) found that informal ties include family and friends relationships. However, Larson and Starr (1993) argued that there is not so clear demarcation between formal and informal ties. Intermediary ties encompass the lack of direct contact between sellers and buyers (Kontinen and Ojala, 2011a).

Trade fairs and government organisations, which promote exports, can be seen as third parties. These third parties connect sellers and buyers and facilitate the establishment of network ties (Ojala, 2009; Kontinen and Ojala, 2011a). Additionally, Oviatt and McDougall (2005) found that intermediary ties can facilitate the building of links, especially in terms of international activities, between sellers

and buyers. All in all, rapid internationalising firms use more formal ties; whereas incremental internationalising firms use more informal ties (Chetty and Wilson, 2003; Coviello, 2006).

Network structure and closure in the high technology sector

Jansen et al. (2006) illustrated that the high technology sector is characterised from technological instability and dynamism. Firms in this sector have an advantage based on their organisational structures which allows them to be more flexible, innovative and to take decisions rapidly. According to Hansen (1999) weak ties are crucial and more efficacious as they permit search behaviours that can be broader and distant. As a result, more alternatives can be considered in the environment. An additional advantage of weak ties, is that a big number of those can be managed effectively by entrepreneurs so their exposure to information regarding technologies and new products is balanced. On the other hand, Rowley et al. (2000) argued that to be maintained, strong ties need emotional investments and they, as a result, entrepreneurs must utilise their cognitive resources in a limited number of relationships. The focus on strong ties may influence how entrepreneurs scan the environment, and in this particular situation, scanning is more local and biased.

Firms that operate in rapidly changing and information intensive environments can have a competitive advantage from their ability to be adaptive and for sensing changes in markets and new technologies (Zaheer and Zaheer, 1997). In other words, in the high technology sector small firms can have a superior performance when entrepreneurs have a personal network that allows identification of possible opportunities and threats in the markets. According to Rowley et al. (2000) entrepreneurs who have connections to different social circles, enhance their possibilities to be aware of how the market conditions change. In other words, structural holes are crucial for small firms, which operate in rapidly changing and unpredictable environments which typify the high technology sector. Furthermore, structural holes ease small firms to be rapidly adaptive to those changes. In fact, entrepreneurs whose personal networks are able to bridge structural holes can achieve higher autonomy and freedom in adapting the strategic directions of their

firms in order to exploit unexpected environmental changes (Maurer and Ebers, 2006).

Rosenbusch et al. (2011) found that high technology small firms can be more competitive when their innovative capabilities are high. In the high technology industry the knowledge is very specialised and is spread out over a large number of actors. Thus, knowledge should be obtained not from only one source but from multiple sources (Powell et al., 1996). In other words, various personal networks are crucial for high technology firms. Ruef (2002) also argued that network variety enhances the unique knowledge that can be incorporated and thus increases the possibilities that entrepreneurs recognise particularly innovative opportunities.

3.4 Research gaps

In the previous sections of the literature chapters of this thesis, the key theories in International Business, International Entrepreneurship and Social Capital were presented. The different aspects and factors that play important roles in the internationalisation process of SMEs and INVs were illustrated. In spite of this, there remain some questions, which are still unanswered. The gaps in the literature are presented in order to justify this study's choices and to design a conceptual framework that addresses the remaining gaps and where the researcher positions his research niche. The existing gaps are as follows:

- The definition on social capital adopted in this study encompasses both internal and external networks of a firm (Nahapiet and Ghoshal, 1998). It is necessary to follow a more holistic approach in terms of networks. In particular, an examination of network ties from three sources (i.e. employees, founders and firm) is important in order to better understand how those impact firm outcomes (Stam et al., 2014). This study examines network ties taking into account the three sources because it attempts to better comprehend the mechanism of these ties.
- Very few studies have examined the different roles of social capital (e.g. Chetty and Agndal, 2007; Agndal et al., 2008; Kontinen and Ojala, 2011a) so there are many areas that remain grey and require further explanation. The

different roles of social capital should be examined in different industries and contexts (Chetty and Agndal, 2007) and their interrelation to network closure and structural dimension should be also examined in companies with different ownership structures, because previous research has examined them only in family businesses (Kontinen and Ojala, 2011a). This study answers to those calls. High technology INVs in Scotland and Greece were chosen because their cultural backgrounds are different and all the selected firms are owned either by one or more persons who are not relatives.

- Social capital has been used as an “umbrella” concept so it is necessary to choose very specific constructs in order to add value (Adler and Kwon, 2002). This research follows those suggestions and chooses a very specific context where the different roles of social capital are examined to understand how they are linked to network relationships in the context of high technology INVs.
- Another question that has been examined limitedly was the accumulation of social capital and how this takes place in the context of foreign markets expansion (Stam et al., 2014). This study explores this and tries to clarify how social capital is formed and at what speed this occurs in multiple foreign market entries. INVs are firms that operate into multiple locations in foreign countries and internationalise their operations rapidly so it is important to understand if social capital follows the same speed.
- Previous literature has shown that INVs prefer to enter countries, which are market leaders (e.g. Bell et al., 2003; Ojala and Tyrvainen, 2007) and follow a niche strategy. However, the extant literature has not indicated if social capital is affected by the firm’s competitive positioning and the different resources that INVs follow. In this study, high technology INVs, that operate in a number of foreign countries, are examined because this study attempts to illustrate how the mechanism of social capital and network relationships can affect the market choice; or the opposite, how market choices can have an impact on social capital and network relationships.
- Certainly time is a very influential factor on internationalisation. Nevertheless very few studies have examined the importance of time and the evolution of

INVs diachronically. With reference to the previous limited unexplored area, it is necessary to conduct temporal research on the evolution of INVs (e.g. Zahra, 2005; Coviello, 2005; Jones and Coviello, 2005). This study attempts to capture the evolution of social capital and network relationships diachronically. Additionally, previous studies have mainly focused on the initial foreign market entry and few studies have examined post-entry modes. It is important, therefore, to understand and capture post-entry operations in foreign markets (Pedersen et al., 2002; Kontinen and Ojala, 2011a). Another area that has attracted the attention of scholars is the direct relationship of firms and their link with the network but the extant literature has failed to provide sufficient answers regarding post entry operations and networks in foreign markets (Hohenthal et al., 2014). This study attempts to understand how social capital and network relationships affect internationalisation at different temporal stages.

Finally the research questions are defined and formed based on the previous discussion on existing gaps on the literature:

RQ1: What is the role of network relationships and social capital in high technology INVs early and late international market entries?

RQ2: How is the mechanism of structural dimension and network closure interrelated with the different roles of social capital and network relationships in the internationalisation process?

RQ3: How does social capital evolve over time? How does time affect the internationalisation process? How does social capital influence early and late foreign market entries?

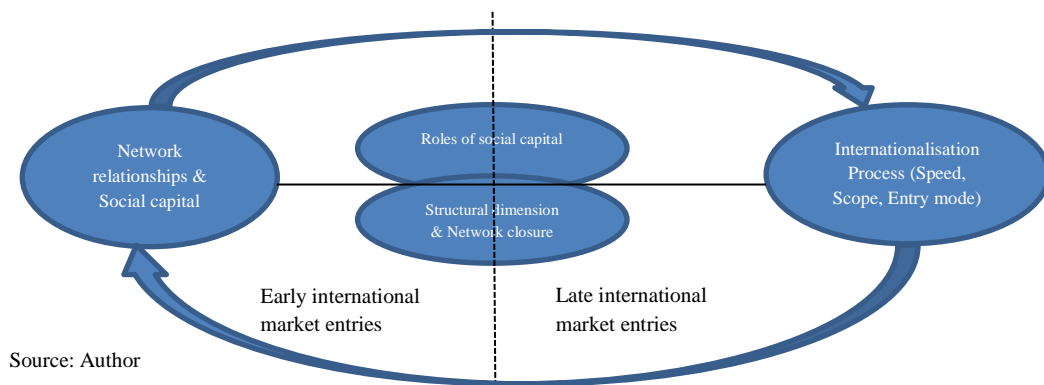
3.5 Conceptual framework

The models developed by Johanson and Mattsson (1987), Oviatt and McDougall (1994, 2005) and the propositions developed by Chetty and Agndal (2007) and Kontinen and Ojala (2011a) influenced the building of this study's conceptual framework (Figure 7). The three dimensions of social capital as suggested by Nahapiet and Ghoshal (1998) also assisted the design of the framework. The

suggestions of Adler and Kwon (2002) on the importance of social capital and its benefits and risks were taken into consideration when the framework was developed. In particular the framework attempts to introduce those notions in an international context that is characterised by high volatility. Additionally, the works of Granovetter (1973, 1985), Coleman (1988) and Hansen (1999) on network closure and Burt (1992,1997) on structural holes were considered when the model was designed. Finally, the study of Coviello and Munro (1995, 1997) on the internationalisation process of SMEs influenced this study's framework development.

The framework is developed based on the gaps in the extant literature as presented in the previous sections. The framework examines the role of network relationships and social capital in the internationalisation process. The proposed framework is tested empirically in this study.

Figure 7 Conceptual Framework



Source: Author

The contribution of this framework is that it offers a context free method to examine how structural dimension, network closure and the three roles of social capital influence the internationalisation process of high technology INVs. The framework can be also tested in emerging economies, and where we can compare if there are any differences between developed and developing countries. Moreover, the framework presents the internationalisation process in the context of: i) the role of strong and weak ties, ii) the different roles of social capital, and iii) changes over time.

The aspects of speed, geographic scope and entry mode can provide an explanation for the internationalisation output of high technology SMEs. These concepts can provide an explanation for how SMEs decide to internationalise their operations. These examined areas also provide an explanation how social capital and network relationships influence the internationalisation process. Entrepreneurs overcome the lack of resources with the use of knowledge derived by network relationships. It is argued that the role of network relationships and social capital are critical for early internationalising SMEs. However, their role is not so clearly defined and examined in the literature, especially how these change over time.

3.6 Summary

Analysing the extant literature in network and social capital theory the researcher was able to identify the gaps and justify his theoretical choices. Social capital theory is well rooted in sociology and as Adler and Kwon (2002) argued there are not any theories yet that can replace it or offer better explanations. This research uses social capital and more specifically its different roles in internationalisation of firms as introduced by Chetty and Agndal (2007) and Agndal et al. (2008) in order to better understand its role in the internationalisation of high technology INVs.

Keupp and Gassmann (2009) emphasised that IE lacks of definitional rigor and theoretical integration. They also identified that IE is mainly based on the observation of phenomena rather than of theories. Many questions related to how and why new ventures early internationalise their operations are unanswered. This study examines high technology INVs in the context of Greece and Scotland where both countries are small in size and their domestic markets push firms to become international players and export oriented. Additionally, understanding the nature of differences amongst the countries would help entrepreneurship research and would give some guidelines to policy makers (Busenitz et al., 2000).

Finally, the literature review chapter is crucial to position this study and justify the theoretical choices made. Moreover, this chapter assists us to clearly design the methodology chapter, which follows and is based on previous studies methodological choices. Additionally, the literature enables us to discuss the findings

of the empirical part of this thesis with the existing work in the selected theoretical fields.

Chapter 4 Methodology

4.1 Introduction

This chapter presents the research methodology used in this study to examine the internationalisation process of high technology small and medium sized firms. The research philosophy and approach are firstly discussed as well as the selection of the research methodology used in this study. The research design allows us to showcase and discuss the selection of the case study method, data collection and finally the data analysis techniques used in this study. The chapter concludes with a brief background information and profile of the selected companies.

The structure of this chapter is as follows. The first section begins with the research philosophy and approach in this study. The second section describes the research design of this study. The third section presents the case study firms. The last section summarises the research methodology.

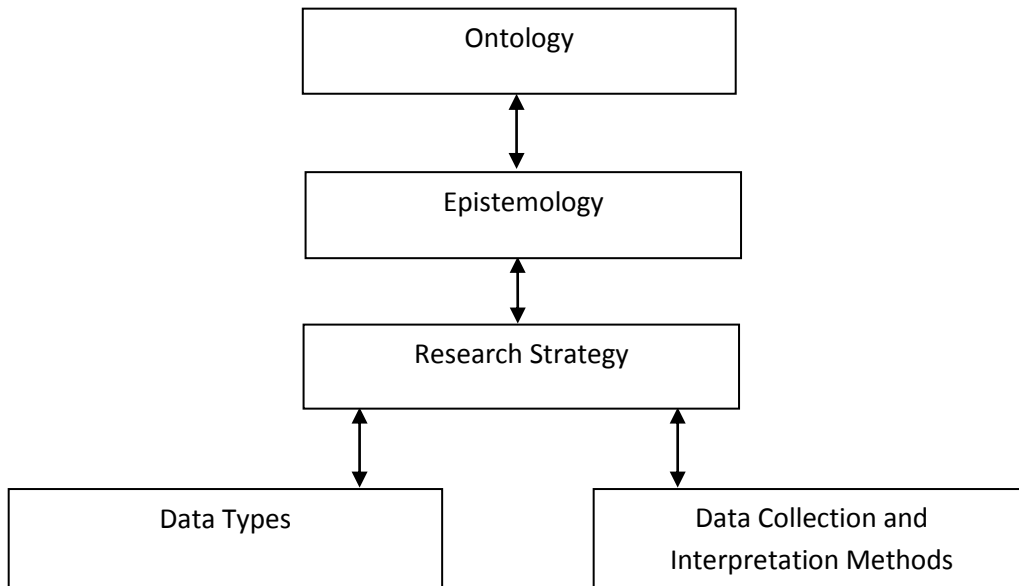
4.2 Research philosophy and approach

This research adopts a qualitative approach to investigate the role of network relationships and social capital on the internationalisation process of high technology INVs, whereby the philosophical assumptions are that the phenomena being researched are subjective, rather than objective (Easterby-Smith et al., 1991). Qualitative research is defined as “an array of interpretative techniques which seek to describe, decode, translate and otherwise come to terms with the meaning, not frequency of certain...phenomena in the social world”, Van Maanen (1983:9).

Andersen and Skaates (2004:469) argued that the choice of research strategy is influenced by the “researcher’s general epistemological viewpoint, which in turn is influenced by the researcher’s general ontological beliefs”. This research is influenced by the researcher’s viewpoint about the reality. For example, the researcher believes that network relationships and social capital of Scottish

entrepreneurs are more developed compared to those of Greek entrepreneurs. Figure 8 depicts the order of the ontology, epistemology and research components as suggested by Andersen and Skaates (2004).

Figure 8 Ontology, epistemology and research process components



Source: Andersen and Skaates (2004:470)

International Entrepreneurship is a new domain of research and as mentioned in the literature review chapter it has been criticised that lacks of a robust theoretical framework (e.g. Keupp and Gassmann, 2009). Those issues exacerbate the design of this research. Identifying how network relationships and social capital influence the internationalisation of high tech INVs in different environments and cultures is complex.

Inductive vs Deductive

According to Di Stefano et al. (2010) it is crucial to identify in an early stage how the research domain is taking form. Observing the new forms assists researchers to well understand where they can contribute and add value to future research. However, Di Stefano et al. (2010:1188) found that: “Patterns can be hard to detect and even harder to decipher when a research domain is in its early stages of

development, when the domain is complex, and when it is rapidly changing”. The IE research domain has been changing dramatically since its inception because new theories and methodologies are used. Another criticism on research designs adopted in the IE field is their static nature, which cannot capture dynamic processes, and positivist in nature (Coviello and Jones, 2004). This study attempts to observe phenomena and processes over time, thus the positivist approach is more suitable. This study also follows the call of Coviello and Jones (2004) who stated that researchers in the IE field should apply methodologies with soundness and consciousness, in other words a study should not follow a methodological simplicity.

The inductive approach was adopted and not the deductive because this study aims to understand deep meanings of the observed phenomena (Miles and Huberman, 1994). Theory building using the induction approach takes place after data collection and is related to the context which the different events take place (Saunders et al., 2003). The developing ideas are inducted from the data which are associated with the literature. Opposite to the inductive approach the deductive approach helps theory building by developing hypotheses which are related to the literature, these hypotheses are tested (Saunders et al., 2003). Causal relationships and the measurement of variables are indicated by theory. The deductive approach assumes that the researcher is objective and does not affect or is affected by the examined subject. The results of this approach can be statistically generalised and replicated (Yin, 2009).

Qualitative vs Quantitative Methods

Case studies were used in order to observe possible similar patterns in the internationalisation process. The deductive research is more common with the use of quantitative methods and the inductive research with qualitative research (Bryman and Bell, 2007; Blaikie, 2010). This research adopts a qualitative approach therefore the inductive methods are followed to design the research methodology and analyse the results. Moreover, qualitative methods are very useful in terms of comprehending the meaning behind the numbers and do not require big datasets or samples. Additionally, the qualitative approach can offer a clear and comprehensive view of the context (Ghauri and Gronhaug, 2005; Sinkovics et al., 2008).

According to Faran and Wijnhoven (2011) research in the business science field is in general related to Popper's critical rationalism. In other words, most of the theories have been conducted in the business sciences by using quantitative methods. Nowadays, more and more researchers decide to use qualitative methods. This is happening because researchers take into consideration the human-component. Faran and Wijnhoven (2011) concluded that critical rationalism intends to assist researchers to access knowledge for their research.

Eisenhardt (1989b) highlighted that qualitative research and case study are terms which have been used as synonyms (e.g. Yin, 1981). She also added that there are three types of case study research, the first type is qualitative only, the second one involves quantitative data and the third one involves both (Yin, 1984). This study adopts the qualitative approach because the qualitative data has been proved very useful to understand in-depth why or why not emerging themes and emergent relationships stand. Eisenhardt (1989b:542) supported that "when a relationship is supported, the qualitative data often provide a good understanding of the dynamics underlying the relationship, that is, the "why" of what is happening".

This study adopts the positivistic tradition as described by Eisenhardt and Yin. The clear and specific guidelines and how methodology should be treated on the case study research were described in Eisenhardt's and Yin's work. Those methodological treatments were "prescriptive in nature" (Piekkari et al., 2008:570) and recommended specific approaches to design, data collection and analysis. This study is closer to Eisenhardt's methodological treatments because case studies are used in order to build theory in the management field. Additionally, building theory in this study is related to inductive theories and based on Eisenhardt and Graebner (2007:25) inductive theories are "bridges from rich qualitative evidence to mainstream deductive research". Theorising and how this is assisted by the observation of phenomena is described by Piekkari et al. (2008:571) "the focus of theorising is on tracing the causal processes that generate outcomes in specific contexts". It is necessary to follow a very clear structure and design logic as described by Yin (2003). Yin (2003) described the design logic of the case study as a blueprint. The blueprint is very important because it attaches the study in the extant literature, defines the research questions, unit of analysis and in some circumstances

it may incorporate the “a priori specification of constructs” (Eisenhardt 1989b:536) prior to the beginning of the fieldwork.

Bryman and Bell (2007) argued that quantitative research is more suitable to check thoroughly macro-phenomena and qualitative research is more applicable to micro-phenomena. For the purpose of this research the researcher decided that it would be more appropriate to use the qualitative approach in order to capture the influence of micro-phenomena such as the role of network relationships and social capital in the internationalisation of high tech INVs.

In addition, Creswell (2003) explained that quantitative research is not able to present and understand the connection between the observed subjects-people and the environment. Moreover, quantitative research does not highlight the voices of participants (Creswell, 2003:35). Furthermore, according to Creswell (2003) quantitative research does not take into consideration the background of the researcher and his/her personal biases and understanding about the world. Qualitative research assists to overcome these obstacles. On the other hand, qualitative research lacks of objectivity because the researcher has a certain perception for the world. Moreover, the findings are not so easily generalizable to a bigger group. Additionally, based on the objectives of our research, which are related to firm behaviour understanding and not explaining it quantitatively (Jack, 2005), qualitative method is the most relevant and appropriate for the purpose of this study. This choice is supported by the review paper of Birkinshaw et al. (2011:573) who highlighted that the field of International Business “was founded on a rich qualitative research legacy (e.g. Prahalad, 1975; Johanson and Vahlne, 1977; Bartlett, 1979)”.

4.3 Research Design

This part of the methodology chapter presents the choice of the research setting and explains why the case study approach was chosen. The research design is paramount in order to better comprehend the structure of this thesis. Additionally, it enhances the credibility and robustness of the results. This part is also presenting the sampling strategy and how the data were collected and analysed.

4.3.1 Background Scotland and Greece

The choice of Scotland and Greece was based on a number of factors from previous research. Coviello and Jones (2004) in their review paper found that most of IE studies have focused on single countries and more specifically in the U.S., UK and Canada. There have been few studies on Scotland and Greece in the IE field, therefore it is important to examine high tech INVs from these two countries as they offer a very interesting setting. Additionally, data collected from more than one country could increase validity, avert alternative explanations and strengthen the generalizability of the results (Malhotra et al., 1996; Sin et al., 1999).

The characteristics of these two countries are similar. Both countries are open economies and small in size. However, the level of development is different, where Scotland is a more developed and more export-orientated country. On the other hand, in Greece technology companies are limited in number. Another difference between the countries is that Scotland offers a friendly ecosystem to high technology firms, whereas, in Greece the high technology ecosystem is almost absent. Additionally, SMEs are the backbone of both economies. SMEs' contribution to both countries GDP is very high. Table 6 presents their importance in the Scottish and Greek economies.

Table 6 Number of SMEs in Scotland and Greece and other economic indicators

	Number of firms	Number of employees	Value added (Billion €)
Total SMEs (Greece)	531,437	1,426,840	33.722
Total SMEs (Scotland)	340,840	1,100,000	18.9

Source: The Scottish Government, European Commission

SMEs play a crucial role in the Greek and Scottish economies with SMEs accounting more than 99% (European Commission, 2014) and 99.3% (Scottish Government, 2014) respectively.

The Greek economy has been facing many challenges the last few years due to the recent economic recession. On the other hand the Scottish economy has been more stable the last few years. The challenges that the Greek SMEs face have pushed them to become more export orientated. Additionally, the high technology sector in Greece is not so developed compared to Scotland. In Greece there are very few high

technology clusters, which are mainly located in Athens, Thessaloniki, Patras and Crete. All these clusters are close to Technical Universities (Corralia Cluster, 2014). On the other hand, there is a big number of high technology clusters in Scotland. The biggest ones are located between Edinburgh and Glasgow (Royal Society of Edinburgh, 2014). For all the above reasons Scotland and Greece were chosen for this study as they offer a unique context to research.

4.3.2 The case study method

This study adopts a case study approach. This study also follows the guidelines of Eisenhardt (1989b:534) who highlighted that “the case study is a research strategy which focuses on understanding the dynamics present within single settings”. This study examines phenomena in an international context and attempts to understand in-depth how those are influenced by network relationships and social capital. Eisenhardt (1989b) developed a table with 8 necessary steps for building theory from case study research based on the previous work of Miles and Huberman (1984), Yin (1981) and Glaser and Strauss (1967). This study followed the steps as described in Table 7 in order to better design the research strategy.

Table 7 Necessary steps for building theory from case study research

Step	Activity	Reason
Getting started	Definition of research question	Focuses efforts
	Possible a priori constructs	Provides better grounding of construct measures
	Neither theory nor hypotheses	Retains theoretical flexibility
Selecting cases	Specified population	Constrains extraneous variation and sharpens external validity
	Theoretical, not random sampling	Focuses efforts on theoretically useful cases – i.e. those that replicate or extend theory by filling conceptual categories
Crafting instruments and Protocols	Multiple data collection methods	Strengthens grounding of theory by triangulation of evidence
	Qualitative and quantitative data combined	Synergistic view of evidence
	Multiple investigators	Fosters divergent perspectives and strengthens grounding
Entering the field	Overlap data collection and analysis, including field notes Flexible and opportunistic data collection methods	Speeds analyses and reveals helpful adjustments to data collection Allows investigators to take advantage of emergent themes and unique case feature
Analysing data	Within-case analysis	Gains familiarity with data and preliminary theory generation

	Cross-case pattern search using divergent techniques	Forces investigators to look beyond initial impressions and see evidence thru multiple lenses
Shaping hypotheses	Iterative tabulation of evidence for each construct Replication, not sampling, logic across cases Search evidence for “why” behind relationships	Sharpens construct definition, validity and measurability Confirms, extends, and sharpens theory Builds internal validity, raises theoretical level, and sharpens theory
Enfolding literature	Comparison with conflicting literature Comparison with similar literature	Builds internal validity, raises theoretical level, and sharpens construct definitions Sharpens generalizability, improves construct definition, and raises theoretical level
Reaching closure	Theoretical saturation when possible	Ends process when marginal improvement become small

Source: Eisenhardt (1989b:533)

The methodological choices of IB researchers were criticised by Poulis et al. (2014) on their review paper. They argued that a number of IB researchers have misinterpreted the suggestions of the case study research authorities Yin and Eisenhardt. Additionally, they found that IB researchers dogmatically follow linearly the eight steps as described by Eisenhardt (1989b) as opposed to “intermingling stage 4 (entering the field) with the case-selection processes at stage 2 (thus, step 4 informing 2)” (Poulis et al., 2014:312). Our study does not dogmatically follow the eight steps as it stems from both the suggestions made by Yin (1994, 2009) and Eisenhardt (1989a, 1989b, 1991).

According to Hartley (1994:208-9) a case study is “a detailed investigation, often with data collected over a period of time, of one or more organisations, or groups within organisations, with a view to providing an analysis of the context and processes involved in the phenomenon under study”. Ghauri (2004) explained that case study is a valuable method especially when the proposed research area is not so developed and there are many unexplored areas. He also added that case studies can be related to epistemological positions and more specifically with phenomenological positions. Keupp and Gassmann (2009) argued that IE firstly appeared as phenomenological research. In other words, the majority of the IE literature is related to the examination of phenomena rather than theory. It is believed that the use of case studies for this research is important because IE is a new field of research and many aspects have remained unanswered and undiscovered.

Yin (1994) proposed that case studies approach should be adopted when the researcher tries to answer the why and how questions and when the researcher does not have control over the observed events. He added that researchers who focus on contemporary phenomena in real-life context should choose the case study approach. This study examines the internationalisation of high tech INVs, therefore, the researcher does not control nor influence the observed phenomena. Additionally, high technology firms and especially how their decision is influenced by network relationships and social capital is a contemporary topic. Moreover, the relationship between the observed phenomena and their context can be comprehended by examining their interaction, case studies are the most efficient approach to better explain those relationships (Dubois and Gadde, 2002).

This research examines, as mentioned previously, nine case studies in Scotland and Greece. The purpose of this research is to answer the why and how questions about the internationalisation of high tech INVs. These case studies help the researcher to understand in-depth the observed phenomena in a diachronic approach as described by Ghauri and Gronhaug (2002). Pauwels and Matthyssens (2004) argued that a bigger number of case studies could increase the objectivity of the research and minimise the gap between the researcher and the researched.

4.3.2.1 Multiple case studies

This study uses multiple case design which allows a replication logic, this means that the multiple cases are regarded as multiple experiments, thus each case affirms or confutes the obstruction concluded from the others (Yin, 1984). Eisenhardt (1989b) argued that there is not an ideal number of cases. She suggested that the optimum is between 4 and 10 cases. If the number of cases is fewer than 4 then it is difficult for the researcher to build theory and the empirical grounding would be not convincing. On the other hand, more than 10 cases can increase the complexity of data interpretation. Eisenhardt (1991:622) best described the ongoing debate between methodologists on the number of cases “a debate over numbers obscures an essential point. The concern is not whether two cases are better than one or four better than three. Rather the appropriate number of cases depends upon how

much is known and how much new information is likely to be learned from incremental cases”.

The debate on case studies and the optimum number has been stressed from various authors (e.g. Piekkari et al., 2008) this debate is related to the pursuit of replication logic and if it can be achieved with a single or multiple cases. In this study nine cases were chosen from Scotland and Greece following the guidelines and suggestions of the case study authorities (i.e. Eisenhardt and Yin). This study does not pursue a statistical generalisation of the results but an analytical generalisation. Nine cases were chosen because this number allows this study to enhance the robustness of its findings and replicating them across cases.

4.3.2.2 Unit of analysis

In this study the main trend is followed, which is the firm as the dominant unit of analysis in the IE field (Coviello and Jones, 2004). The IE research is dominated by micro level analysis (e.g. Davidson and Wiklund, 2001), this study also examines phenomena at the firm level such as network relationships and social capital and how these influence the internationalisation process of high technology INVs. Leonidou and Katsikeas (1996) also found that the firm level analysis has been the most frequent choice in their review paper. However, this study responds to the call of Coviello and Jones (2004) who stressed the importance of collecting significant and in-depth data related to complex networks diachronically. Additionally, our unit of analysis encompasses internationalisation events and how those were influenced by social capital and network relationships.

This study collected in-depth data and tried to see how network closure and structural dimension affect the internationalisation of high tech INVs over time by examining not only the first market entry but multiple market entries and post entry operations. All these mechanisms were examined at the firm level.

4.4 Process vs Variance approach

This study attempts to capture changes over time. The process research is the most suitable in order to answer the research questions. It is important to highlight

that internationalisation process is not linear but can be cyclical, abstract and discontinuous (Sharma and Blomsterno, 2003; Welch and Paavilainen-Mantymaki, 2014). Additionally, time is subjective and can be examined and studied based on different philosophical assumptions and the different methodologies that the research chooses (Welch and Paavilainen-Mantymaki, 2014). Pettigrew (1997:338) suggested that is “the what, why and how of some sequence of individual and collective action” that researchers should examine in order to study process. The main difference between the variance and process approaches is the type of questions they attempt to answer. The variance approaches try to answer the “what” questions regarding the antecedents and outcomes of an issue, on the other hand the process is trying to conceptualise how a particular phenomenon X can lead to phenomenon Y (Welch and Paavilainen-Mantymaki, 2014). Table 8 presents the commonalities and differences of variance and process research. Based on this table the choice to follow the process research is justified.

Table 8 Features of variance and process research

Feature	Variance approaches	Process approaches	This Study
Explanatory purpose	“What are the antecedents or consequences of this issue?”	“How does the issue emerge develop, grow or terminate over time?”	Evolution of social capital and network relationships over time
Unit of analysis	Variable	Event	Firm & Internationalisation events
Philosophical assumptions	Positivist	Positivist or non-positivist	Positivist
Preferred methodologies	Quantitative, e.g. regression model	Longitudinal quantitative techniques (e.g. panel data models, event history analysis), narrative analysis, longitudinal case study, mixed methods	Qualitative, semi-structure interviews, retrospective interviews, cohort analysis
Conceptualisation of time	Homogeneous, measurable unit	Intersubjective construction	Intersubjective construction
Advantages	Allow for parsimonious and predictive theories about the relationships between variables	Allow for complex, non-linear explanations as to how and why sequences of events occur	Explain non-linear international market entries and the evolution of social capital
Disadvantages	A process is deduced based on a measurement of two points of analysis/time	Difficulties in going beyond describing patterns to theorising about “how” and “why”	Observed temporal sequences to build theory

Source: Adapted from Welch and Paavilainen-Mantymaki (2014:4)

This study examines the evolution of social capital, structural dimension and network closure over time and how those influence the internationalisation of high tech INVs. The how question: following the process approach it can be better captured how social capital evolves over time. Welch and Paavilainen-Mantymaki (2014) suggested those researchers who decide to use qualitative methods, the choice of case study is the most appropriate because retrospective and real-time insights can

be observed and captured. Moreover, the narrative analysis can be very helpful for process studies.

This study describes the internationalisation process and how social capital and network relationships can influence it. Case studies are a powerful tool to examine processes. The design of this study allowed the researcher to observe internationalisation events over time instead of a snapshot of a process and understand how and why things occur as they do; it also assists to evaluate causality in a particular setting (Miles and Huberman, 1994). Table 9 depicts the different combinations of temporal research and data perspectives (Blazejewski, 2011:257).

Table 9 Combinations of temporal research and data perspectives

		Research Perspective	
		Simultaneous	Expost
Data perspective	Real Time	e.g. 'classical' ethnographic field study, participant observation, repeated interviews	e.g. recorded interviews, emails or meeting notes produced at the time of events under study
	Retrospective	e.g. documents and narratives about previous events which relate to the events under study	e.g. annual reports, historical accounts, retrospective interviewing

Source: Blazejewski, 2011

Retrospective vs Longitudinal Studies

Bryman and Bell (2007) suggested that researchers can use retrospective interviewing in order to add a longitudinal aspect. In order to collect data managers and founders of high tech SMEs were interviewed; they were asked about decisions in the past and how those influenced the internationalisation process of their companies.

For the purpose of this research the researcher believes that it is important to use a cohort analysis. A cohort analysis examines people with the same characteristics instead of observing the same people over time (Blaikie, 2010). Cohort analysis is not so complex to conduct, however, its results are weaker compared to other longitudinal methods (Blaikie, 2010). Another disadvantage of this method is the reliability of the results because it does not keep a sufficient track

of people (Blaikie, 2010).

Blaikie (2010) defined historical studies those which analyse phenomena in the past. The nature of this research cannot follow the historical analysis because the examined phenomena will be related to certain internationalisation events which have been influencing the internationalisation of high tech SMEs. Moreover, Blaikie (2010) discussed about retrospective studies which have a starting point in the present and search for information related to later history. According to Blaikie (2010:202) this method have the following disadvantages: “There are clearly some limitations to this kind of research as memory is fallible and its use always involves a possible reconstruction of the past under the influence of subsequent experiences”.

4.5 Sampling strategy

In this study the case study is purposive and not random (Miles and Huberman, 1994). Stake (1995) emphasised the importance of selecting a case that can augment and maximise our learning. According to the same author “case study research is not sampling research. We do not study a particular case to understand another case. Our first obligation is to understand this one case” (Stake, 1995:4). This study also followed a theoretical sampling, which according to Suddaby (2006) the collected data is driven by the theory in progress. Eisenhardt and Graebner (2007:27) argued that when “the purpose of the research is to develop theory, not to test it, and so theoretical (not random or stratified) sampling is appropriate. Theoretical sampling simply means that cases are selected because they are particular suitable for illuminated and extending relationships and logic among constructs”. Moreover, including more cases to a study can enhance their analytical power (Eisenhardt and Graebner, 2007) and can offer stronger base for theory building (Yin, 1994, 2009). In addition to the previous point Eisenhardt (1989b) argued that case studies can assist theory building if cases are selected rigorously. Table 10 presents the different typology of sampling strategies in qualitative research.

This study used mainly a homogeneous sampling in order to simplify and facilitate the selected group for the conducted interviews. Additionally, the sample was theoretical driven as described previously. The researcher also included the

intensity in his sampling strategy because all the cases are information rich. Finally, the select cases had to meet similar criteria. The criteria are described later in this section.

Table 10 Typology of Sampling Strategies in Qualitative Inquiry

Type of Sampling	Purpose
Homogeneous	Focuses, reduces, simplifies, facilitates group interviewing
Critical case	Permits logical generalisation and maximum application of information to other cases
Intensity	Information-rich cases that manifest the phenomenon intensely, but not extremely
Criterion	All cases that meet some criterion; useful for qualitative assurance

Source: Adapted from Miles and Huberman (1994)

As mentioned earlier this study uses multiple cases so the sampling process had to follow the researcher’s decision, therefore the choice of cases followed conceptual grounds and not representative grounds (Miles and Huberman, 1994:29). The selected cases should have some common characteristics (e.g. early internationalisers, sector of activities) otherwise the cross-case comparisons would become impossible. Miles and Huberman (1994) suggested that the sampling frame should use four parameters: setting, actors, events and processes. Table 11 highlights what sampling parameters were taken into consideration, which is related to the focus of the study and this study’s research objectives.

Table 11 Sampling parameters and choices of the study

Sampling parameters	Choices
Settings	High Technology International New Ventures
Actors	Founders and CEOs
Events	First international market entry, later international market entries, post entry operations
Processes	Internationalisation, roles of social capital, network closure, structural dimension

Source: Adapted from Miles and Huberman (1994)

The definitions of Oviatt and McDougall (1994, 1997, 2005) were followed to identify International New Ventures. The criteria to select the companies were the

following: i) year of first international market entry (no more than 6 years of the firm's inception); ii) foreign sales (more than 30%); iii) the company should not be a spin-off of a big multinational; iv) the firm should operate in the high technology sector; v) the firm should not employ more than 250 employees. We used the five criteria to ensure a balanced sample and characteristics of the firms. In order to identify the cases the researcher interviewed industry experts, searched on associations and clusters' websites. Additionally, the researcher used his personal network to access companies.

The first criterion referred to the year that the first internationalisation event took place. A number of authors described that the internationalisation should occur within the first six years (e.g. McDougall et al., 1994; Oviatt and McDougall, 1994, 1997, 2005; Zahra et al., 2000).

The second criterion consisted of the percentage of foreign sales. Many authors suggested that an INV should have 25% to 30% of sales coming from international operations (e.g. Oviatt and McDougall, 1994, 2005; Zahra et al., 2000; Knight and Cavusgil, 2004; Kuivalainen et al., 2007; Gabrielson et al., 2008). Some scholars added that firms need time to get access to markets and develop their products before generate results from international markets (e.g. Zahra et al., 2000).

The third criterion was related to the firm's ownership structure. Firms that were spin-offs of big multinationals and well established firms were excluded. The suggestions of previous studies that spin-offs of established firms should not be perceived as INVs (e.g. Gabrielsson et al., 2008) were followed.

The fourth criterion concerned the industry sector. The researcher selected high technology INVs because the internationalisation process and the use of social capital can be easily observed to this type of firms. The researcher decided to focus on a specific industry group because he could control the industry variation and demand conditions that can actually have an impact on the internationalisation process (Reuber and Fischer, 1997). The high technology sector was chosen because the business environment rapidly changes and small, entrepreneurial firms are very common. High technology INVs have a narrow market focus so the markets of Scotland and Greece are very limited and small, thus the firms internationalise in many countries to sustain their growth and to survive. Furthermore, previous studies

examined and focused on the high technology sector (e.g. Bell, 1995; Coviello and Munro, 1995; Reuber and Fischer, 1997, 2002, 2011; Jones, 1999; Burgel and Murray, 2000; Ojala, 2009; Fischer and Reuber, 2011), thus previous studies offer material and findings for comparison.

The fifth criterion was related to the size of the firm. The selected firms could not employ more than 250 employees, the European Commission's (European Commission, 2013) definition of SMEs was followed. Chetty and Agndal (2007) argued that social capital can be better observed in the context of SMEs as the structure and size of these firms allow observing this phenomenon (i.e. social capital) transparently.

Various websites and the personal network of the researcher were used in order to identify cases that could offer a better insight and answers to the research questions. There was also a theoretical sampling based on Eisenhardt and Graebner's (2007) guidelines. The population of the cases was identified based on the criteria presented earlier. The final sample was based on companies that met all the sampling criteria and firms that accepted to participate in this research. The sample size included 9 cases because the researcher reached theoretical saturation according to Eisenhardt's (1989b) guidelines.

The researcher also decided to look a contrasting case, following Eisenhardt (1989a) and Miles and Huberman (1994) who stressed the importance to use a polar type case, in which the firm has only domestic sales but it is about to internationalise its operations. By understanding and looking a contrasting case we can then comprehend the findings in a single-case (Miles and Huberman, 1994). In other words, the researcher wanted to examine and understand if network relationships and social capital play the same role in the pro-internationalisation phase. Additionally, the researcher selected cases where the level of international sales and size of the firm were different in order to increase the precision, validity and stability of the findings (Miles and Huberman, 1994:29).

It was sought to understand how the internationalisation process of the examined firms can vary. The three aspects related to the internationalisation process (i.e. speed of internationalisation, geographic scope and entry mode) are key decisions in the internationalisation of a firm. This study wanted to observe and

examine the mechanism of strong and weak ties and social capital of the case firms regarding the internationalisation process. Table 12 summarises the selected cases with respect the five sample selection criteria that were presented earlier. This study's results cannot be generalise to the population because this is not permitted in a purposive sample, however the generalizability of the results can be enhanced by including a variety of cases (Miles and Huberman, 1994).

Table 12 Firms selection criteria and the selected firms

Cases	Case A	Case B	Case C	Case D	Case E	Case F	Case G	Case H	Case I
Year of first international market entry	2000 (from inception)	2000 (from inception)	2011 (from inception)	2009 (two years after inception)	2010 (one year after inception)	1997 (from inception)	2003 (two years after inception)	2009 (inception year)	2002 (from inception)
% of foreign sales	100%	38%	95%	80%	30%	90%	100%	100% domestic	70%
Spin-off company	No	No	No	No	No	No	No	No	No
Industry sector	High technology	High technology	High technology	High technology	High technology	High technology	High technology	High technology	High technology
Number of employees	50	70	20	15	11	4	16	8	36

Source: Author

4.6 Data collection

The research questions examine the role of network relationships and social capital in the internationalisation process of high technology INVs and the evolution of social capital over time. For this reason an explanatory qualitative research method is selected which is based on face-to-face in-depth elite interviewing. It is important to highlight that the choice of the research method depends on the context where the research took place and the ontological character of the research question (Marschan-Piekkari and Welch, 2004). There are a number of arguments which explain why qualitative research method and elite interviewing can describe better the purpose of this study than other research methods. According to Yang et al.'s (2006) review paper only 9.9% of their papers sample in International Business used personal interviews. In other words, this is a fruitful method to be used in future studies. On the other hand, the same authors showed that 60.3% of their sample used a survey method to collect their data.

The major advantage of qualitative interviewing compared to quantitative research instruments and surveys is the absence of cultural bias and ethnocentric assumptions (Marschan-Piekkari and Welch, 2004). Qualitative interviewing is a method that concentrates on the exploration of possible new meanings and the observation and understanding of people's behavior and values (Rubin and Rubin, 1995; Bryman and Bell, 2007). Another advantage of qualitative interviewing is the access to valuable data and information which is not recorded and available in the public (Richards, 1996). A benefit offered by face-to-face interviews consists on the better suitability compared to telephone interviews and post surveys because this method can answer the same set of questions but the interviewer can ask the interviewee to clarify a response and ask questions not included in the questionnaire (Healey and Rawlinson, 1993).

Furthermore, it is more preferable to use the interview instrument than surveys because business executives would rather prefer to share their views and analysis in various business issues instead of filling out a survey and answer questions from different categories (Healey and Rawlinson, 1993).

The researcher took into consideration financial issues and time constraints

when collecting the data (Ghauri, 2004). This research involved interviewing managers and founders of high tech INVs in Scotland and Greece. It was important to well prepare the trip and find companies before the arrival in Greece.

The data collection stopped when concurrence appeared in the information collected. This proposed that the different roles of social capital and the mechanism of strong and weak ties had been captured.

Choice of informants: Corporate Elites

The choice of informants (i.e. the choice of actors) was related and driven by conceptual questions and not by their “representativeness” (Miles and Huberman, 1994:29). The best approach to limit interview data bias is to choose informants who view from different angles and perspectives the observed phenomena (Eisenhardt and Graebner, 2007). Interviewing business executives is more appropriate and comes in accordance with the objectives of this research. As already mentioned this study is examining the role of social capital and network relationships in the internationalisation process. The internationalisation process of the firms is part of the IB theory. According to the IB theory the elite groups in business include the business executives such as the top managers, company founders and of course CEOs (Welch et al., 2002). These people have better knowledge, talent and experience compared to middle and lower managers (Welch et al., 2002). Business executives are people who decide about the expansion of companies. The interviewees were founders or CEOs who could give more accurate information. In addition, the selected informants were involved in the decision making process and were in charge of the internationalisation of their firms.

Furthermore, according to Eisenhardt (1989a:547) “research has indicated high temporal stability in executives’ recollection of important decisions, especially for major recent decisions”. In other words the selection of CEOs and founders of firms as informants was based on their ability to recollect events and their involvement to the internationalisation of their firms. The business executives are the people who decide how a decision is made and they also orchestrate their networks and social capital to assist them to enter foreign markets. The main difference between top managers and their inferiors is that middle and lower managers have to

follow the decisions made by their superiors. Additionally, middle and lower managers are more conserved to express their opinion freely. For all the aforementioned reasons and to minimise these issues it was decided to use business elite as informants.

Access to the company and recruitment of the business executives

It is a quite difficult and challenging process to gain access and select the appropriate number of informants; this problem becomes more crucial if the researcher does not have any personal contacts in the business world and more especially to business executives (Welch et al., 2002; Harvey, 2010). When selecting the business executives informants it was necessary to identify those executives who take decisions to internationalise the operations of the company.

Two approaches were used to come in contact with business executives in the selected firms. The researcher had to send cold emails to possible case firms. Additionally, the researcher used his personal network to get introduced to firms and get access.

The location, time and number of the interviews

All the interviews were carried out by the researcher. According to Harvey (2010) the place of the interview is possible to have an impact on the type of information the business executives will disclose as well as their degree of openness. Moreover, Harvey (2010) states that the interviews which take place in the workplace of the business executive might influence the willingness of the interviewee to reveal information or the time spend with the interviewer. Another important finding from Harvey (2010) is that interruptions from family or colleagues occur often in business executives' home or workplace respectively. However, Harvey (2010) suggests a "neutral" place for an interview, the interviews took place in the workplace of CEOs and founders. The face-to-face interviews in Greece took place from June 2013 to end of May 2014. The interviews in Scotland took place from May 2013 to May 2014.

Moreover, due to time and financial constraints a number of interviews and

follow up interviews were conducted through Skype. For example two interviews with a Greek CEO were conducted via Skype because the CEO was in California visiting his company's headquarters.

Altogether, 25 interviews were conducted with founders and CEOs of Scottish and Greek high technology INVs. They were one or two informants from each company. The interviews lasted from 45 minutes to one hour and a half. Table 13 shows the main source of information (i.e. interviews) and secondary data.

Table 13 Sources of information from each case firm

Case	Number of interviews	Websites	Annual reports	Marketing brochures
Firm A	3	✓	✓	✓
Firm B	3	✓	✓	✓
Firm C	3	✓	✓	✓
Firm D	2	✓	✓	✓
Firm E	3	✓	✓	✓
Firm F	3	✓	✓	✓
Firm G	3	✓	✓	✓
Firm H	3	✓	✓	✓
Firm I	2	✓	✓	✓

Interview Instrument

Interviews are one of the best choices to gather rich and empirical data (Eisenhardt and Graebner, 2007). A way to minimise bias is the combination of retrospective and real-time cases. Retrospective cases concern interviews and archival data and are related to how in-depth are the cases in order to allow the researcher to include more informants and cases. When the researcher focuses on recent events then those interviews can be proved very accurate. On the other hand, real-time cases are related to longitudinal data collection (Eisenhardt and Graebner, 2007). In this study data were not collected longitudinally due to time and financial constraints. However, the events that the informants were asked were rather recent.

For the purpose of this study a semi-structured interview guide was used during the interviews (please see Appendix one for more details). The interview guide was important for the researcher because it was used to assure that the research questions can be covered from this guide (Daniels and Cannice, 2004). The interview guide is also very important because the research was concentrated on the questions

which were essential for the study and irrelevant questions were avoided (Daniels and Cannice, 2004). Daniels and Cannine (2004) said that another crucial aspect of the interview guide is its use as a framework which facilitates the comparison of interviewees' responses.

The role of the researcher

The role of the interviewer is very important to the interview process. Ghauri et al. (2002) described all the necessary values that a researcher should follow in order to enhance validity of the received information, these values are: a good listener and comprehend the meaning of what is said. The researcher before each interview did a background research on the companies, the internet was the most common medium to search the history of each company. The researcher designed the semi-structured interview questionnaire and schedule beforehand the interviews, this allowed the researcher to prepare and ask the correct questions, control the situation and adapt his strategy to new and unpredicted conditions and finally to develop trust between him and the interviewees (Ghauri et al., 2002).

Questions related to personal experience of the CEOs and founders of high technology INVs were asked in order to secure reliability. The quality of the research can be affected by the quality of the collected data, the researcher ensured to include questions and design the interview schedule in order to be related and relevant to the interviewees (Easterby-Smith et al., 1991). Additionally, the researcher emphasised to the interviewees that their opinions and experiences were paramount for this study. Moreover, the researcher guaranteed the interviewees that their responses were confidential and that this study would retain their anonymity. Easterby-Smith et al. (1991) highlighted that suitable language can establish trust between the interviewer and the interviewee. The researcher carefully chose the appropriate language that could be understood from the firms and avoided all the jargon and terminologies used in academia. The researcher did not use leading questions and included open-ended questions in order to minimise interview bias. The reasons for those choices are presented in the following section.

The form, content and order of questioning and the use of prompts

Building trust and mutual understanding between the interviewer and the interviewee is very important in order to conduct successful interviews (Healey and Rawlinson, 1993; Arksey and Knight, 1999). The researcher thanked and expressed his gratitude to the interviewees for accepting to participate into the study. In addition, the researcher emphasised that all the information would be treated as confidential. The purpose of the study was reminded to the interviewees.

The researcher started the interview by asking general information about the company. The purpose of those questions was to relax and make the interviewee feel more comfortable. The majority of the questions were open-ended in order to allow the founders and CEOs to express their opinion. In order to gain interviewees' trust general questions were asked (Svendsen, 2006). The first questions asked were related to business description. The questions were not nonleading in order to follow Yin's (1994) guidelines. Questions included: the reasons for going abroad, the network relationships used in the internationalisation process, and how social capital helped or hindered the firms to go abroad. Forming questions in a nonleading way encouraged CEOs and founders of the participating SMEs to be open and give original answers. Part of the questionnaire included questions concerning past events, for this reason Miller's et al. (1997) and Huber and Power's (1985) guidelines for retrospective studies were followed.

The questionnaire was designed in such a way in order to collect data to answer the two research questions presented previously. The questionnaire was divided into different categories (please see the questionnaire in Appendix one for more details). Those categories were necessary in order to answer the three research questions of this study. Some of the interviewees' responses were quite short and not so informative; for this reason the interviewer used some probes to encourage the interviewees to elaborate their responses like "Could you please elaborate this?". Additionally, this study followed the "courtroom procedure" to ask the informants to describe events not only based on their interpretation but also based on facts and events (Eisenhardt, 1989a:547).

Collecting data during the interviews and post interview rules

At the beginning of each interview the researcher kindly asked the interviewees if they agree to record the interviews with a digital voice recorder. All the interviewees agreed with the use of the digital recorder during the interview. All the interviewees spoke slowly so to give sufficient time to the interviewer to take notes. According to Bryman and Bell (2007) an advantage from taking notes is the silence gap between the writing and the next question; between this gap the interviewee has the chance to remember to include something important to his/her answer.

The researcher also followed the “24-hour” rule as described by Eisenhardt (1989a) so all the interview notes and first ideas and impressions had to be finished a day after the interview. Moreover, the researcher added all the data collected during the interview whether the information seemed important or not. Finally, notes were taken at the end of each interview concerning the first impressions (Eisenhardt, 1989a).

Other sources of data

The data did not rely on a single source of information (e.g. Sinkovics et al., 2008; Yin, 2009) because the researcher wanted to increase the construct validity of this study. Archival data were collected and used during the interviews to assist interviewees’ recollection on past events. Additionally, online articles and press releases were collected on each case firm. Moreover, marketing brochures and the firms’ websites were checked in order to acquire illustrative information on the case firms.

Conducting interviews in different language

It is important to highlight that the language plays a very crucial role in interviews. The language which an interview is conducted can influence the whole interview process and restrains the validity and accuracy of the acquired data (Marschan-Piekkari and Reis, 2004). In addition the interviews in Greece were conducted in Greek. The collected data from the interviews were translated into

English without changing the meaning and the analysis of the results. To increase the validity and the accuracy of the results the same questionnaire was used for all the interviewees.

4.7 Analysis

The nine cases were analysed individually in order to comprehend their complexities and originality. A researcher can build theory from case studies by analysing the collected data, however, this part is very demanding and difficult (Eisenhardt, 1989b). Miles and Huberman (1984:16) described the arduous process of analysing data “one cannot ordinarily follow how a researcher got from 3600 pages of field notes to the final conclusions, sprinkled with vivid quotes though they may be”. The analysis of the nine cases followed cross-experiment instead of a within-experiment design and logic. In other words, each case was analysed as an entity, as an “entire” study where facts and conclusions were sought in the observed evidence.

Eckhardt (2004:417) proposed that researchers should “see the world through the eyes of your respondents when analysing your data, and let your research output reflect their experiences”. This suggestion was followed when the data were analysed as the purpose of this study is to understand how firms and entrepreneurs are influenced by the different roles of social capital.

The researcher also used NVivo for analysing the data following the call of Sinkovics et al. (2008) to use software tools that can increase the trustworthiness of qualitative research. Additionally, direct quotes were used to support the findings and to illustrate the “underlying phenomena” which this study was attempting to examine and discuss (Sinkovics et al., 2008:695). This study followed Myles and Huberman’s (1994) axial coding where categories and concepts were used to the empirical data, the reason this study used an axial coding was to increase the depth in the categories. The categories included themes related to the efficacy role, the serendipity role and liability role of social capital, weak and strong ties. Keywords were used for coding to identify the efficacy role of social capital: “trust, old customers, friends, introduced, reference”. The coding to identify the serendipity role of social capital

included the following keywords: “unexpected, tradeshow, not planned, luck, internet”. The coding to identify the liability role of social capital included the following keywords: “decaying, terminate collaboration, low trust, not engaged”. This study did not follow such a detailed coding process as described in Sinkovics et al. (2008:705) because the researcher agrees with Bryman and Bell (2007) that the overuse of these software tools may minimise the researcher from yielding creative input.

Within-case analysis

Eisenhardt (1989b) stressed the importance of within-case analysis because the volume of data is very big. She also highlighted that “the volume of data is all the more daunting because the research problem is often open-ended” (Eisenhardt, 1989b:540). Managing the flood of big data can be achieved by within-case analysis.

The interview transcripts generated more than 350 pages so within-case analysis was necessary in order to categorise the different themes and understand how social capital and network relationships influence the internationalisation process of high technology INVs. Additionally, the mechanism of strong and weak ties was examined and analysed in the different internationalisation events that the interviewees described. The evolution of social capital was captured by dividing the entrance in foreign markets in initial and later international market entries. All the international events and the impact of social capital, structural dimension and network closure were illustrated in a figure for each case. All the information was presented in-details and was primarily descriptive following Eisenhardt’s suggestions (1989b:540) “within-case analysis typically involves detailed case study write-ups for each site. These write-ups are often simply pure descriptions”. The researcher should become familiar with each individual case and examine and analyse each case as “stand-alone entity”. Following this process assists the researcher to identify the transpired distinctive characteristics of each case before the researcher is able to generalise cross-case patterns. Finally the within-case analysis can speed up the cross-case comparison (Eisenhardt, 1989b).

The analysis method that this study adopted was very useful to provide the researcher with preliminary conclusions about the different relationships in each

individual case. The more in-depth analysis helped to better explain the phenomena and the reasons for “why things are happening as they are” (Miles and Huberman, 1994:90). It was important to understand first the relationship between social capital and the mechanism of structural dimension and network closure and how those are interrelated. Miles and Huberman (1994) described this as a progression from describing to explain.

Cross-case analysis

The data analysis progressed from the within-case analysis to searching for cross-case patterns (Eisenhardt, 1989b). This process allows the researcher to understand the unique patterns that emerge from each case and generalise them across the cases. The data should be explained and looked from different ways in order to make good cross-case comparisons.

Eisenhardt (1989b) suggested three tactics that could enhance the robustness of cross-comparisons and identify the patterns amongst the cases. Following these tactics the researcher can enhance and increase the probability to apprehend the unique findings in the data. Firstly, the researcher can choose categories or dimensions and search for within-group resemblances combined with intergroup contrasts. The dimensions in this study were suggested by the extant literature and the current research problem and helped to identify within-group similarities and inter-group differences. Secondly, pair of cases can be selected and list similarities and differences, this tactic was not followed in this research. The cases were paired on the country of origin (i.e. Scotland and Greece) in order to observe similarities and differences. Thirdly, a very good strategy is to divide and compare the data collected from different sources and different types. Eisenhardt (1989b:541) argued that “this tactic exploits the unique insights possible from different types of data collection. When a pattern from one data source is corroborated by the evidence from another, the finding is stronger and better grounded”.

Cross-case tables were used in order to illustrate the different roles of social capital and to better comprehend how strong and weak ties influence the internationalisation process of high technology INVs. Miles and Huberman (1994) supported that cross-case tables are one of the finest ways to interpret a core concept

because its unique nature can be highlighted in different contexts. The tables in this study followed Eisenhardt's (1989b) structure where the data from the nine cases are illustrated and the different internationalisation events are examined based on the different roles of social capital and the different countries the firms entered. These tables assisted the researcher to search for patterns. Additionally, the tables present the data in chronological order for the reason that this study attempts to capture the evolution of social capital diachronically.

Miles and Huberman (1994) argued that cross-case tables should examine and include temporal sequences. To fill these tables Miles and Huberman's (1994) suggestions were followed. Firstly, all the necessary information was read in the individual cases and referred to the within-case analysis, the different roles of social capital (i.e. efficacy, serendipity and liability) were defined and were associated with the different internationalisation events. Then the researcher located the different roles of social capital in each internationalisation event and associated them with the structural dimension and network closure. After entering all the data to the tables the researcher could understand and look each row and column and understand which role of social capital was more important in the internationalisation process.

In order to draw conclusions the researcher calculated how many times each role occurred in the cross-case displays. Furthermore, the ties and the type of the structure of relationships were counted to see how many times strong, weak, formal, informal and intermediary ties occurred in the observed internationalisation events. All in all, these steps helped to see the patterns from the cross-case analysis.

Validity and reliability

Pettigrew (1973) highlighted that the main difference between case studies and other research methods is that case studies examine and study phenomena in their contexts; whereas other research methods seek to study phenomena without taking into account their context. This study examines phenomena in their context. As mentioned earlier this study follows the positivist tradition so four criteria are used to ensure the thoroughness of field research: internal validity, construct validity, external validity and reliability.

Internal validity which is also known as logical validity (Yin, 2009) is related

to the causal relationships between variables and results. When a researcher or researchers analyse their results this phase is referred to internal validity (Yin, 1994). Three measures were proposed to enhance internal validity: i) a clear research framework; ii) pattern matching where researchers should compare their empirical found patterns with patterns in existing literature and in different context (Eisenhardt, 1989); iii) theory triangulation which permits researchers to prove their findings by taking into consideration multiple perspectives (Yin, 1994).

Construct validity is described as “a procedure which refers to the quality of conceptualisation or operationalization of the relevant concept” (Gibbert et al., 2008:1466). It is very important to take into consideration construct validity during data collection. Moreover, construct validity is related to which a study explores and what it asserts to explore, in other words this procedure is very important to observe reality accurately (Denzin and Lincoln, 1994). Construct validity can be enhanced by using two measures: i) establish a clear chain of evidence so that the readers can easily comprehend how the researcher from the initial research questions came to his/her final conclusions (Yin, 1994, 2009); triangulate the data collected in order to examine the same phenomenon from different angles (Yin, 1994, 2009).

External validity or generalizability is related to the extension of the observed phenomena in a specific context to other settings (Gibbert et al., 2008). There is a difference between statistical and analytical generalisation. Analytical generalisation refers to how the empirical observations can be generalised to theory in lieu a population (Miles and Huberman, 1994; Yin 1994, 2009). This study attempts to analytically generalise the results to the theory of IE and IB.

Reliability describes the minimisation or elimination of random error, in other words the researchers should come to the same conclusions if they conduct the study following the same steps (Denzin and Lincoln, 1994). Transparency is a key step that researchers should follow. Two measures can enhance transparency: i) follow a case study protocol which describes how the whole process of case study was performed; ii) create a case study database that includes all the notes, documents and narratives collected during a study so that future researchers can easily access them (Yin 1994, 2009).

Internal validity and construct validity are paramount for researchers in the

social sciences, especially when those aim to contribute like this study to the fields of IE and IB. There was a question that the researcher bear in mind during the data analysis process: is the theory of social capital, network theory and IE more plausible than any other logics? This question helped us to eliminate any other possible explanations so the internal validity could be established. In order to enhance the internal validity, credibility and authenticity of this study's results the researcher followed and bear in mind during the data analysis Miles and Huberman's (1994) 13 questions (Table 14).

Table 14 Queries of internal validity

How context-rich and meaningful ("thick") are the descriptions?
Does the account "ring true", make sense, seem convincing or plausible, enable a "vicarious presence" for the reader?
Is the account rendered a comprehensive one, respecting the configuration and temporal arrangement of elements in the local context?
Did triangulation among complementary methods and data sources produce generally converging conclusions? If not, is there a coherent explanation for this?
Are the presented data well linked to the categories of prior or emerging theory? Do the measures reflect the constructs in play?
Are the findings internally coherent; are concepts systematically related?
Were rules used for confirmation of propositions, hypotheses, and so on made explicit?
Are there areas of uncertainty identified? (There should be some.)
Was negative evidence sought for? Found? What happened then?
Have rival explanations been actively considered? What happened to them?
Have rival explanations been replicated in other parts of the database than the one they arose from?
Were the conclusions considered to be accurate by original informants? If not, is there a coherent explanation for this?
Were any predictions made in the study, and how accurate were they?

Source: Miles and Huberman (1994:279)

Construct validity was ensured in this study by using multiple sources of evidence and having interviewees review drafts of the case study reports. In other words this study followed as presented earlier Yin's (1994, 2009) propositions.

In this study, reliability was sought by using a very clear case study protocol and following Welch and Paavilainen-Mantymaki's (2014) propositions for doing a process research.

Table 15 Features of process research

Feature	This Study
Explanatory purpose	Evolution of social capital and network relationships over time
Unit of analysis	Internationalisation events
Philosophical assumptions	Positivist
Preferred methodologies	Qualitative, semi-structure interviews, retrospective interviews, cohort analysis
Conceptualisation of time	Intersubjective construction
Advantages	Explain non-linear international market entries and the evolution of social capital
Disadvantages	Observed temporal sequences to build theory

Source: Adapted from Paavilainen-Mantymaki (2014)

Additionally, the interviews were carried out both in Greece and Scotland. The researcher is a native Greek so the interviews in Greece were conducted in Greek and translated in English and the interviews in Scotland were conducted in English. Rather than using back-to-back translation, the primary method utilised in IB (Douglas and Craig, 2007), this study went beyond equivalence translation to use sociology's Skopos theory which perceives translation as an interpretive and hermeneutic activity. This method assesses translation quality by determining if Skopos is attained and takes into account the importance of space, time and context and, thereby, making translations more reflective and audience-defined rather than the simple mechanical process of back-to-back translation (Chidlow et al., 2014). In order to ensure that the Greek interviews were correctly translated and their context was comprehensive two English native speakers assisted the researcher with this process.

The translation of the Greek interviews as stated earlier followed the Skopos theory. In other words, the researcher did not translate back-to-back Greek idiomatic expressions. Those idiomatic expressions were translated in such a way in order to ensure equality and be consistent with the English language, this was achieved because the researched is bilingual; additionally two native speakers assisted the researcher to accurately translate the context of the Greek interviews as described in Skopos theory. For example the CEO of case A used many Greek idiomatic expressions that were impossible to be translated back-to-back. Therefore, the researcher discussed the meaning of those expressions with two native speakers in order to ensure equality of meaning across the Greek and Scottish interviews.

Verification

According to Miles and Huberman (1994) it is very important to verify the conclusions of a research. Verification can take the form of a second thought that comes cross the mind of the researcher when s/he is writing, it can also be an argument and review between the researcher and his/her colleagues in order to develop “intersubjective consensus” (Miles and Huberman, 1994:11). All the meanings that emerge from the data should be tested for their validity and their stability.

In this study the researcher verified his data and results by discussing the merging issues of this research with his supervisors and tested them by attending conferences. The meanings of the data were tested by following those two steps.

4.8 Contributing to the field

It is very important to understand and answer the question what constitutes a scientific contribution in the fields of IE and IB? Locke and Golden-Biddle (1997) supported that different content can be important for new contribution. In other words, researchers should search answers beyond the boundaries of their fields in order to offer more plausible results and robust contributions. There are some questions that this research tried to answer after the review of the extant literature and the analysis of the results: what is new in this study? What is new that was introduced and has not been included in the literature? According to Locke and Golden-Biddle (1997:1024) “a contribution is that which is perceived as unique or novel in light of the extant literature”. This study adopted this approach and tried to offer explanations to the examined phenomena where previous studies have offered limited answers.

Knowledge in the socially constructed view is not possible to be known independently from the knower, social practices and interactions may impact the content of knowledge. Locke and Golden-Biddle (1997:1025) added that “...the determination of what ideas count in knowledge is meaning-making activity enacted in particular communities”. In this study the particular communities encompass INVs

in the high technology sector. The same authors argued that an idea can become a contribution when accepted and constructed as important by peers. This was followed because the researcher presented the ideas of this research to conferences and his peers accepted the ideas as innovative and promising for the fields of IB and IE. Finally, according to Weick (1989:524) “the contribution of social science does not lie in validated knowledge, but rather in the suggestion of relationships and connections that had previously not been suspected”.

4.9 Limitations of the study

Although every effort was made to conduct a research with high standards and high quality, as with any research, there are limitations to this study. The research design helped to minimise these limitations. This study applied the case study method. Miles and Huberman (1994) argued that case studies are generalizable to theoretical propositions and not to populations. In other words, it is difficult to statistically generalise the results of this study. However, the purpose of this study was not to generalise over the whole population of INVs but to arrive at some analytical generalisations. The case study method allowed acquiring knowledge regarding the internationalisation process of the case firms.

Another limitation is that the focus was purely on two small countries and on a specific industry sector. Greece and Scotland have limited domestic markets and the decision of going abroad does not represent a choice but rather a necessity. It may be difficult to apply the findings of this study to other industry sectors or to countries. For example in the US or Japan high technology firms can survive in the local market because these countries have a higher demand of high technology markets.

Retrospective bias is another limitation of this study. The data were collected after the various internationalisation events and the researcher had to depend on the retrospective answers of the interviewees. Blaikie (2010) argued that memory can be fallible. However, Eisenhardt (1989a) found that executives can recollect with high accuracy past events. Additionally, several interviews were conducted in order to minimise the effect of the retrospective bias.

Finally, there were two to three interviews per company so this could be seen as a limitation. Nonetheless, the selected firms were small in size and the informants were either the founder or the CEO of the company so the participants had the necessary knowledge and were involved in the internationalisation process of their firms.

4.10 Ethics

The interviewees were fully informed about the confidentiality of the information of this study and there was not an invasion of their privacy (Miles and Huberman, 1994; Bryman and Bell, 2007). Additionally, all the interviewees agreed to take part in this study by their choice. The interviewees preferred to retain their anonymity so they were coded Interviewee 1, Interviewee 2 and the cases were coded Case A, B and so on. Finally, the self-audit checklist for level 1 ethical review of the University of Edinburgh was read before beginning this study (please see Appendix three for more information).

Ethical issues were considered in this research. First of all, all the data that were collected from the interviews with the CEOs and founders of high technology INVs were treated as confidential. Secondly, if the companies ask for a confidentiality agreement then the researcher would be prepared and signed it.

In addition, the researcher presented his findings accurately and would protect the data that were collected from third parties. As far as the databases which were used are concerned the researcher abided by the rules of their use. More specifically, the databases which were used are available on the internet so there were ethical considerations in the internet research.

4.11 Profile of case firms

This section presents the profile of the case firms involved in this study. It becomes clear from the types of firms and identification of groups the importance of selecting firms with clear criteria as described earlier in section 4.5 of this chapter.

4.11.1 Types of firms

The nine case firms selected in this research were from the same industry (Table 12, section 4.5). All the case firms were rapid internationalisers and had previous international presence when the data were collected. All the case firms are independent high technology Scottish and Greek SMEs. The only firm that does not have international presence is case H and was selected as a polar case as described by Eisenhardt (1989a) and Miles and Huberman (1994). The majority of firms develop software and only case B is involved in both manufacturing and software development.

4.11.2 Identification of groups

The nine case firms were categorised into two groups and were given names in order to retain their anonymity. The Greek SMEs are cases A, B, C, D and E, the Scottish SMEs are cases F, G, H and I. The firms were categorised into groups in order to simplify the case analysis and the propositions of Eisenhardt (1989b) were followed. It is important to highlight that the division of the selected firms was not made to compare the two groups. Examining the initial and later foreign market entries in Greek and Scottish high tech INVs groups this study could capture the evolution of social capital and how the different roles of social capital are more important in the different temporal stages. The firms actually followed the INVs theory and the revisited Uppsala model (Oviatt and McDougall, 1994, 2005; Johanson and Vahlne, 2009). Table 12 in section 4.5 presents in brief the cases' inception year and the first foreign market entry.

All the firms followed the INVs recommendations of Oviatt and McDougall (1994, 2005) that they should internationalise within 6 years of their inception to be considered as an INV. There are many other categories that this study could have been considered to group the cases such as the size of the firm and the year of establishment. However, these categories would have not added any further explanatory power.

4.12 Summary

This chapter describes the research methodology selected in this study in order to examine and comprehend the role of social capital and network relationships in the internationalisation process of high technology INVs. The methodological approach used is summarised in Table 16.

Table 16 Selected research methods

Philosophical assumption	Positivist
Approach	Qualitative Subjective Inductive Process
Research design	Multiple case studies of high tech INVs Unit of analysis: firms & internationalisation events
Data collection	Interview founders and CEOs of firms Marketing material Internet (News, Associations)
Analysis	Within-case analysis Cross-case analysis

Source: Author

This study follows a positivist philosophical assumption and follows Eisenhardt's (1989a,b, 1991) propositions to build theory from multiple case studies. The research uses a qualitative approach based on multiple case studies of high technology INVs. The firms had to meet 5 criteria in order to be selected and participate in this study. In-depth semi-structured interviews with CEOs and founders of high technology INVs were the key informants in the nine case firms. Sources such as the internet, associations and two key informants in a high tech cluster in Athens, Greece enhanced the validity of this study. Additionally, access to material related to the firms and secondary information provided triangulation of the data. The data analysis followed within-case and cross-case techniques. The data were categorised into different themes based on the research questions and cross-case tables were used to identify themes, trends and patterns.

The following chapter presents the empirical part of this thesis so the within-case analysis will lead to the cross-case analysis. The extant literature was used to identify all the gaps and concepts which were very important in order to generate

ideas. Data collection and analysis were paramount to identify new concepts and ideas. The presentation of the within-case is very analytical and descriptive and many direct quotes were used in order to persuade the reader for the trustworthiness of the interpretations.

Chapter 5 Findings

5.1 Introduction

An analytic framework was constructed based on the groups of companies that were examined, rapidly internationalising high technology firms. The following approach was used to analyse the findings via within-case. NVivo was utilised for coding purposes and thematic analysis. Below, the case findings are presented.

5.1.1 Various dimensions and background information

This section explores and examines how different dimensions influence the internationalisation of high technology INVs. Some of these dimensions include the background of the entrepreneurs, speed of internationalisation as defined earlier in the thesis, cultural differences and other environmental factors.

5.1.2 Different roles of social capital

This section examines and compares the different roles of social capital in the internationalisation of the high technology firms, and how INVs' internationalisation process is influenced by the different roles of social capital. In addition, the dynamic role of social capital is highlighted and how this changes over time. Finally, the serendipitous, efficacious and liability roles of social capital are divided into different categories in order to comprehend which role is more important and at what stage of internationalisation. The taxonomy is based on the literature part of this research where the definitions of the different roles are identified and mentioned. The roles of social capital are important to be examined diachronically because there lack existing research examining these roles within a temporal context.

The three roles of social capital are presented in Table 17 in order to explain how they were categorised. The different criteria that were used to categorise the efficacy, serendipity and liability role of social capital are also listed.

Table 17 Categorisation of the three roles of social capital

Different roles of social capital	Criteria	Examples
Efficacy role	Actively seeking new partners	<i>During a conversation with my friend I told him that we were looking to start collaboration with Apple, he then told me that he knew a person who was working for Apple and he would be more than happy to introduce us to him... (Case C - efficacy role – Quote 4)</i>
	Passively seeking new partners	<i>... If we had tried with our own efforts we would probably not have succeeded. It would have been impossible to find that customer in Russia without the help of our contact... (Case A - efficacy role – Quote 14)</i>
	Use of existing network relationships to get a reference or introduce the company to a new partner	<i>...we were introduced to other companies through a US customer in Greece and Italy... Project contractors from other countries recommended us to US companies... (Case B - efficacy role – Quote 10)</i>
	Partnership initiated through a tradeshow by a third party which is an existing network relationship of the focal firm	<i>“...In the US we found our customers by ourselves through tradeshows and online portals/associations... We also used promotional help offered by the cluster we operate in Greece... Their assistance was very important and beneficial for our company, because we don’t have the resources, mainly financial, to attend all the tradeshows that are related to our industry. The cluster actually funded our expenses to participate in the tradeshow in the US...” (Case D - efficacy role – Quote 4)</i>
Serendipity role	Partnerships initiated through the internet (unexpected events)	<i>...Our first customer was in Japan... They found us through the internet ... (Case I - serendipity role – Quote 2)</i>
	Partnerships initiated through tradeshows (unexpected events)	<i>...We had never met him before neither we had arranged to meet him in the tradeshow, he just passed by our booth... (Case E - serendipity role – Quote 3)</i>
Liability role	Decaying relationships	<i>...We had to terminate our collaboration with them due to cultural differences and because they weren’t so engaged... (Case I - liability role – Quote 2)</i>

It is obvious from Table 17 that the efficacious role was related to the active or passive stance of the examined firms to find new partners in foreign markets. In addition existing network relationships introduced the focal firm to new partners or gave them valuable references, which increased their credibility and trustworthiness. In this study the support of third parties such as funding to attend a tradeshow abroad was categorised as efficacy role of social capital. Those third parties include existing network relationships of the focal firm like the Greek cluster in Athens and Patras.

Unexpected events which were related to the internet and tradeshow were associated with the serendipity role of social capital. In other words, partnerships initiated by unexpected events like an email from a future partner were categorised as serendipitous role of social capital.

Finally, the decay of an existing network relationship/ partnership was characterised as liability role of social capital. The decision to terminate an existing collaboration could be taken mutually (i.e. focal firm and partner) or from the focal firm.

5.1.3 Structural dimension and network closure

This section explores the importance of strong and weak ties in the internationalisation of high technology INVs. CEOs and founders of high technology INVs have been using strong and weak ties to either enter foreign markets or bridge structural holes (please see Table 1 for the definitions used in this study).

The individual within case analysis is presented for the examined firms in Greece and Scotland. This chapter presents the role of social capital and network relationships to internationalisation across all the examined firms. It also highlights how the different roles of social capital influence foreign market entry. The mechanism of strong and weak ties is also presented and articulated to the internationalisation of high technology INVs. The relationship between the roles of social capital and strong and weak ties is also presented.

The evolution of social capital is another aspect that is examined. The foreign market entries are categorised to initial and later. According to the interviewees the initial market entries that gave a boost and assisted firms to enter other countries were considered as early international market entries. It was confirmed from the interviewees that only one or two countries were the most important in early international market entries that assisted firms experience continuous international operations. As stated previously the initial market entries were based on the categorisation made by the interviewees. The founders and CEOs of the examined cases highlighted that one or two countries should be considered the most important and initial market entries. Additionally, the interviewees stated that later foreign market entries were those that followed the first one or two foreign market entries.

5.2 Presentation of cases

This part presents the case firms. Each case is presented individually in order to emphasise and illustrate the different roles of social capital and the importance of strong and weak ties.

5.2.1 Analysis and presentation of Case A

For the purpose of this research case Firm A was examined and analysed. Firm A is a Greek High Technology SME based in Athens, Greece. The presentation of firm A follows the themes presented earlier.

5.2.1.1 Various dimensions and background information

Case A can be characterised as INV because of the speed of internationalisation, the number of countries operating in and the percentage of total sales coming from foreign operations.

The company was established in 2000 by a group of ten people. The founding team was reduced to four people right after the inception of the firm. The four founders or the core team of the company kept key roles in the top management (e.g. CEO, VP of sales, etc.). The company operates in the high technology sector and based on its website “it is a provider of Electronic Design Automation (EDA) software products and services, addressing the semiconductor market and facilitating the design of chips for wireless communications, broadband networking, PCs, tablets and other segments”. It is important to highlight that none of the founders had previous international working experience. All the members of the top management team hold a PhD degree.

The company employs 50 people and most of them work in Athens; there is also a team in the US and Japan with offices in Silicon Valley, Yokohama, Japan and a home-office in Shanghai. The company moved its headquarters in California, Silicon Valley in the US in order to operate in a friendlier ecosystem and avoid taxation issues in Greece.

The firm’s sales are 100% international. The firm had only signed a small contract with a Greek company in Northern Greece in 2004. The founders of the company had a vision to go abroad since the inception of the firm due to the size of the domestic market.

The firm operates in all major semiconductor markets such as the US, Taiwan, Japan, Israel, South Korea and in Europe. The first market that the company entered was the US in 2000, immediately after its inception. Firm A spent four years

in the US market before entering other foreign markets. Interviewees 1 and 2 stated that the size of the US market could keep their business going for many years (please see appendix two, quotes 1 and 2 for further information).

The second market that the company entered was Japan in 2004. The company faced a number of challenges entering the Japanese market. First of all, the cultural differences were very high, language was also an impediment (please see appendix two, quote 3 for further information).

The firm sales its software to a number of European countries like Germany, Switzerland, Italy, France, UK, Sweden, Finland and Austria. It also operates in China and Canada. Firm A faces challenges in the European markets for a number of reasons like red tape issues, and cultural stereotypes.

Some of the issues mentioned above were mitigated when the firm moved its headquarters (mother company) in California. It was also easier for the company to get access to funding (e.g. VCs) and avoid tax problems (please see appendix two, quote 4 for further information).

Firm A followed different international patterns to enter foreign markets. They have representatives in all major markets and as mentioned earlier the company's chosen entry mode was the establishment of offices in the US, Japan and China. The internationalisation of firm A was outward and had direct exports/foreign sales. More specifically the firm has representatives in South Korea, Israel and Taiwan and a salesperson in Japan. The team in China is small, whereas the team in the US is bigger and includes technical support, etc. The European sales office is based in Athens, which supports and covers Europe. The sales offices in Japan and the US cover the Japanese and the US markets respectively. Finally, the rest of the world is covered by the firm's offices in the US. It is important to mention that there was a combination of low and high entry commitments followed by firm A, which highlights and justifies its characterisation as an INV.

Table 18 Case A - Summary of various dimensions and background information

Year of inception	2000
Educational background of founders	PhD Holders
First country entered/Year	USA/2000
Major markets entered (chronological order)	Japan, Israel, China, South Korea, Russia
Speed of internationalisation	From inception (i.e. 2000)
Number of employees	50
Percentage of sales from international operations	100%

5.2.1.2 Different roles of social capital

In the previous section the background information on firm A was presented and highlighted the reasons why the firm is characterised as an INV. The number of countries and the percentage of total sales coming from foreign operations were also presented.

In this section the different roles of social capital (i.e. efficacious, serendipitous and liability) are presented and how these influence the internationalisation of firm A. There will be an attempt to identify which role is more important and at what stage of internationalisation. The examination of the different roles of social capital is taking place in chronological order to capture the evolution of social capital and its influence.

5.2.1.2.1 Roles of social capital in initial international market entries

The analysis of the role of social capital begins with a focus on the initial foreign market entries. The company as mentioned in the previous section entered the US market in 2000. Firm A used a number of network relationships that the founders had in the US. The role of network relationships is paramount especially in the initial stages of internationalisation. Firm A firstly went to Silicon Valley because the founders knew people there. Firm A managed to get funds and access to the US market through its network relationships. Social capital's role goes beyond the internationalisation facilitating factors as it offers access to necessary funds, especially in the case of firm A. The US as was mentioned in the previous section is the first market that was chosen by firm A due to the size of the country and the access that the firm had to this market. The majority of the initial network relationships were based in the US. The dynamic nature of social capital is also

highlighted in the US. Firm A was introduced to a number of people (e.g. CEO in California) and this shows the rapid change of social capital as well as its breadth (please see appendix two, quotes 5 and 6 for further information).

After a successful presence in the US market, firm A entered the Japanese market in 2004, a country with many cultural differences and more complex business relationships. The company was initially approached via the internet. The role of information technologies and the new media of communication that are offered the last fifteen years show how those had an impact on firm A to enter the Japanese market. Firm A had started building its network in Japan when the firm attended a tradeshow there. The liability role of social capital in Japan changed to serendipity role as the company found a new partner there. The efficacious role of social capital was also important in the Japanese market because the firm attracted funds and managed to build up collaboration with Fujitsu (please see appendix two, quotes 7, 8 and 9 for further information).

Table 19 Case A - Roles of social capital in initial international market entries

Country	Role of social capital (see chapter 3, pages 72-73)	Supporting direct quote (please see appendix two for further details)
USA	Efficacy role	<p><i>...they were fellow PhD students, professors who I had known them while I was a researcher... I knew someone at Lucent who knew someone else and using all the contacts I could achieve my goal... (efficacy role – Quote 5)</i></p> <p><i>...I met an angel investor who put money into our company through another CEO, the CEO whom I met through my CEO friend with whom we are now best friends. The introduced CEO I met him one evening when we were drinking wine in Los Gatos in California... (efficacy role – Quote 6)</i></p>
Japan	Serendipity, liability and efficacy role	<p><i>...we found a very good partner who knew the market and who actually found us on the internet... (serendipity role – Quote 7)</i></p> <p><i>...At first we just went to Japan in an exhibition... (serendipity role – Quote 8)</i></p> <p><i>...Now I remember that we had had a representative in Japan that did almost nothing... (liability role – Quote 7)</i></p> <p><i>...I came in contact with 3 friends and I managed to start talking with the number two in the Fujitsu group... (efficacy role – Quote 9)</i></p>

5.2.1.2.2 Roles of social capital in later international market entries

Firm A was successful both in the US and Japanese markets. However, after a certain period of time the firm entered a number of countries in Europe and other countries like Israel, China, Russia, and South Korea (in chronological order). The

role of social capital in the decision on entering the major markets that the firm operates in is presented.

The firm chose Israel as a market to enter in 2005 due to the high number of innovative and start-up firms that operate there. Firm A had contacts and network relationships in the Israeli market that facilitated the entry. In specific, Intel facilitated the successful entry to the Israeli market (please see appendix two, quote 10 for further information). It is interesting and important to highlight how firm A managed to start collaboration with Intel, which shows the dynamic nature of social capital and how network relationships act as a bridge to existing social capital and the creation of new one.

“A new collaboration always starts with a reference from a previous/existing customer/client. You never start from scratch, when you’re completely unknown things aren’t easy, there is always a reference to help you out. We got a reference from a German company in Germany and then step by step we went to the US. Some Germans knew us since 2004 and so they gave us the first reference...” (Interviewee 1)

The next market that firm A entered was China in 2011. The business landscape in China is unique and the challenges the company faced were mainly related to cultural and language differences (please see appendix two, quote 11 for further information). Firm A was able to enter and get introduced to Chinese companies using existing network relationships. Social capital proved to be very important for firm A’s internationalisation in the Chinese market (please see appendix two, quote 12 for further information). Previous contacts were used to get a reference or get introduced to new customers. The efficacious role of social capital was very important for entering the Chinese market (please see appendix two, quote 12 for further information). However, the current Chinese partner is not so active and engaged with the promotion of the company; hence firm A is not satisfied from their performance and assistance in penetrating the Chinese market, the liability role of social capital is present (please see appendix two, quote 13 for further information).

The market entry in Russia is an interesting case where the efficacious role of social capital is highlighted. The company did not have any network relationships in the Russian market or any knowledge on the business landscape of this country. The collaboration with a Russian company started in 2011. One of the existing customers of firm A recommended them to a Russian firm (please see appendix two, quote 14 for further information).

In some cases the role of social capital is not clearly demarcated. The market entry in South Korea in 2011 was influenced both by the efficacious and serendipitous roles of social capital. An existing network relationship assisted firm A to find a representative in the South Korean market (please see appendix two, quote 15 for further information).

Table 20 Case A - Roles of social capital in later international market entries

Country	Role of social capital (see chapter 3, pages 72-73)	Supporting direct quote (please see appendix two for further details)
Israel	Efficacy role	<i>...for example a company that runs a subsidiary in Israel gave us a reference to start working with a new company/customer... (efficacy role – Quote 10)</i>
China	Efficacy role	<i>...In China we started working with giants like Huawei and Spectrum... Huawei recruited many R&D employees from Ericsson and Motorola. So the first reference came from former Ericsson's teams... (efficacy role – Quote 11)</i>
Russia	Efficacy role	<i>... If we had tried with our own efforts we would probably not have succeeded. It would have been impossible to find that customer in Russia without the help of our contact... (efficacy role – Quote 14)</i>
South Korea	Efficacy and serendipity roles	<i>..One of our network relationships (a lady) who is originally from South Korea and is based in the US had gone to South Korea to meet her family. In that trip she came in contact with a company that later became our representative in South Korea... (efficacy and serendipity roles – Quote 15)</i>

5.2.1.3 Structural dimension and network closure

In the previous section the different roles of social capital in the internationalisation of firm A were analysed and examined. The different roles of social capital were divided in initial and later international market entries in order to highlight the dynamic nature and evolution of social capital over time.

In this section the structural dimension and network closure are presented. Examining the internationalisation of firm A will allow us to better comprehend the mechanism of strong and weak ties and their relationship with social capital.

Firm A is well connected in the industry it operates in. The statement below highlights how well connected firm A is.

“...being so many years in this sector if we want to enter a new market we’ve so many network relationships, so we can approach almost anyone in our industry who can give us an advice or a recommendation. I believe that there isn’t anyone at least in our industry that if we want to approach him/her we couldn’t find an existing network relationship to introduce us. Our existing network relationships act as a bridge when we want to meet new people in our industry...” (Interviewee 2)

Firm A attends mainly tradeshows to meet up with existing customers. It is important to mention that the number of potential customers in the industry that firm A operates in is limited. For those reasons firm A can bridge easily any possible structural holes by using its existing network relationships.

“...we participate in exhibitions and events to catch up with clients and keep in touch with our industry. We don’t attend exhibitions and tradeshows to find new customers, in our industry there is a specific number of potential customers, for example 200 companies. So if you’ve already 100 of these companies as clients, the other 100 companies know you and you know them. And after 13 years in this industry we know almost everyone, I don’t think there is anyone who doesn’t know us and we do know all the firms in our sector...” (Interviewee 2)

Social capital is examined in terms of strong and weak ties (strength of the tie) and the structure of the relationship (i.e. formal, informal, intermediary). The definitions followed to investigate them are based on the extant literature.

Firm A used strong and formal ties to enter the US market, this is supported by the initial international markets entry section presentation. On the other hand, weak, intermediary and formal ties were used to enter the Japanese market. The same pattern appears in later international market entries where equally strong and weak ties were used to enter Israel, China, Russia and South Korea.

Table 21 Case A - Strength of ties and structure of the relationship

Country	Strength of ties and structure of relationship
US	Strong, Formal (Previous classmates, friends, CEOs)
Japan	Weak, Strong Intermediary, Informal, Formal (Tradeshow, Approached via Internet, Friends, Customers)
Israel	Equally strong and weak, Formal (network relationships in Intel)
China	Equally strong and weak, Formal (network relationships in Ericsson)
Russia	Equally strong and weak, Formal (network relationship introduced firm A to the Russian customer)
South Korea	Equally strong and weak, Formal (network relationship introduced firm A to the South Korean rep)

5.2.1.4 Summary of Case A

Figure 9 depicts the evolution and role of social capital and structural dimension in the internationalisation of firm A. The foreign market entries are presented in chronological order. It is highlighted from the diagram that the efficacious role of social capital was more important for firm A. Additionally,

equally strong or weak ties were important when firm A entered foreign markets. Social capital and weak and strong ties had mainly an impact on facilitating firm A to enter rapidly foreign markets. A good example is when firm A was introduced and approached by a potential customer in Russia. The firm did not have any plans to enter the Russian market due to lack of knowledge on the economy and business landscape of this country. Finally, Table 22 summarises the frequency of the different roles of social capital that occurred in the internationalisation of firm A.

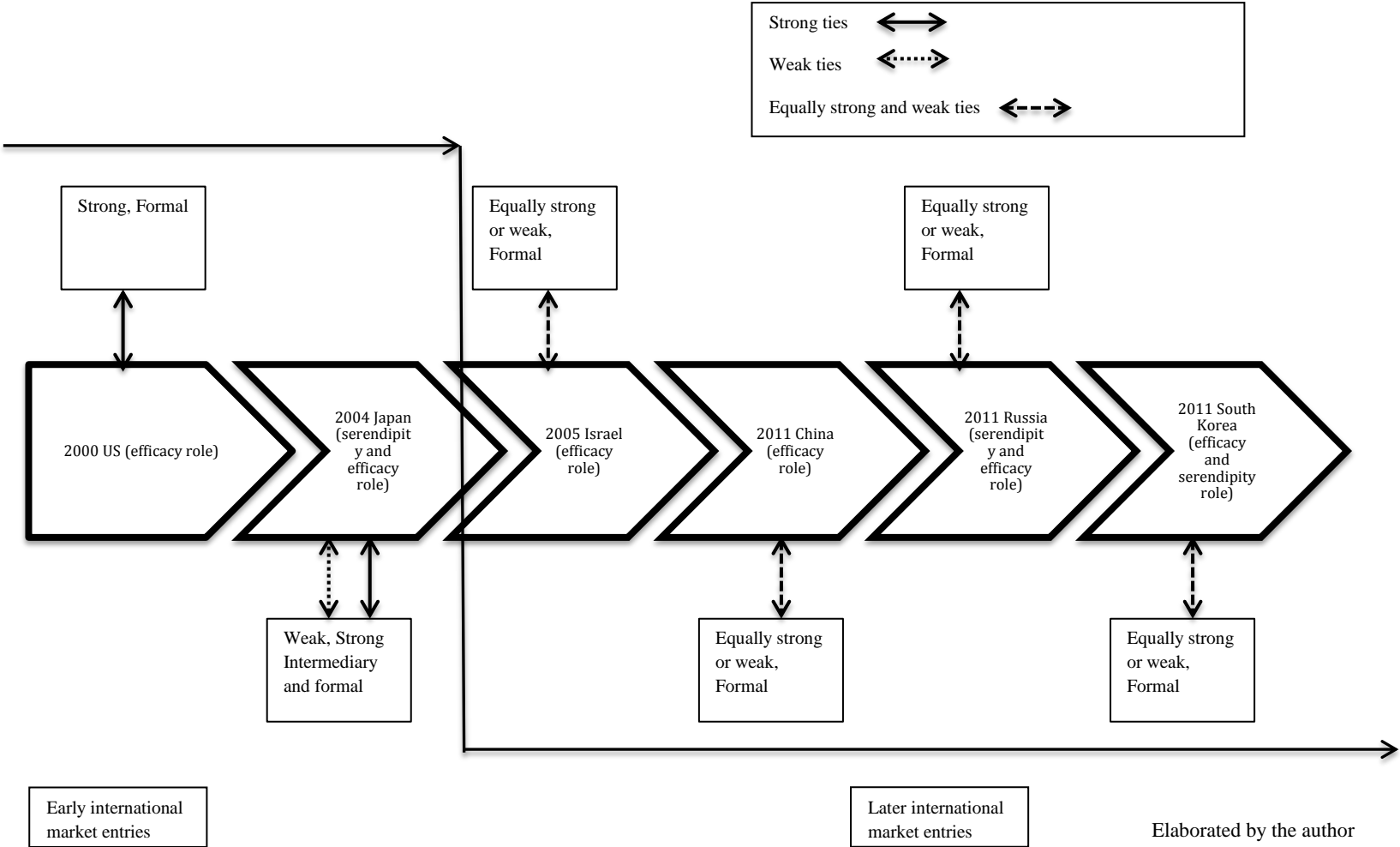
Structural holes did not act as an impediment for firm A as the company is well connected and operates in a niche market where the number of potential customers that are not already existing customers is limited. Firm A for the previous reasons has a strong reputation that is recognised by its existing and potential customers. In other words, firm A can bridge structural holes due to its reputation and well connections in the sector that operates in.

The role of internet is also important for getting necessary information on foreign markets and background information on potential partners. LinkedIn also became an important tool to track, approach and contact key people who may help firm A to get access into possible new clients.

Table 22 Case A - Roles of social capital (frequency)

Efficacy role	Serendipity role	Liability role
8	2	1

Figure 9 Case A - Evolution of social capital over time and structural dimension in international market entries



5.2.2 Analysis and presentation of Case B

For the purpose of this research case Firm B was examined and analysed. Firm B is a Greek High Technology SME based in Athens, Greece. The presentation of firm B follows the themes presented earlier.

5.2.2.1 Various dimensions and background information

Case B can be characterised as INV because of the speed of internationalisation, the number of countries operating in and the percentage of total sales coming from foreign operations.

The company was established in 2000 by a group of three people. The founding team was increased to eight people four to five months after the inception of the firm. The three founders or the core team of the company kept key roles in the top management (e.g. CEO, CTO, etc.). The company operates in the high technology sector and based on its website “The company’s main activities are the design, development and implementation of remote monitoring and control solutions for renewable energy, through our vendor independent system insolar and for electromechanical equipment of telecom operators, through our centralised and integrated system insite”.

It is important to highlight that none of the founders has previous international working experience, only two of the co-founders had worked in European funded research projects during their PhD studies. All the members of the top management team hold a PhD degree from the Technical University of Athens. The company employs 70 people and most of them work in Athens, there is also a team in the US and India. There are offices in San Jose, California, and in India. The company moved its headquarters to London in order to operate in a friendlier ecosystem and avoid taxation issues in Greece.

Over 38% of total sales come from international operations. The firm operates in different regions in Greece, mainly in the sector of solar parks monitoring.

The founders of the company had a vision to go abroad since the inception of the firm due to the size of the domestic market and the different initial business focus. The company changed its business focus from broadband gateways to solar energy monitoring and control of geographically distributed sites (please see appendix two, quote 1 for further information).

Firm B worked on research projects with big MNEs in Europe. There were research collaborations with Telefonica in Spain, France Telecom in France and other companies in Italy. Those collaborations started during the PhD studies of the founders.

It is important to mention at this point that firm B decided after five to six years (i.e. between 2005 to 2006) of its inception to alter its business focus. Their newly developed technologies were not related to the initial technologies that the company had developed.

“...the company basically had two phases, the first phase was dealing with gateways which had international success and led to the collaboration with Telefonica, this lasted until 2006-2007, after that period we altered our business focus, which was partly related to the previous one. There isn't any connection between our old and new customers, there wasn't any “bridge” from the first to the second phase and the old and new network relationships.”(Interviewee 1)

The firm operates in developed and emerging markets such as the US and India. The first market that the company entered was Spain in 2000, the same year of its inception. The reasons for operating in the Spanish market at the initial stages were associated with the collaboration between firm B and Telefonica (please see appendix two, quote 2 for further information).

The firm sales its software and services to a number of European countries such as Italy, Cyprus, Romania, Bulgaria and France. It also operates in India and Japan. Firm B faces challenges in specific European markets and emerging markets for a number of reasons like red tape issues, and cultural stereotypes (please see appendix two, quote 3 for further information).

The first major market the company entered was Spain, it is important to understand why firm B chose that market for its initial international market entry. Firm B entered the Spanish market because there was not a developed ecosystem in Greece such as Venture Capital market, etc. (please see appendix two, quote 4 for further information).

The second major market that the company entered was Italy in 2001. The company followed an existing customer in the Italian market. After the Italian market firm B entered the French market in 2002. During the second phase firm B entered the Spanish market in 2005 and the Italian market in 2010. Firm B entered the US market in 2011 and the Japanese and Indian markets in 2012. Firm B did not face any challenges in the Italian and Spanish markets; whereas the Japanese and Indian markets were more challenging due to language and mind-set differences respectively.

Firm B followed different international patterns to enter foreign markets and sale its products. The company runs offices in Greece, the UK, the US and India. The chosen entry mode was the establishment of offices in foreign markets. The internationalisation of firm B was outward and had direct sales mainly in the European markets. The company plans to expand its teams in the US and India by recruiting more employees. It is important to mention that there was a combination of low and high entry commitments followed by firm B, which highlights and justifies its characterisation as an INV.

Table 23 Case B - Summary of various dimensions and background information

Year of inception	2000
Educational background of founders	PhD Holders
First country entered/Year	Spain/2000 (first phase) – Spain/2005 (second phase)
Major markets entered (chronological order)	France, Italy (first phase) Spain, Italy, US, India, Japan (second phase)
Speed of internationalisation	From inception (i.e. 2000, first phase & 2005, second phase)
Number of employees	70
Percentage of sales from international operations	38%

5.2.2.2 Different roles of social capital

In the previous section the background information on firm B was presented and the reasons why the firm is characterised as an INV were also highlighted. The number of countries and the percentage of total sales coming from foreign operations were also presented.

In this section the different roles of social capital (i.e. efficacious, serendipitous and liability) are presented and how these influence the internationalisation of firm B. There will be an attempt to identify which role is more important and at what stage of internationalisation. The examination of the different

roles of social capital is taking place in chronological order to capture the evolution of social capital and its influence.

5.2.2.2.1 Roles of social capital in initial international market entries

The analysis of the role of social capital begins with a focus on the initial foreign market entries. The company as mentioned in the previous section entered the Spanish market in 2000. Firm B used a number of network relationships that the founders had in Spain. The role of network relationships is paramount especially in the initial stages of internationalisation. Firm B firstly went to Spain because the founders had contacts in Telefonica since their doctoral studies (please see appendix two, quotes 5 and 6 for further information).

Firm B after entering the Spanish market decided to enter the French market in 2001. Network relationships during the founders' doctoral studies were crucial in order to find customers in France (please see appendix two, quote 7 for further information). Firm B entered the Italian market in 2002. It got a reference from its existing network relationships in order to successfully enter the Italian market both in initial and later market entries (please see appendix two, quote 8 for further information).

Table 24 Case B - Roles of social capital in initial international market entries

Country	Role of social capital (see chapter 3, pages 72-73)	Supporting direct quote (please see appendix two for further details)
Spain	Efficacy role	<i>...it happened to have a common European project with Telefonica which we have known them since our doctoral studies, having worked with them on a common R&D project it was easy to develop that research relationship into a commercial relationship. Telefonica's R&D team recommended us to the business development department of Telefonica... (efficacy role – Quote 2)</i>
France	Efficacy role	<i>... We've had collaborations in France since 2001 with French companies such as France Telecom and a company that made Linux software. We knew these companies from common European projects while we were doing our PhD studies... (efficacy role – Quote 7)</i>
Italy	Efficacy role	<i>... In Italy we went in 2010 with our current activities but we've been present in the Italian market since 2002. We had partnerships with Italian companies like Telecom Italia ... (efficacy role – Quote 8)</i>

5.2.2.2.2 Roles of social capital in later international market entries

Firm B was very successful in the Spanish, Italian and French markets. As was previously mentioned in 2005 firm B decided to change its business focus and developed new products. After a certain period of time firm B continued its operations in the above mentioned countries by selling its new products. Additionally, the firm entered new markets such as the US in 2011, India in 2012 and Japan in 2012.

The entrance into the US market was facilitated by existing customers in European markets and network relationships mainly in the Silicon Valley. The role of expats was very important in the successful entrance in the US market. Firm B realised how important was to have local presence in the US market and hire local people. The company followed two paths to invest in the US. The first one was associated with the cluster where firm B operates in Athens. The second path was related to following existing customers (please see appendix two, quotes 9 and 10 for further information).

The different roles of social capital are highlighted also in the case of the Indian market entry in 2012. The Indian market as explained earlier was more challenging due to a number of obstacles that firm B had to overcome. Additionally, doing business in India is different as the mind-set of Indians is different (please see appendix two, quote 11 for further information).

Firm B entered the Japanese market in 2012. Network relationships played an important role in order to facilitate the market entry in this country. It was mentioned earlier that the Japanese business landscape is different from the European and the US ones due to huge language differences (please see appendix two, quote 12 for further information).

Table 25 Case B - Roles of social capital in later international market entries

Country	Role of social capital (see chapter 3, pages 72-73)	Supporting direct quote (please see appendix two for further details)
USA	Efficacy role	<p><i>...we used the Greek community as much as we could to give us leads to target companies. Generally we used the networking of the Greek community... (efficacy role – Quote 9)</i></p> <p><i>...Corralia cluster in Athens, which has helped us as a facilitator in creating a networking channel with Greeks in the US... (efficacy role – Quote 9)</i></p>

India	Efficacy role	<i>...we were introduced to other companies through a US customer in Greece and Italy... Project contractors from other countries recommended us to US companies... (efficacy role – Quote 10)</i>
		<i>...For example, in India we've a partnership with a consultant who has a high position in a consulting company so through him we find leads in India... (efficacy role – Quote 11)</i>
Japan	Efficacy role	<i>...In Japan we went in 2012, we had a contact there through our business network... (efficacy role – Quote 12)</i>

5.2.2.3 Structural dimension and network closure

In the previous section the different roles of social capital in the internationalisation of firm B were analysed and examined. The different roles of social capital were divided in initial and later international market entries in order to highlight the dynamic nature and evolution of social capital over time.

In this section the structural dimension and network closure are presented. Examining the internationalisation of firm B will allow us to better comprehend the mechanism of strong and weak ties and their relationship with social capital.

Firm B operates in the sector of renewable energy and more specifically in the monitoring of solar energy parks. This industry is mainly divided in the solar panel parks contractors and the investors or the companies that manage and own the parks. Firm B has been using both categories of firms as contacts to get references and get introduced to new customers. The international expansion strategy of firm B was based the last years on client following.

“...We enter countries following our customers that are based either in Greece or abroad. Our strategy consists of following our customer in their international expansion...” (Interviewee 1)

It was described in the previous section how the existing network relationships helped firm B to enter foreign markets. In Spain the company used strong and formal ties because their collaboration with Telefonica was developed through the years. It started based on a common research project and continued into more commercial activities, which were successful. The case of Italy and France is also similar because the European research projects facilitated the development of these collaborations to become stronger over time. Additionally, in later international market entries the importance of Corralia cluster and Greek expats in Silicon Valley

were crucial in the successful entry in the US market. Firm B was also successful in the Indian market because one of the employees introduced them to a consultant who became a successful partner in this country.

“We’ve collaboration with Tata, which is a very large and well known group. I don’t think that we could have ever managed to close a deal with them if we didn’t have our partner in India.” (Interviewee 1)

The following statement illustrates the importance of network relationships and clients in the successful international expansion. The strength of ties also plays an important role in foreign market entries.

“A US company built a solar park using a Greek contractor. We knew the contractor from previous projects but not the manager/investor of the park. The contractor introduced us to the US investor that found our system very useful. Since then the US company has been using our technologies in Italy, Spain, etc. Word of mouth helped us to become more successful and people learned about our products. This turned out to be very useful because we knew all the key people that we wanted to contact in order to get feedback and to get access to other companies.” (Interviewee 1)

Existing clients also motivated the company to enter new foreign markets. This happened in the case of a big Chinese investor that chose firm B’s technology in other projects in European countries.

“There is a Chinese company that has built solar energy plants in Greece, Czech Republic, Germany, Bulgaria and has chosen our technology. Working with such good and big customers/partners we enter many foreign markets.” (Interviewee 2)

Social capital is examined in terms of strong and weak ties (strength of the tie) and the structure of the relationship (i.e. formal, informal, intermediary). The definitions followed to investigate them are based on the extant literature.

Firm B used strong and formal ties to enter the Spanish, French and Italian markets, this is supported by the initial international markets entry section presentation. On the other hand, weak, intermediary and formal ties were used in the US market entry. In the Indian market both strong and equally strong ties were used. Moreover, strong, intermediary and formal ties were used to enter the Japanese market.

Table 26 Case B - Strength of ties and structure of the relationship

Country	Strength of ties and structure of relationship
Spain	Strong, Intermediary, Formal (Telefonica's R&D teams, University Projects, EU Projects, current client)
France	Strong, Intermediary, Formal (European projects, University projects, France Telecom)
Italy	Strong, Equally strong and weak, Formal, (Telecom Italia, EU Projects, University Projects, current client)
US	Strong, Equally strong and weak, Formal (Expats, Corralia cluster, current client)
India	Strong, Equally strong and weak, Formal, Informal (Current client, Firm's B employee introduction to Indian consultant)
Japan	Equally strong and weak, Intermediary, Formal (Introduction from a company to a Greek-Japanese, EU project)

5.2.2.4 Summary of Case B

Figure 10 depicts the evolution and role of social capital and structural dimension in the internationalisation of firm B. The foreign market entries are presented in chronological order. It is highlighted from the diagram that the efficacious role of social capital was more important for firm B. Additionally, strong and equally strong or weak ties were important when firm B entered foreign markets. Social capital and mainly strong and weak ties had mainly an impact on facilitating firm B to enter rapidly foreign markets. A good example is when firm B was introduced to a consultant in India by a current employee, the Indian consultant lead the company to many successful partnerships. Finally, Table 27 summarises the frequency of the different roles of social capital that occurred in the internationalisation of firm B.

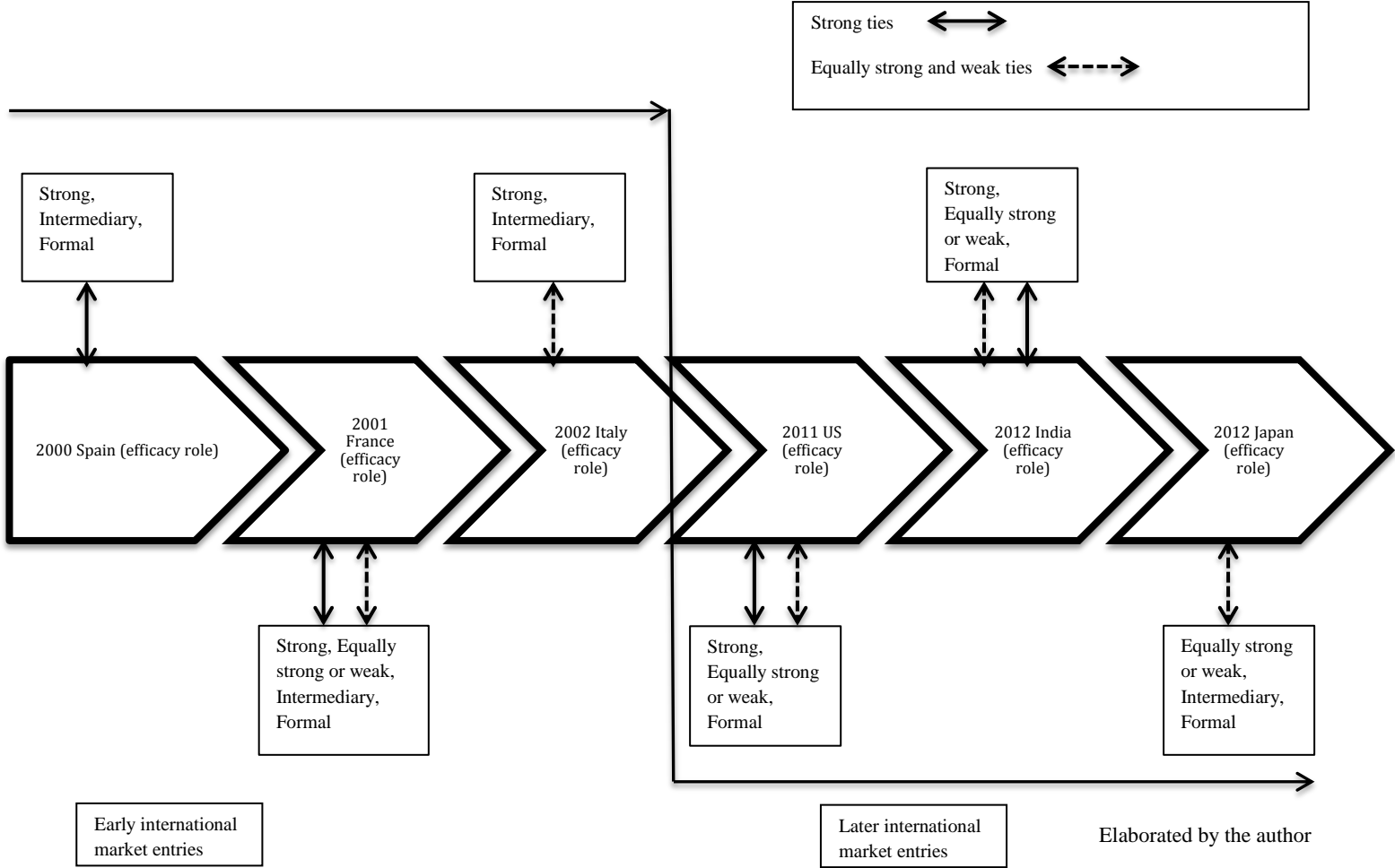
Structural holes did not act as an impediment for firm B as the company is well connected and operates in a niche market where the number of potential customers that are not already existing customers is limited. Firm B can bridge structural holes due to its reputation and well connections in the sector that operates in.

The role of internet is also important for getting necessary information on foreign markets and background information on potential partners. LinkedIn also became an important tool to track, approach and contact key people who may help firm B to get access into possible new clients.

Table 27 Case B - Roles of social capital (frequency)

Efficacy role	Serendipity role	Liability role
8	0	0

Figure 10 Case B - Evolution of social capital and structural dimension in international market entries



5.2.3 Analysis and presentation of Case C

For the purpose of this research case Firm C was examined and analysed. Firm C is a Greek High Technology SME based in Athens, Greece and in Silicon Valley in California, USA. The presentation of firm C follows the themes presented earlier.

5.2.3.1 Various dimensions and background information

Case C can be characterised as INV because of the speed of internationalisation, the number of countries operating in and the percentage of total sales coming from foreign operations.

The company was established in 2011 by a group of six people. The six founders or the core team of the company have key roles in the top management (e.g. CEO, CTO, etc.). It is important to mention at this point that the company was a spin-off of two previous separate firms that the founders had before in Greece. They decided to join their expertise and knowledge in order to establish firm C.

The company operates in the high technology sector and based on its website "...It is a next generation messaging platform that lets you exchange interactive messages and greeting cards...". Firm C develops apps for smartphones and tablets.

It is important to highlight that a number of the founders have previous international working experience mainly in the US. All the members of the top management team hold BSc and MSc degrees. The company employs 20 people and most of them work in Athens, there is also a team in Silicon Valley. There are offices in Sun Valley, in California and Athens. The company moved its headquarters in Silicon Valley immediately after its inception in order to operate in a friendlier ecosystem.

"...when we founded our company and developed the business plan, we realised soon that the founders, including myself, didn't have the necessary funds to move our business forward. So we started in 2010 searching for funding but VCs and angel investors weren't developed in Greece. Therefore, it was an easy choice for us to go to Silicon Valley to find our first investors..." (Interviewee 1)

More than 95% of total sales come from international sales. The majority of sales come from the US and Canadian markets (78%). As mentioned earlier the firm

develops apps and future customers can download the apps around the world. Firm C is mainly B2C.

The founders of the company had a vision to go abroad since the inception of the firm due to the size of the domestic market. The limited domestic market and the nature of the product pushed firm C to focus on foreign markets and more specifically the North American markets (i.e. US and Canada), (please see appendix two, quote 1 for further information).

Firm C due to the nature of its products (i.e. apps for smartphones and tablets) does not have physical presence in all the countries that its application is downloaded. In other words, internet facilitates and acts as the main medium for sales. The apps are downloaded from many countries around the world, however the main markets are the US, Canada, UK and Scandinavia.

It is important to understand how a company that develops applications starts new collaborations with other companies that can assist it to find new customers and internationalise. Firm C does not follow a “manual” when they search for partners and when they decide to start new collaborations. The company prefers to get references from existing network relationships because all processes can take place faster. The more traditional methods that firm C follows to establish new partnerships is through tradeshows or communication through cold emails.

Firm C does not face challenges in the markets where its application is downloaded. Cultural stereotypes did not affect firm C. However, the only obstacle, which was related to red tape issues was when the founders of the company decided to establish a subsidiary in Athens as the Headquarters are based in Silicon Valley (please see appendix two, quote 2 for further information).

The first major market the company targeted was the US in 2011. Firm C develops applications so its products are not physical but virtual, therefore the sales are based on how many times the applications are downloaded from different parts of the world. Firm C chose that market for its initial international market entry and for establishing its headquarters there due to the size of the market (please see appendix two, quote 3 for further information).

The second major market that the company has presence is in Canada. As mentioned earlier the markets of the US and Canada contribute more than 78% of the company's sales. The other major markets are in Europe.

Firm C did not follow different international patterns to enter foreign markets. The company runs offices in Greece and the US. The internationalisation of firm C was outwards and has had direct sales in the US, Canadian and European markets. The chosen entry mode was the establishment of offices in foreign markets. It is important to highlight again that the products of firm C are virtual; therefore, physical presence is not necessary in all markets. It is important to mention that there was a combination of low and high entry commitments followed by firm C, which highlights and justifies its characterisation as an INV.

"...We need to develop our team in the US, we currently employ 2 people in the US, one employee in San Francisco and one other in Texas. I also travel very often to the US almost once every two months... In Greece we've the R&D and production departments, in the US we've the marketing, sales and business development departments..." (Interviewee 1)

Table 28 Case C - Summary of various dimensions and background information

Year of inception	2011
Educational background of founders	BSc & MSc Holders
First country entered/Year	US/2011
Major markets entered (chronological order)	Canada, UK, Scandinavia, Estonia
Speed of internationalisation	From inception (i.e. 2011)
Number of employees	20
Percentage of sales from international operations	95%

5.2.3.2 Different roles of social capital

In the previous section the background information on firm C was presented and the reasons why the firm is characterised as an INV were also highlighted. The number of countries and the percentage of total sales coming from foreign operations were also presented.

In this section the different roles of social capital (i.e. efficacious, serendipitous and liability) are presented and how these influence the internationalisation of firm C. There will be an attempt to identify which role is more important and at what stage of internationalisation. The examination of the different roles of social capital is taking place in chronological order to capture the evolution of social capital and its influence.

5.2.3.2.1 Roles of social capital in initial international market entries

The analysis of the role of social capital begins with a focus on the initial foreign market entries. The company as mentioned in the previous section entered the US market from its inception in 2011. Firm C used a number of network relationships that the founders had in the US. The role of network relationships is paramount especially in the initial stages of internationalisation. Firm C firstly went to the US because the founders had contacts in Silicon Valley. Firm C works with Apple, the role of social capital was crucial for the successful collaboration between the two companies. The CEO through his personal network relationship managed to contact Apple (please see appendix two, quote 4 for further information). Firm C was also benefited by using its existing network relationships in order to start collaboration with another company in the US (please see appendix two, quote 5 for further information).

The role of social capital was also very important for firm C to start collaboration with AT&T in the US. One of the company's advisors used his personal network relationships in order to assist firm C to find a mobile operator, which was very important for the successful marketing strategy and penetration to the US market (please see appendix two, quote 6 for further information). Firm C has an advisory board, which has been acting and assisting the company to get access to a number of companies. The advice and introductions offered and made by these board members have been very beneficial and important not only for successful foreign market entries but also to successful international marketing campaigns (please see appendix two, quote 7 for further information).

Table 29 Case C - Roles of social capital in initial international market entries

Country	Role of social capital (see chapter 3, pages 72-73)	Supporting direct quote (please see appendix two for further details)
USA	Efficacy role	<p>... During a conversation with my friend I told him that we were looking to start collaboration with Apple, he then told me that he knew a person who was working for Apple and he would be more than happy to introduce us to him... (efficacy role – <i>Quote 4</i>)</p> <p>... One company in the US had been searching for a technology that was similar with ours, the investor remembered from our discussions our products. Therefore, he called us and asked us if you would be interested in working with that company... (efficacy role – <i>Quote 5</i>)</p>

		<p>... One of our advisors had worked for AT&T for almost 10 years. He kept in touch with his former colleagues and his introduction was credible... He managed to come in contact with the person who was in charge of business development and we were then introduced to that person... (efficacy role – Quote 6)</p> <p>...We had come in contact with the director of marketing of Expedia who helped us... (efficacy role quote – Quote 7)</p>
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5.2.3.2.2 Roles of social capital in later and future international market entries

Firm C has been very successful in the US market. As it was previously mentioned firm C does not sell physical products. For this reason it is difficult to track and analyse the sales in foreign countries. However, the company uses partners in different countries to help them out with the marketing strategy and marketing campaigns. It is paramount for the successful penetration in foreign markets to understand the needs of the customers. Firm C targets the Canadian market as well but the US offices act as a regional base for all the countries in North America. On the other hand, the offices in Greece act as a regional base for the European markets.

The company targets and tries to establish partnerships with mobile operators in Europe and more specifically with O2 in the UK in 2011. A company that assists other firms to find and target customers approached firm C in order to help it to collaborate with mobile operators, the initial serendipity role became efficacious over time (please see appendix two, quote 8 for further information).

Firm C is about to sign contracts with mobile operators in Asia. The company attended a global tradeshow in February 2014, which helped to find potential customers both in Latin America and Asia. According to the CEO of firm C the entry to the Asian markets is very close and will take place in summer 2014. It is very interesting to mention that the company managed to create new network relationships that will assist it in the near future to enter new markets (please see appendix two, quote 9 for further information).

Table 30 Case C - Roles of social capital in later international market entries

Country	Role of social capital (see chapter 3, pages 72-73)	Supporting direct quote (please see appendix two for further details)
UK	Serendipity & Efficacy role	... This company found us through the internet, because it's their job to find companies like us... (<i>serendipity role – Quote 8</i>)
Brazil (future entry)	Serendipity & Efficacy role	...We've several contacts in companies in Europe, which are more indirect we didn't approach O2 directly. We work with a company whose job is precisely this to find added value services and propose them to mobile operators... (<i>efficacy role – Quote 8</i>)
Japan or China, Singapore (future entry)	Efficacy role	...Some mobile operators from Brazil and Saudi Arabia also passed by our booth without arranging a meeting beforehand, they were very interested in our products and ideas and asked us if we would like to work with them in their countries... We didn't know any companies in Brazil but now we're very close to start collaborating with 2 companies there... (<i>serendipity and efficacy roles – Quote 9</i>)
		...I don't know yet from where we'll start, it could be China or Japan and then South Korea I suspect because I do not know even our decision whether to start first from China or Japan...We plan to enter the Asian market this summer ... (<i>efficacy role – Quote 9</i>)

5.2.3.3 Structural dimension and network closure

In the previous section the different roles of social capital in the internationalisation and future internationalisation plans of firm C were analysed and examined. The different roles of social capital were divided in initial and later international market entries in order to highlight the dynamic nature and evolution of social capital over time.

In this section the structural dimension and network closure are presented. Examining the internationalisation of firm C will allow us to better comprehend the mechanism of strong and weak ties and their relationship with social capital.

Firm C operates in the sector of smartphone and tablet applications development and more specifically in e-cards personalisation. This industry is mainly global as the applications can be downloaded from the Apple Apps Store and Google Play Store. The products are accessible to customers who own smartphones and tablets. The non-physical and online nature of the product makes it accessible throughout the world without the need for physical presence.

It was described in the previous section how the existing and new network relationships helped firm C to enter foreign markets. In the US the company used

strong and formal ties because the previous international working experience of the founders helped firm C to access key people in Silicon Valley. In addition, the Greek community acted as a facilitator factor for firm C to establish new network relationships in the US. The role of the incubator that the company firstly established its offices is highlighted in the following statement.

*“...Our decision to go to the US was a game changer, we didn’t go there dropping with a parachute. We searched for an incubator that was focusing on international companies that wanted to invest in the US. We attended an accelerator programme and in a short period of time we became familiar and understood how the American investors do business, we became familiar with the different processes and I could say that this saved us a lot of time...
...The incubator actually helped us to find our investors. We met them during an event organised by the incubator...” (Interviewee 1)*

The role of the investors was also very crucial because with their contacts and network relationships gave firm C access to their network. It is important to highlight and explain how the investors assisted firm C.

“Investor A was among the first ones who agreed to invest in our company and opened up many doors... If we hadn’t succeeded then to secure his investment now we wouldn’t have been who we’re now... Probably we would have done something else, I don’t know what would have happened. So investors A and B were definitely those people who helped us to do what we wanted to, which was to enter the US market. Investor C is the third one, an angel investor who helped in the second round of funding. He has been helping us with network relationships, strategic decisions, and the product and of course with valuable feedback. His previous company was very close to what we do, so he was very familiar with our product... I believe that these three investors were the ones who changed the status of our company...” (Interviewee 1)

Their collaboration with Apple was successful because it was based on the personal network of the CEO of the company. Strong ties were also important for all the collaborations in the US. The role of the incubator was very crucial and played an intermediary role for assisting firm C to find its current investors. The investors themselves helped firm C with their networks to successfully introduce firm C to new customers and companies that were important for the international expansion of the firm. O2 is also another example that illustrates how a third party introduced firm C to O2. Additionally, one of firm C’s investors introduced them to AT&T using his personal network relationships, strong ties and formal relationships were used.

Future market entries also highlight the importance of the strength of ties and the structure of the relationship. The intermediary role of the tradeshow that the company attended in February 2014 is very clear. Firm C is about to sign contracts with mobile operators both in Latin America and Asia. The strength of ties changes

diachronically as weak ties were more important and over time weak ties will become strong.

The following statement illustrates the importance of network relationships in the successful international expansion. The strength of ties also plays an important role in foreign market entries.

“...Actually network relationships can help you save time, especially if the introductions are credible and come from someone who is trustworthy and has a good reputation. This also helps to skip queuing, if you send a cold email like all the companies that search for collaboration...”

...Network relationships definitely make a big difference. They help you out for investment, fundraising, networking, PR and future partnerships, networks are a very big asset for a company. They can be directly attached to the company or indirectly through the investors, the network of the staff, sometimes the access to a network is a criterion to recruit someone...” (Interviewee 1)

Social capital is examined in terms of strong and weak ties (strength of the tie) and the structure of the relationship (i.e. formal, informal, intermediary). The definitions followed to investigate them are based on the extant literature.

Firm C used strong and formal ties to enter the US and UK markets, this is supported by the initial international markets entry section presentation. On the other hand, weak, intermediary and formal ties will be used in the Brazilian and Asian markets.

Table 31 Case C - Strength of ties and structure of the relationship

Country	Strength of ties and structure of relationship
US	Strong, Intermediary, Informal, Formal (Incubator, investors, friend introduced company to Apple, investor introduced company to AT&T, company was approached through the internet)
UK	Weak, Intermediary, Formal (Company was approached through the internet)
Brazil (future)	Weak, Equally strong and weak, Intermediary (Brazilian mobile operators, tradeshow)
Asia (China, Japan, South Korea/ future)	Weak, Equally strong and weak, Intermediary (Mobile operators, tradeshow)

5.2.3.4 Summary of Case C

Figure 11 depicts the evolution and role of social capital and structural dimension in the internationalisation of firm C. The foreign market entries are presented in chronological order. It is highlighted from the diagram that the efficacious role of social capital was more important for firm C. Additionally, strong

and equally strong or weak ties were important when firm C entered foreign markets. Social capital and mainly strong and weak ties had an impact on facilitating firm C to enter rapidly foreign markets. A good example is when firm C was introduced to AT&T from an investor who was a former manager in AT&T, his personal network relationships led to many successful partnerships. Finally, Table 32 summarises the frequency of the different roles of social capital that occurred in the internationalisation of firm C.

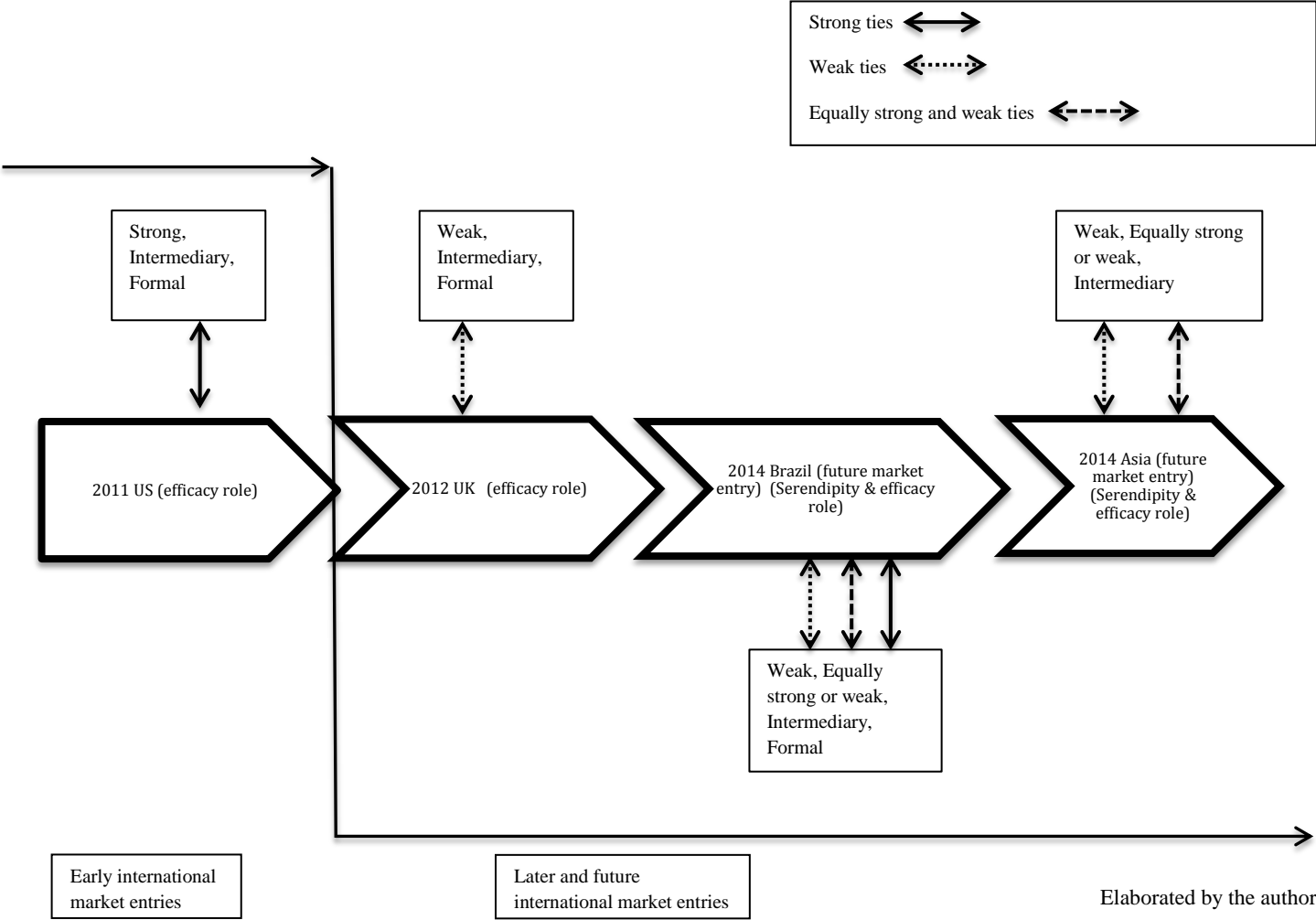
Structural holes did not act as an impediment for firm C as the company operates in a sector that is characterised by very fast internationalising firms. Additionally, the advisory board and the investors of the firm act and acted as a bridge to overcome any possible structural holes.

The role of internet is also important for getting necessary information on foreign markets and background information on potential partners. It is obvious that the internet is facilitating firm C as the company heavily relies on the digital economy and world.

Table 32 Case C - Roles of social capital (frequency)

Efficacy role	Serendipity role	Liability role
7	2	0

Figure 11 Case C - Evolution of social capital over time and structural dimension in international market entries



5.2.4 Analysis and presentation of Case D

For the purpose of this research case Firm D was examined and analysed. Firm D is a Greek High Technology SME based in Patras, Greece. The presentation of firm D follows the themes presented earlier.

5.2.4.1 Various dimensions and background information

Case D can be characterised as INV because of the speed of internationalisation, the number of countries operating in and the percentage of total sales coming from foreign operations.

The company was established in 2007 by a group of five people. The founding team was decreased to three after the inception of the firm. The three founders or the core team of the company have kept key roles in the top management (e.g. CEO, CTO, etc.). The company operates in the high technology sector and based on its website “the firm specialises in designing and developing mobile and embedded computer graphics solutions”.

It is important to highlight that only one of the founders has previous international working experience in the UK. All the members of the top management team hold a PhD degree, except of the CEO who holds an MSc. The company employs 15 people and most of them work in Patras, Greece. The company runs also a common office in Silicon Valley with other companies.

Over 80% of total sales come from international operations. The founders of the company had a vision to go abroad since the inception of the firm due to the size of the domestic market. The company cannot survive in the domestic market due to the very limited number of potential customers.

The firm operates in developed and developing markets such as the US, the Netherlands and Taiwan. The first market that the company entered was the Netherlands in 2009, two years after its inception. Firm D has not faced serious cultural issues in the countries it operates in. The only cultural problem was in Taiwan where the company faced language issues with its partner.

Cultural stereotypes did not act as impediment for firm D, however, the main issue was that the firm is geographically not close to its markets (i.e. the US, Taiwan). Customers have also concerns due to the size of the firm and the possibility that the firm might not be financially viable in the future (please see appendix two, quote 1 for further information).

The first major market the company entered was the Netherlands in 2009. The second country the company entered was the US in 2011 and the Taiwanese market in 2011. Firm D followed different international patterns to enter foreign markets and sale its products. The company runs offices in Greece and the US. The chosen entry mode was the establishment of offices in one foreign market (i.e. the US). The other entry mode choice was the establishment of partnerships with other companies for example in the Netherlands and Taiwan (please see appendix two, quote 2 for further information). The internationalisation of firm D was outward and had direct sales mainly in the US market. It is important to mention that there was a combination of low and high entry commitments followed by firm D, which highlights and justifies its characterisation as an INV.

Table 33 Case D - Summary of various dimensions and background information

Year of inception	2007
Educational background of founders	PhD & MSc Holders
First country entered/Year	Netherlands/2009
Major markets entered (chronological order)	US, Taiwan, India
Speed of internationalisation	Two years after the inception (i.e. 2009)
Number of employees	15
Percentage of sales from international operations	80%

5.2.4.2 Different roles of social capital

In the previous section the background information on firm D was presented and the reasons why the firm is characterised as an INV were also highlighted. The number of countries and the percentage of total sales coming from foreign operations were also presented.

In this section the different roles of social capital (i.e. efficacious, serendipitous and liability) are presented and how these influence the internationalisation of firm D. There will be an attempt to identify which role is more important and at what stage of internationalisation. The examination of the different

roles of social capital is taking place in chronological order to capture the evolution of social capital and its influence.

5.2.4.2.1 Roles of social capital in initial international market entries

The analysis of the role of social capital begins with a focus on the initial foreign market entry. The company as mentioned in the previous section entered the Dutch market in 2009. Firm D used a number of network relationships that the founders had in Greece in order to introduce them to the Dutch firm. The role of network relationships is paramount especially in the initial stages of internationalisation (please see appendix two, quote 3 for further information).

Firm D after collaborating with the Dutch firm enhanced its legitimacy and reputation, which was very beneficial for its future plans and foreign market entries. Companies in the industry perceived firm D as more legitimate and reliable.

Table 34 Case D - Roles of social capital initial international market entries

Country	Role of social capital (see chapter 3, pages 72-73)	Supporting direct quote (please see appendix two for further details)
Netherlands	Efficacy role	<i>...The Dutch company we've been working with has a department in Greece... The employees from the Greek department recommended us to the headquarters in the Netherlands... (efficacy role – Quote 3)</i>

5.2.4.2.2 Roles of social capital in later international market entries

Firm D was very successful in the Dutch market. The legitimacy gained from the Netherlands helped firm D to be better established in its sector. Two years after the initial market entry the firm continued its international expansion in the US and Taiwanese markets. Firm D entered the previous mentioned markets the same year (i.e. 2011). The entrance to the Indian market took place in 2012 again with the help of a tradeshow.

The entrance into the US market was facilitated by a tradeshow that firm D attended in Las Vegas. The company met its current US partner in the tradeshow. The role of the cluster that the company operates in Greece was important in facilitating the attendance to the tradeshow in the US (please see appendix two, quote

4 for further information). The Greek community also helped firm D to get access to companies in the US and helped the company to overcome obstacles like cultural differences (please see appendix two, quote 5 for further information).

Firm D entered the Taiwanese market the same year that entered the US market (2011). The choice of the Taiwanese market was made based on the number of companies that operate there. The company found its current partner in Taiwan through a tradeshow that attended. Attending the tradeshow in Taiwan would have been impossible without the financial assistance of the cluster, which firm D operates in (please see appendix two, quote 6 for further information).

The serendipity role of social capital was important in the case of the Indian market entry in 2012. Attending a tradeshow in the US was beneficial for firm D to find its current partner (please see appendix two, quote 7 for further information).

Table 35 Case D - Roles of social capital in later international market entries

Country	Role of social capital (see chapter 3, pages 72-73)	Supporting direct quote (please see appendix two for further details)
USA	Efficacy role	<i>...In the US we found our customers by ourselves through tradeshows and online portals/associations... (efficacy role – Quote 4)</i> <i>...The Greek community in the US and more specifically in California helped us out with finding key contacts in American companies ... (efficacy role – Quote 5)</i>
Taiwan	Serendipity role	<i>...We entered the Taiwanese market in 2011, we attended a tradeshow there and found our current partner... (serendipity role – Quote 6)</i>
India	Serendipity role	<i>... We attended a tradeshow in the US and we were able to find our current partner in India... (serendipity role – Quote 7)</i>

5.2.4.3 Structural dimension and network closure

In the previous section the different roles of social capital in the internationalisation of firm D were analysed and examined. The different roles of social capital were divided in initial and later international market entries in order to highlight the dynamic nature and evolution of social capital over time.

In this section the structural dimension and network closure are presented. Examining the internationalisation of firm D will allow us to better comprehend the mechanism of strong and weak ties and their relationship with social capital.

Firm D operates in the sector of mobile computer graphics solutions. The international expansion strategy of firm D was based the last years on finding partners and attending tradeshows.

“...We enter new markets attending tradeshows and finding our partners there... We basically rely on the existing network that our partner has...”
(Interviewee 1)

It was described in the previous section how the existing network relationships helped firm D to enter foreign markets. In the Netherlands the company used strong and formal ties because the founders' existing network relationships from their previous work introduced them to their Dutch customer. The case of the US and Taiwan are quite similar because firm D attended tradeshows and found its partners there. The only difference is that firm D used also the Greek community in the US to help them out with new customers. The entrance to the Indian market was again successful because firm D attended a tradeshow where it found its current partner. Moreover, it can be concluded that in later international market entries the importance of the cluster in Greece and the Greek expats in Silicon Valley were crucial in the successful entry in the US, Taiwanese and Indian markets.

“...The Greek community in the US helped us out to contact with key people in the high tech sector in Silicon Valley, the role of the cluster in Greece has played a very important role. Without its help we couldn't have attended the tradeshows as those are costly for a company of our size... In addition, the tradeshows became very beneficial for our international expansion because we found our current partners in major markets via the tradeshows...”
(Interviewee 1)

The following statement illustrates the importance of network relationships in the successful international expansion. The strength of ties also plays an important role in foreign market entries.

“... Even you've more funds, you're trying to find people/partners who have access and contacts to target companies. You're actually trying to sell your product to a customer; therefore you need to find key people to help you out. We've been always following this, when we choose a partner we want him/her to have very good access and network relationships. This happened in the US, Taiwan and India. Our current partners have very good access and big network... It's important to find a qualified partner that can add value to the partnership... The partnership should be based on mutual trust and the partner should have all the necessary knowledge to successfully promote your product...” (Interviewee 1)

Existing clients and partners also assisted firm D to access companies that did not have any contacts. This happened in the case of the Netherlands and the US.

“... Your network relationships can bring you in contact with the right people in a company you want to approach. For example you want to go to company A, but you cannot because

you don't have access. So you need someone to recommend you. This happened in the Netherlands and in the case of finding one of our partners in the US..." (Interviewee 1)

Social capital is examined in terms of strong and weak ties (strength of the tie) and the structure of the relationship (i.e. formal, informal, intermediary). The definitions followed to investigate them are based on the extant literature.

Firm D used strong and formal ties to enter the Dutch market, this is supported by the initial international markets entry section presentation. On the other hand, weak, equally strong and weak, intermediary and formal ties were used in the US, Taiwanese and India markets entry.

Table 36 Case D - Strength of ties and structure of the relationship

Country	Strength of ties and structure of relationship
Netherlands	Strong, Formal (Former colleagues introduced to the Dutch client)
USA	Strong, Equally strong and weak, Intermediary, Formal (Cluster's programme to subsidy tradeshows, tradeshows, expats)
Taiwan	Strong, weak, Intermediary, Formal, (Cluster's programme to subsidy tradeshows, tradeshows)
India	Equally strong and weak, Intermediary, Formal (Cluster's programme to subsidy tradeshows, tradeshows)

5.2.4.4 Summary of Case D

Figure 12 depicts the evolution and role of social capital and structural dimension in the internationalisation of firm D. The foreign market entries are presented in chronological order. It is highlighted from the diagram that the efficacious role of social capital was more important for firm D. Additionally, strong and equally strong or weak ties were important when firm D entered foreign markets. Social capital and mainly strong and equally strong or weak ties had an impact on facilitating firm D to enter rapidly foreign markets. Finally, Table 37 summarises the frequency of the different roles of social capital that occurred in the internationalisation of firm D.

Structural holes act as an impediment for firm D as the company is not well connected even if it operates in a niche market where the number of potential customers is limited. Firm D manages to bridge structural holes using its network

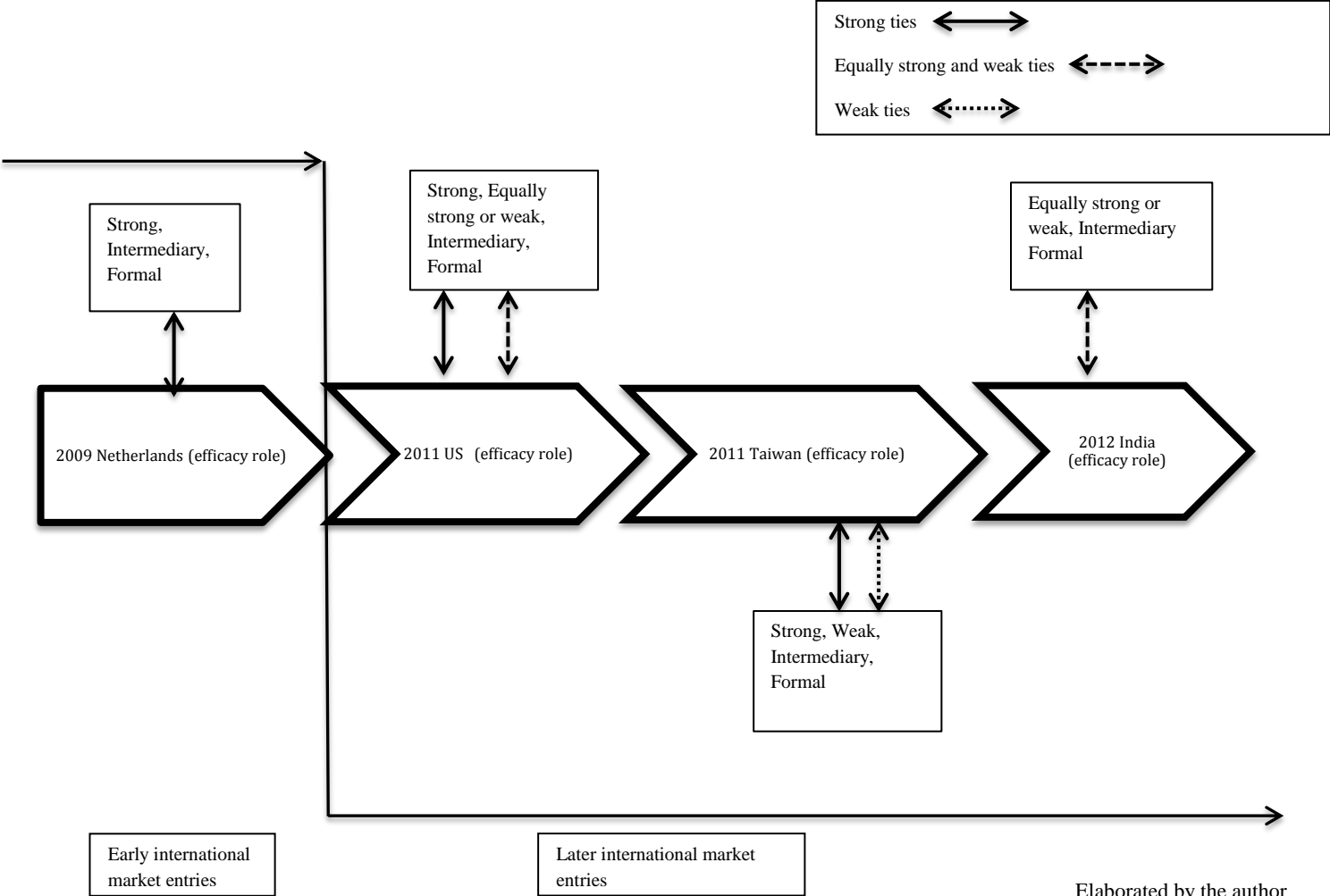
relationships, the assistance from the cluster it operates in and the associations that the company is member.

The role of internet is also important for getting necessary information on foreign markets and background information on potential partners. LinkedIn also became an important tool to track, approach and contact key people who may help firm D to get access into possible new clients.

Table 37 Case D - Roles of social capital (frequency)

Efficacy role	Serendipity role	Liability role
3	2	0

Figure 12 Case D - Evolution of social capital over time and structural dimension in international market entries



5.2.5 Analysis and presentation of Case E

For the purpose of this research case Firm E was examined and analysed. Firm E is a Greek High Technology SME based in Patras, Greece. The presentation of firm E follows the themes presented earlier.

5.2.5.1 Various dimensions and background information

Case E can be characterised as INV because of the speed of internationalisation, the number of countries operating in and the percentage of total sales coming from foreign operations.

The company was established in 2009 by a group of three people. The three founders or the core team of the company keep key roles in the top management (e.g. CEO, CTO, etc.). The company operates in the high technology sector and based on its website “the firm develops software and silicon IPs for Embedded Video Processing”.

It is important to highlight that none of the founders have previous international working experience. All the members of the top management team hold a PhD degree. The company employs 11 people and all of them work in Patras, Greece. The company also runs a common office in Silicon Valley with other companies, an initiative that has started from an association of high tech Greek firms.

30% of total sales come from international operations. The founders of the company had a vision to go abroad since the inception of the firm due to the size of the domestic market. The firm decided to internationalise due to the small domestic market.

The firm operates in developed and developing markets such as the US, Germany, Japan, Israel, South Korea and China. The first market that the company entered was Israel in 2010, one year after its inception.

Firm E has not faced serious cultural issues in the countries it operates in. The only cultural problem was in Germany where the company faced scepticism and language issues with its partner. However, cultural stereotypes did not act as an impediment.

The first major market the company entered was Israel in 2010. The second country the company entered was the US in 2011 and the German, Japanese, South Korean markets in 2012. The last market that firm D entered was the Chinese one in 2013.

Firm E followed similar international patterns to enter foreign markets and sale its products. The company runs offices in Greece. The chosen entry mode was the establishment of partnerships in major high technology hubs like Israel, the US, Japan and South Korea. The internationalisation of firm E was outward and had sales through partnerships in the US and Israel. It is important to mention that mainly low entry commitments followed by firm E in psychically distant countries (i.e. US, Japan, South Korea and China), which highlights and justifies its characterisation as an INV.

Table 38 Case E - Summary of various dimensions and background information

Year of inception	2009
Educational background of founders	PhD Holders
First country entered/Year	Israel/2010
Major markets entered (chronological order)	US, Germany, Japan, South Korea, China
Speed of internationalisation	One year after the inception (i.e. 2010)
Number of employees	11
Percentage of sales from international operations	30%

5.2.5.2 Different roles of social capital

In the previous section the background information on firm E was presented and the reasons why the firm is characterised as an INV were highlighted. The number of countries and the percentage of total sales coming from foreign operations were also presented.

In this section the different roles of social capital (i.e. efficacious, serendipitous and liability) are presented and how these influence the internationalisation of firm E. There will be an attempt to identify which role is more important and at what stage of internationalisation. The examination of the different roles of social capital is taking place in chronological order to capture the evolution of social capital and its influence.

5.2.5.2.1 Roles of social capital in initial international market entries

The analysis of the role of social capital begins with a focus on the initial foreign market entries. The company as mentioned in the previous section entered the Israeli market in 2010. Firm E found its partner in Israel through a tradeshow. Firm E did not have many network relationships in foreign markets to help it finding customers and partners. The role of network relationships was not important in the initial market entry (please see appendix two, quote 1 for further information). Firm E after collaborating with the Israeli firm enhanced its legitimacy and reputation, which was very beneficial for its future plans and foreign market entries (please see appendix two, quote 2 for further information).

The successful partnership with the Israeli company led to a successful partnership in the US. Firm E entered the US market in 2011 a year after the initial foreign market entry in Israel. The serendipitous and efficacious roles of social capital played an important role in the establishment of a partnership with a US firm. Firm E attended a tradeshow and during a presentation to an Israeli customer the representative of a US passed by firm E's booth and listened to their presentation. The representative of the US firm was very interested in firm E's products and approached them in order to start the initial discussions. From the initial discussions a very successful partnership was established (please see appendix two, quote 3 for further information).

Table 39 Case E - Roles of social capital in initial international market entries

Country	Role of social capital (see chapter 3, pages 72-73)	Supporting direct quote (please see appendix two for further details)
Israel	Efficacy role	<i>...We went to Israel first because we attended a tradeshow where we found our customer. We had arranged a meeting with them some weeks before the tradeshow ... (efficacy role – Quote 1)</i>
USA	Efficacy and Serendipity role	<i>... We went to a tradeshow in Israel, during our presentation to a current customer other people were there listening to our presentation. Amongst those people was the representative of a US company in Israel... (efficacy role – Quote 3)</i> <i>...We had never met him before neither we had arranged to meet him in the tradeshow, he just passed by our booth... (serendipity role – Quote 3)</i>

5.2.5.2.2 Roles of social capital in later international market entries

Firm E was very successful in the Israeli and the US markets. The legitimacy gained from Israel and the US helped firm E to be better established in its sector. Two years after the initial market entry the firm continued its international expansion in the German, Japanese and South Korean markets in 2012. The entrance to the Chinese market took place in 2013 again with the help of a tradeshow and firm E's existing network relationships.

The entrance into the German market was facilitated by the US partner. The company got a reference from its US partner and was important for its successful collaboration with a German customer. The German market choice was also very important because a big number of potential customers operate there, as mentioned earlier (please see appendix two, quote 4 for further information).

Firm E entered the Japanese market using two different methods. The first one was a reference from the US partner. The second method was facilitated by the internet, where a company found firm E in a google search (please see appendix two, quote 5 for further information).

Firm E entered the South Korean market the same year that entered the German and Japanese markets (2012). The choice of the South Korean market was made based on the number of smartphone and tablet companies producers that operate there. The current partner in South Korea found firm E in an online association that both companies are members. The importance of the internet especially in high technology companies is highlighted with the previous example (please see appendix two, quote 6 for further information).

The different roles of social capital are highlighted also in the case of the Chinese market entry in 2013. Firm E got a reference from the US partner and introduced it to the Chinese customer (please see appendix two, quote 7 for further information).

Table 40 Case E - Roles of social capital in later international market entries

Country	Role of social capital (see chapter 3, pages 72-73)	Supporting direct quote (please see appendix two for further details)
Germany	Efficacy role	<i>...In Germany we found one of our customers by getting a reference from our US partner... (efficacy role – Quote 4)</i>
Japan	Efficacy and Serendipity role	<i>...The first Japanese customer was found from a reference that came from our US customer... (efficacy role – Quote 5)</i> <i>...The third Japanese customer found us online through a Google search... (serendipity role – Quote 5)</i>
South Korea	Efficacy role	<i>...We're members of an online association of semiconductor IP firms ... We received an email from our current partner in South Korea expressing their interest in a potential collaboration... (efficacy role – Quote 6)</i>
China	Efficacy role	<i>...We were discussing with our partner in the US...They introduced us to our Chinese customer and gave us a reference... (efficacy role – Quote 7)</i>

5.2.5.3 Structural dimension and network closure

In the previous section the different roles of social capital in the internationalisation of firm E were analysed and examined. The different roles of social capital were divided in initial and later international market entries in order to highlight the dynamic nature and evolution of social capital over time.

In this section the structural dimension and network closure are presented. Examining the internationalisation of firm E will allow us to better comprehend the mechanism of strong and weak ties and their relationship with social capital.

Firm E operates in the sector of semiconductor IP. The international expansion strategy of firm E was based the last years on finding partners and attending tradeshows.

“...Tradeshows and the collaboration with a bigger US company were paramount for our international expansion, those were our internationalisation milestones. We initially found our first customer in a tradeshow and then getting references we successfully established partnerships. So instead of using 100% of your own efforts you can rely on the references given to you, your partners may also suggest you to target specific companies that can be potential customers. If we directly approach a company it's very important to mention that you work with company A or B because this enhances your credibility...” (Interviewee 1)

It was described in the previous section how the existing network relationships and tradeshows helped firm E to enter foreign markets. In Israel the company used weak, intermediary and formal ties because the founders found their first customer through a tradeshow. The case of the US market entry was based on finding a partner in a tradeshow in Israel, weak, intermediary and formal ties were

used in this case. In the German market the company used its existing partner in the US to get access to the market so strong and formal ties were used. The Japanese market entry is unique because three different approaches were used, which include attendance of a tradeshow (weak, intermediary and formal ties), getting reference from the US partner (strong and formal ties) and approached from a customer through the internet (weak, intermediary and formal ties). Weak, intermediary and formal ties were used in South Korea because through an online association firm E was approached. In the case of China strong and formal ties were used for finding a customer there by getting a reference from the US partner in other words strong and formal ties were used.

The importance of current partners is highlighted in the following statement. They are very important to sell and promote firm E's products but they also give it references and introductions to new customers.

"...Our partners sell and promote our product, they also introduce us to new customers. Some of our partners resell our products so it's important to use their own network and of course we always find partners that have a big network..." (Interviewee 2)

The following statement illustrates the importance of network relationships in the successful international expansion. Network relationships are also perceived as a strategic asset for firm E. Alliances are also important for finding new customers and partners.

*"... Network relationships have been definitely important for our international expansion... We also target alliances and associations both in Greece and abroad because there is a big pool of potential customers in these associations. These alliances and groups are very specific and close to what we do... Being member of an international alliance is beneficial for many reasons, like finding new customers but on the other hand the membership is very expensive for a small company like us...
... Alliances are very important because they keep you updated and you can find new customers. Most of the companies in the industry that we want to work with are members in these alliances... You can find key people through these alliances because if you want to collaborate with big companies you've to approach and contact with key people..." (Interviewee 1)*

Table 41 Case E - Strength of ties and structure of the relationship

Country	Strength of ties and structure of relationship
Israel	Weak, Intermediary (Attended Tradeshow)
USA	Weak, Intermediary (Attended Tradeshow)
Germany	Strong, Weak, Formal, Intermediary (US partner introduced firm E to German customer, attended tradeshow)
Japan	Strong, Weak, Formal, Intermediary, Formal (Reference from US partner, attended tradeshow, approached through the internet)

South Korea	Weak, Intermediary, Formal (Approached through online association)
China	Strong, Formal (Reference from US partner)

5.2.5.4 Summary of Case E

Figure 13 depicts the evolution and role of social capital and structural dimension in the internationalisation of firm E. The foreign market entries are presented in chronological order. It is highlighted from the diagram that the efficacious role of social capital was more important for firm E. Additionally, weak and strong ties were important when firm E entered foreign markets. Social capital and strong and weak ties had mainly an impact on facilitating firm E to enter rapidly foreign markets. A good example is when firm E established links with the US partner, the US partner helped firm E to successfully find customers and enter new markets. Finally, Table 42 summarises the frequency of the different roles of social capital that occurred in the internationalisation of firm E.

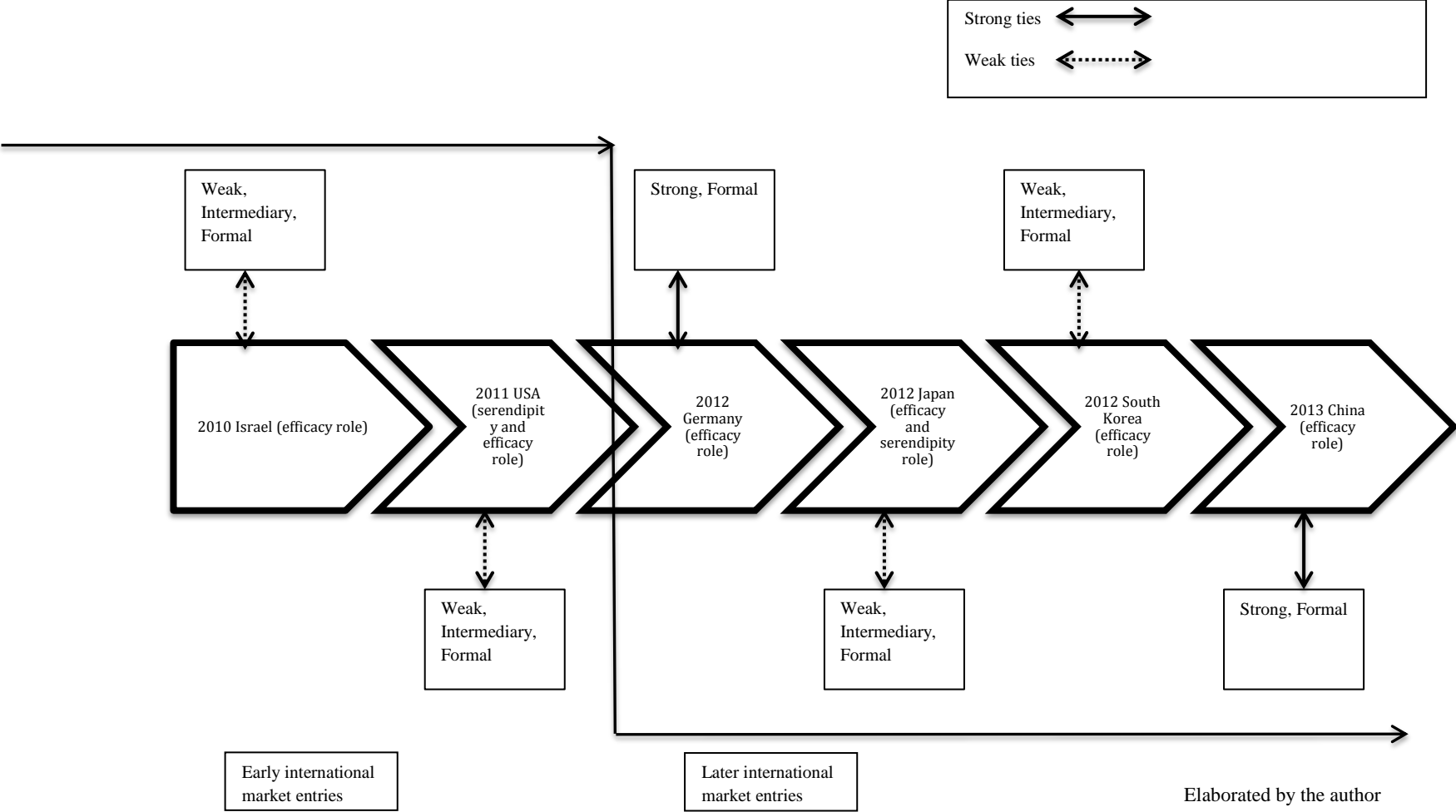
Structural holes have been acting as an impediment for firm E. The company is not well connected and operates in a niche market where the number of potential customers is limited, however, the major players in this market are big MNEs and establishing links with them was challenging. Firm E can bridge structural holes using its current partners and attending tradeshows.

The role of internet is also important for getting necessary information on foreign markets and background information on potential partners. LinkedIn played a minor role as a tool to track key people who may help firm E to get access into possible new clients.

Table 42 Case E - Roles of social capital (frequency)

Efficacy role	Serendipity role	Liability role
7	2	0

Figure 13 Case E - Evolution of social capital over time and structural dimension in international market entries



5.2.6 Analysis and presentation of Case F

For the purpose of this research case Firm F was examined and analysed. Firm F is a Scottish High Technology SME based in Edinburgh, UK. The presentation of firm F follows the themes presented earlier.

5.2.6.1 Various dimensions and background information

Case F can be characterised as INV because of the speed of internationalisation, the number of countries operating in and the percentage of total sales coming from foreign operations.

The company was established in 1997 by a group of four people. Thirteen years after the inception of the company the current CEO bought the shares from the other three shareholders. The company operates in the high technology sector and based on its website “we are a software company specialising in web site analysis tools”.

It is important to highlight that the founder of the company has previous international experience in the US and more specifically in Seattle. All the members of the top management team hold a BSc degree. The company employs 4 people and all of them work in Edinburgh, UK.

More than 90% of total sales come from international operations. The founder of the company had a vision to go abroad since the inception of the firm due to the size of the domestic market.

“...Certainly we set it out to be very export oriented. Partly because the market for the software we sell to was too small in the UK, to make a decent business worldwide is quite a big market but only one country is not viable...” (Interviewee 1)

The firm operates in more than 50 countries both in developed and developing markets. The first market that the company entered was the US in 1997.

“...Our major market is the US that’s about 60% of the sales and then after that it’s Australia, Canada, UK, Singapore, Hong Kong...” (Interviewee 1)

Firm F has not faced serious cultural issues in the countries it operates in. The only exemption has been the Indian market where the business culture is different. Another issue that the company faced in India is the different ecosystem and the

major difference in taxation (please see appendix two, quote 1 for further information). A very illustrative example regarding language differences was given by the CEO of firm F. There was a misunderstanding between the CEO of the company and a Polish customer due to the misinterpretation of their communication regarding an order, which highlights the importance of cultural differences when conducting business abroad (please see appendix two, quote 2 for further information).

The first major market the company entered was the US in 1997. The second country the company entered was Canada the same year. The market entry in Australia took place in 1997. The market entries in Hong Kong and Singapore took place in 1998 and 2000 respectively. The last countries firm F entered were India (2000) and Japan (2001), (please see appendix two, quote 3 for further information).

Firm F followed similar international patterns to enter foreign markets and sale its products. The company runs offices in the UK. The firm followed the same entry mode to every market, online sales and sales through resellers. It is important to mention that mainly low entry commitments followed by firm F in both psychically distant and close countries. The speed of internationalisation and number of countries, which Firm F operates in highlights and justifies its characterisation as an INV.

Table 43 Case F - Summary of various dimensions and background information

Year of inception	1997
Educational background of founders	BSc Holder
First country entered/Year	US/1997
Major markets entered (chronological order)	Canada, Australia, Hong Kong, Singapore, India, Japan
Speed of internationalisation	From inception (i.e. 1997)
Number of employees	4
Percentage of sales from international operations	90%

5.2.6.2 Different roles of social capital

In the previous section the background information on firm F was presented and the reasons why the firm is characterised as an INV were also highlighted. The number of countries and the percentage of total sales coming from foreign operations were also presented.

In this section the different roles of social capital (i.e. efficacious, serendipitous and liability) are presented and how these influence the internationalisation of firm F. There will be an attempt to identify which role is more important and at what stage of internationalisation. The examination of the different roles of social capital is taking place in chronological order to capture the evolution of social capital and its influence.

5.2.6.2.1 Roles of social capital in initial international market entries

The analysis of the role of social capital begins with a focus on the initial foreign market entries. The company as mentioned in the previous section entered the US market in 1997. Firm F was approached from resellers through the internet in only one case the firm approached a credit card payment company in the US. The role of network relationships was not important in the initial market entry (please see appendix two, quote 4 for further information).

Firm F approached a company in the US that processes online transactions. Firm F was a member of an online community and got a reference and recommendation to collaborate with the company in the US. This highlights the importance of digital economy and the role of internet (please see appendix two, quote 5 for further information). The role of the internet was also very important for firm F to be approached by NASA. NASA wanted to acquire and use the software developed by firm F (please see appendix two, quote 6 for further information).

The successful entry to the US market led to another success in the Canadian market. The company has mainly used its existing partnerships in the US to approach new customers and sell its products. Additionally, the previous international working experience helped the CEO of firm F to better comprehend how businesses in Canada operate (please see appendix two, quote 7 for further information).

Table 44 Case F - Roles of social capital in initial international market entries

Country	Role of social capital (see chapter 3, pages 72-73)	Supporting direct quote (please see appendix two for further details)
USA	Efficacy and serendipity role	<p><i>...We approached company B because at the time we were with another company that processed credit cards... It was an online community actually for software companies... Software companies could go and meet and ask business questions... They gave us a reference and recommendation... (efficacy role – Quote 5)</i></p> <p><i>...NASA came to us. A lot of that happens because (people are coming to us) often when people are looking for a new product first thing they do is they type something into Google... (serendipity role – Quote 6)</i></p>
Canada	Efficacy role	<p><i>...My previous contacts helped me out to find a customer in Canada, our US partner has also found us many customers in Canada... (efficacy role – Quote 7)</i></p>

5.2.6.2.2 Roles of social capital in later international market entries

Firm F was very successful in the US and Canadian markets. The partnership with the US reseller proved to be very beneficial for firm F because through this reseller many customers were found in a big number of countries. Internet has been playing a paramount role for the successful internationalisation of firm F. As described earlier the company offers virtual products only. In other words, the internationalisation is strongly related to the digital economy.

The initial entry to the Australian market took place in late 1997. The international expansion continued in Hong Kong (1998) and Singapore (2000). Firm E entered the Indian market in 2000 and the Japanese market in 2001. The dates stated earlier refer to the initial entry in those markets. The company has been actively selling its products in these markets since the initial entry.

The entrance into the Australian market was facilitated by an online community that can be perceived as a steering group that advises the Australian government and companies about websites accessibility for disabled people (please see appendix two, quote 8 for further information).

An online community in Australia approached firm F and they have been recommending the company to other customers. This has been very helpful for firm F because its products are also promoted by this online community (please see appendix two, quote 9 for further information).

Tradeshows have been also beneficial for firm F to get in touch with existing customers and find new ones. This is illustrated when the company attended a

conference in Australia and contacted people from the Australian government that would not be able to approach otherwise (please see appendix two, quote 10 for further information).

The case of Hong Kong and Singapore are interesting as well. The company used resellers to enter these markets successfully. However, the CEO stated that they decided to enter these markets because there were pull market effects (please see appendix two, quote 11 for further information). The followed internationalisation pattern in Hong Kong and Singapore was the same with the previous market entries in the US and Canada. The company was approached by resellers in these markets (please see appendix two, quote 12 for further information). The presence in Hong Kong can be characterised successful not only for the domestic market but also for offering firm F opportunities in other market like China. The company entered the Chinese market but its presence is limited.

Firm F entered the Indian market by using resellers; the resellers approached the company and expressed their interest in its products. The same pattern that was used in other countries for entering the market was followed (please see appendix two, quote 13 for further information). However, the Indian market has been the most problematic one. The founder's network relationships mitigate the issues that the firm faces in this Asian market. The CEO takes advices from his network relationships regarding the taxation system in India in order to learn how other firms deal with those issues.

Firm F found resellers in the Japanese market through the founder's network relationships, it was also approached directly from resellers. It is also highlighted that the resellers are not strongly committed to their partners since their main interest lies in selling products without supporting the customers (please see appendix two, quote 14 for further information).

Table 45 Case F - Roles of social capital in later international market entries

Country	Role of social capital (see chapter 3, pages 72-73)	Supporting direct quote (please see appendix two for further details)
Australia	Efficacy and serendipity role	<i>...They came to us, they were looking initially for somebody who could help them out... (serendipity role – Quote 9)</i> <i>...Yes there is kind one network that we do use. One of these is the software check board it's called accessibility and it's for websites used by disabled people and there is a very small global community... (efficacy role – Quote 8)</i>
Hong Kong	Serendipity role	<i>...The same pattern has been true with other resellers, people from Hong Kong and Singapore wanted to be resellers, because one of their customers had asked them how can we buy the software through you... (serendipity role – Quote 12)</i>
Singapore	Serendipity role	<i>...The same pattern has been true with other resellers, people from Hong Kong and Singapore wanted to be resellers, because one of their customers had asked them how can we buy the software through you... (serendipity role – Quote 12)</i>
India	Serendipity role	<i>...The resellers found us online because some of their customers were very interested in our products. They approached us by a cold email and the match was very good... (serendipity role – Quote 13)</i>
Japan	Efficacy and serendipity role	<i>...I approached a reseller in Japan but most of them found us through the internet... (efficacy and serendipity role – Quote 14)</i>

5.2.6.3 Structural dimension and network closure

In the previous section the different roles of social capital in the internationalisation of firm F were analysed and examined. The different roles of social capital were divided in initial and later international market entries in order to highlight the dynamic nature and evolution of social capital over time.

In this section the structural dimension and network closure are presented. Examining the internationalisation of firm F will allow us to better comprehend the mechanism of strong and weak ties and their relationship with social capital.

Firm F operates in the sector of web site analysis tools. The company relies on online communities to get useful information on foreign markets and financial advice.

“...You need to know some knowledge at the start to judge. Some communities are really good and some are really bad, there are more bad ones than good ones. So finding a good one is quite hard, but if generally people can answer questions on topics you're already known then you know that the rest of the information coming back is reasonably accurate, you can crosscheck it or ask a second opinion. Sometimes these forums are run by venture capitalists and the reason they run these things is that they are looking for people that have got good ideas an easy way for them to decide...” (Interviewee 1)

It was described in the previous section how the existing network relationships, tradeshows and the internet helped firm F to enter foreign markets. In the US the company used weak, intermediary and formal ties because the founder found his first customer through the internet, in addition a customer approached firm F through the internet. The case of Canada was based on strong and formal ties because the first customer was found by a reference from the founder's existing network relationships. Furthermore, the reseller from the US introduced firm F to new customers. The Australian case is also interesting because the evolution of social capital and strength of ties is highlighted. The company used weak and intermediary ties that changed to strong and formal ties. The cases of Hong Kong and Singapore also describe the importance of weak, intermediary and formal ties. Firm F was approached by resellers in both markets (i.e. Hong Kong and Singapore). The ties occurred in the Indian market followed the same pattern like in Hong Kong and Singapore because the company was approached through the internet from a reseller. Finally, the market entry in Japan was influenced by equally strong and weak ties, weak, intermediary and formal ties. The founder of the company used to work for a company that was acquired by a Japanese one so the founder had a number of contacts in Japan. Moreover, the role of the internet was also crucial as the company was also approached by a Japanese reseller.

The importance of existing network relationships and the knowledge these offer is highlighted in the cases of the US and Australia current partners is highlighted in the following statements.

"... Knowledge can influence our decision making, a good example of that was that we've kind of made contact with somebody in this network accessibility professionals in Australia 3 to 4 years ago that have really helped us to make a successful market in Australia, we were selling a bit in Australia before but after speaking to them in a lot of detail we understood what the market needed and sold more in there and actually knowing them turned into speaking engagements including the conference I was speaking about recently. You can cultivate contacts but you cannot really tell which ones at the beginning are going to be useful or not it's just kind of numbers that you need to know a lot of people, it's useful to know a lot of people because a few of them will turn out to be useful..." (Interviewee 1)

Structural holes have been acting as an impediment for firm F especially in penetrating and augmenting its market share in major markets like the US and Australia.

"...It is not helped in other markets yet but knowing that we really need some contacts like that in the US market to take more advantage of the US market because we do quite a lot of

sales there but we've got small market share there, and having a better network there would actually drive sales forward. We do have pretty good customers there like NASA for example but we could get a lot more if you would have a better network..." (Interviewee 1)

On the other hand network relationships have been offering valuable information on taxation and other issues that may hinder the internationalisation of firm F. They also assisted the company to enter the countries faster.

"They do help because one of the things that are always difficult is dealing with tax regulations, legal stuff. Having networks that know about that (international tax, stuff like that) it's kind of useful because getting advise about that is extremely expensive, whereas if you've got somebody there that has done it already they can kind of point out here is what we do, here are all the problems we had when we did that you should do this instead, this sort of advice, which is really useful. Having a network for that is great." (Interviewee 1)

The following statement illustrates the importance of network relationships in the successful international expansion. Network relationships are also perceived as a strategic asset for firm F.

"...It's useful but it isn't absolutely essential and part of that is down to my personality. So probably having a network is a useful backup but in reality although they're there I don't use them so often. There are a few things that are very important I will go and ask for example when the company was bought out, the guy I was talking about was the VP of finance of a software company here so I went with all the sales projections and that was kind of useful just a confirmation that I didn't mess up with figures..." (Interviewee 1)

Table 46 Case F - Strength of ties and structure of the relationship

Country	Strength of ties and structure of relationship
USA	Weak, Intermediary (Reseller approached firm F through the internet, firm F approached a company through the internet)
Canada	Strong, Formal (Reseller from the US introduced firm F to customers)
Australia	Weak, Strong, Intermediary, Formal (Online community approached them, online community gave them reference to customers)
Hong Kong	Weak, Intermediary, Formal (Reseller approached firm F online)
Singapore	Weak, Intermediary, Formal (Reseller approached firm F)
India	Weak, Intermediary, Formal (Reseller approached firm F)
Japan	Equally strong and weak, weak, Intermediary, Formal (firm F approached a reseller using previous contacts, resellers approached firm F)

5.2.6.4 Summary of Case F

Figure 14 depicts the evolution and role of social capital and structural dimension in the internationalisation of firm F. The foreign market entries are

presented in chronological order. It is highlighted from the diagram that the efficacious and serendipitous roles of social capital were equally important for firm F. Additionally, weak ties were mainly important when firm F entered foreign markets. Social capital and weak ties had mainly an impact on facilitating firm F to enter rapidly foreign markets. A good example is when firm F established links with the US reseller, the US reseller helped firm F to successfully find customers and enter the Canadian market. Finally, Table 47 summarises the frequency of the different roles of social capital that occurred in the internationalisation of firm F.

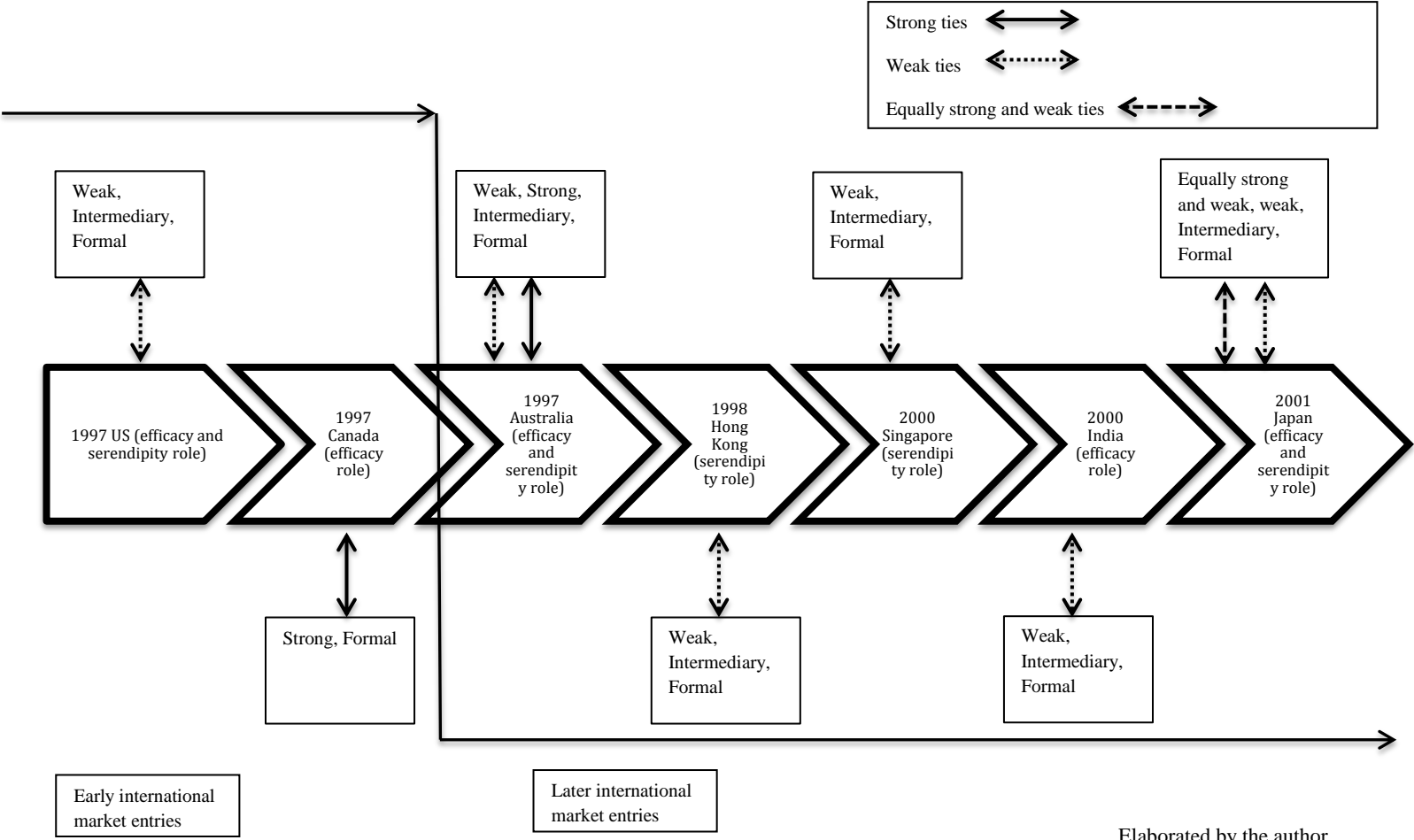
Structural holes have been acting as an impediment for firm F. The company is not well connected and operates in a massive market where the number of potential customers is very big. The major players in this market are big MNEs and establishing links with them was challenging. Firm F can bridge structural holes using its current partners and attending tradeshows.

The role of internet is also important for getting necessary information on foreign markets and background information on potential partners. LinkedIn played a minor role as a tool to track key people who may help firm F to get access into possible new clients.

Table 47 Case F - Roles of social capital (frequency)

Efficacy role	Serendipity role	Liability role
4	6	0

Figure 14 Case F - Evolution of social capital over time and structural dimension in international market entries



5.2.7 Analysis and presentation of Case G

For the purpose of this research case Firm G was examined and analysed. Firm G is a Scottish High Technology SME based in Edinburgh, UK. The presentation of firm G follows the themes presented earlier.

5.2.7.1 Various dimensions and background information

Case G can be characterised as INV because of the speed of internationalisation, the number of countries operating in and the percentage of total sales coming from foreign operations.

The company was established in 2001 by a group of three people. Three years after the inception of the company one of the founders of the company decided to exit the firm. The company operates in the high technology sector and based on its website “we offer optimal performance when running software on customers’ chosen hardware platform”.

It is important to highlight that one of the founders of the company has previous international experience in Sweden and Japan. All the members of the top management team hold a BSc degree. The company employs 16 people and most of them work in Edinburgh, UK. The company has an employee in the US and an employee in Japan.

Interestingly, 100% of total sales come from international operations. The founders of the company had a vision to go abroad since the inception of the firm due to the small size of the domestic market and limited number of domestic customers. Potential customers are based in the US and Japan.

The firm operates in many countries the major markets are the following: The US, Japan, China, Canada, Sweden, France, Germany and South Korea that will be a future market entry. The first market that the company entered was Japan in 2004, three years after its inception.

Firm G has not faced serious cultural issues in the countries it operates in. The only exemption has been the Chinese market where the business culture is different (please see appendix two, quote 1 for further information).

The first major market the company entered was France in 2003. The second country the company entered was the US in 2004. The third market the company entered was Japan in 2005. The market entry in China took place in 2011. A future market entry is South Korea; the company is about to sign a contract with a South Korean company.

The firm focuses on large semiconductor companies. The CEO stated that the Japanese economy has been facing economic problems. According to the CEO of firm G, there has been a lot of consolidation in Japan and nowadays few big semiconductor firms operate there. The firm also targets countries like South Korea, Taiwan and China because those have taken part of the Japanese market share.

Firm G followed similar international patterns to enter the initial foreign markets (i.e. USA and Japan). They recruited two local employees with a big number of network relationships and knowledge on the local markets in order to better penetrate the market. It was also important to have local presence to support better their customers.

“...Employees offer us valuable help with their knowledge on the business landscape in the US and Japan, they also support some of our customers...” (Interviewee 1)

The internationalisation of firm G was outward and had sales through partnerships and direct sales to customers. It is important to mention that both high and low entry commitments followed by firm G in both psychically distant and close countries. The speed of internationalisation and number of countries, which Firm G operates in highlights and justifies its characterisation as an INV.

Table 48 Case G - Summary of various dimensions and background information

Year of inception	2001
Educational background of founders	BSc Holders
First country entered/Year	France/2003
Major markets entered (chronological order)	USA, Japan, China, South Korea (future entry)
Speed of internationalisation	Two years after the inception (i.e. 2003)
Number of employees	16
Percentage of sales from international operations	100%

5.2.7.2 Different roles of social capital

In the previous section the background information on firm G was presented and the reasons why the firm is characterised as an INV were also highlighted. The number of countries and the percentage of total sales coming from foreign operations were also presented.

In this section the different roles of social capital (i.e. efficacious, serendipitous and liability) are presented and how these influence the internationalisation of firm G. There will be an attempt to identify which role is more important and at what stage of internationalisation. The examination of the different roles of social capital is taking place in chronological order to capture the evolution of social capital and its influence.

5.2.7.2.1 Roles of social capital in initial international market entries

The analysis of the role of social capital begins with a focus on the initial foreign market entries. The company as mentioned in the previous section entered the French market in 2003. Firm G used its existing network relationships to enter France (please see appendix two, quote 2 for further information).

The second market the company entered was the US in 2004. The CEO used his existing networks to facilitate the market entry in the US. However, the efficacy role of social capital changed to liability role when firm G decided to terminate its collaboration with their former employee in the US (please see appendix two, quote 3 for further information). The liability role of social capital drove firm G to search for a new partner in the US market. It also illustrated how the involvement of one of the co-founders in the sales process made the US market entry successful.

“...We used my co-founder’s connections to enter the US market. It wasn’t something particular big at that point. We had first a sales person who wasn’t so successful so my co-founder became again more involved in doing direct sales...” (Interviewee 2)

The current partner in the US offers firm G access to new customers and companies. This is illustrated from the following statement.

“... We pretty much know who our customers are and who we want to go after. The question is how to get engaged with them, the local person can act more quickly and visit them more often and the customers over there and the companies see us as more committed to the area...” (Interviewee 1)

Firm G approached a key person in a US company through its existing contacts which highlights the importance of network relationships and social capital in a successful foreign market entry (please see appendix two, quote 4 for further information). A board member of the company introduced the CEO of firm G to a new customer in the US market, which illustrates how board members of a company using their existing network relationships assist the internationalisation of companies (please see appendix two, quote 5 for further information).

Table 49 Case G - Roles of social capital in initial international market entries

Country	Role of social capital (see chapter 3, pages 72-73)	Supporting direct quote (please see appendix two for further details)
France	Efficacy role	<i>...The network and direct contacts with sales divisions of ST Microelectronics came directly from my co-founder's past, network and experience. They had a division in Edinburgh and we knew some people there... (efficacy role – Quote 2)</i>
USA	Efficacy and liability role	<p><i>...In the US I did use some of my existing contacts to enter the market and find new customers... the people that we hired were recommended to me but I didn't know them personally... (efficacy role – Quote 3)</i></p> <p><i>...It was a mutual decision to terminate our collaboration with the person in the US. The US guy found it very difficult to work with a small company far away... (liability role – Quote 3)</i></p> <p><i>...In a big US company that we do business at the moment, the contact that I got was from one of my other contacts... (efficacy role – Quote 4)</i></p> <p><i>...So the board member introduced me again when I was in the US and we started doing business... (efficacy role – Quote 5)</i></p>

5.2.7.2.2 Roles of social capital in later international market entries

Firm G was very successful in the French and the US markets. One year after the initial market entry the firm continued its international expansion in the Japanese market in 2005, the Chinese market in 2011 and is about to enter the South Korean market. The Japanese market was influenced by the CEO's personal network and his previous working experience in order to successfully enter this market (please see appendix two, quote 6 for further information). The CEO of firm G worked for a Japanese company, which allowed him to create a network in Japan. This was very beneficial when the company decided to enter this market (please see appendix two, quote 7 for further information).

The Chinese market entry was facilitated by the internet because the company was approached by a Chinese company. The existing network relationships also helped firm G to find another customer in China (please see appendix two, quote 8 for further information). Firm G used its existing network relationships to sign a contract with one of the biggest telecommunications global players, Huawei (please see appendix two, quote 9 for further information).

The South Korean case is also interesting because firm G used its existing network relationships to start the negotiations with a South Korean customer (please see appendix two, quote 10 for further information). The CEO of firm G stated that its existing network relationships could introduce his company to big multinationals in South Korea like Samsung (please see appendix two, quote 11 for further information).

Table 50 Case G - Roles of social capital in later international market entries

Country	Role of social capital (see chapter 3, pages 72-73)	Supporting direct quote (please see appendix two for further details)
Japan	Efficacy role	<p><i>...This person was introduced to me from my contacts because I told them that we were searching for someone in Japan... (efficacy role – Quote 6)</i></p> <p><i>...One of our customers there was found through my network in my previous job... (efficacy role – Quote 7)</i></p>
China	Serendipity and Efficacy role	<p><i>...We picked one big customer over there actually they contacted us first... They found us on the internet... (serendipity role – Quote 8)</i></p> <p><i>We're dealing with Huawei in China... We were recommended and introduced by someone in my personal network... (efficacy role – Quote 9)</i></p> <p><i>...It was the Japanese sales person that had contacts in China and eventually established a relationship with a big telecommunications company in China... (efficacy role – Quote 9)</i></p>
South Korea (future entry)	Efficacy role	<p><i>... I know some people who are international sales VPs for big companies so they might know someone in Samsung. It makes a big difference that, you definitely need this... (efficacy role – Quote 11)</i></p>

5.2.7.3 Structural dimension and network closure

In the previous section the different roles of social capital in the internationalisation of firm G were analysed and examined. The different roles of social capital were divided in initial and later international market entries in order to highlight the dynamic nature and evolution of social capital over time.

In this section the structural dimension and network closure are presented. Examining the internationalisation of firm G will allow us to better comprehend the mechanism of strong and weak ties and their relationship with social capital.

Firm G operates in the sector of software development that can be applied on hardware platforms. The international expansion strategy of firm G was based the last years on using existing network relationships and the use of the internet as a tool to identify potential contacts.

“...They’re many examples where people I’ve known introduced me either to customers, potential employees or potential funders or potential board members and so on. Most of the people I’ve interacted with there always have a network relationship connection. I’ve always believed that you should stay in touch with people that you worked with one time or another. There are tools like LinkedIn that help make these things easier. I use both physical and virtual networks. For example there is someone in a mobile sector company that I want to get in touch with, he’s actually in France so LinkedIn tells me that there is a contact of mine that knows him, so I can talk to that person and ask him would you be able to introduce me to him? Many similar things can happen. When I travel to the US and Japan I usually go through my contacts and I pick some people to tell them lets go for a breakfast or dinner, lets catch up. I don’t do it for a particular reason just to keep in contact. Usually they say you should speak to my friend who works in this or that company and he may be interested in your products...” (Interviewee 1)

It was described in the previous section how the existing network relationships helped firm G to enter foreign markets. In the French market entry the company used equally strong and weak and formal ties. A business division of ST Microelectronics in Edinburgh introduced and gave a reference to firm G to sign a contract with ST Microelectronics in France. In the US the company used strong and formal ties because the founders found their first partner through existing contacts. Additionally, the board members helped firm G to find new customers in the US. The case of the Japanese market entry was based on finding a partner through existing contacts and an introduction from previous colleagues in a Japanese company. Therefore, strong and formal ties were used. In the Chinese market the company was approached by a Chinese company though the internet and used its personal network relationships (sales person in Japan), thus strong and intermediary ties were used for the first customer and strong and formal ties for the second customer. The South Korean is a case of a future market entry, however, the importance of strong and formal ties are illustrated as mentioned in the previous section.

The importance of network relationships in offering valuable knowledge on foreign markets and the importance of the internet and its huge impact on managing contacts are highlighted in the following statement.

“... The resources we get from our network relationships is more about being introduced to other companies and maybe knowing which companies are doing well, which means which companies have money to spend on our product. They also help with recruitment, we are currently hiring someone so I ask my network if they know somebody... My network is bigger nowadays and LinkedIn makes things easier to find common connections. It makes it also easier to manage your network relationships...” (Interviewee 1)

The importance of current partners is highlighted in the following statement. They are very important to sell and promote firm G’s products but they also give it references and introductions to new customers.

“...Our partners sell and promote our product, they also introduce us to new customers. Some of our partners resell our products so it’s important to use their own network and of course we always find partners that have a big network...” (Interviewee 2)

Network relationships act also as a substitute to the company’s scarcity of resources and especially in offering knowledge. Speed of internationalisation is also affected positively by network relationships.

“... Networks helped us to go faster abroad. Because small companies when they’re hiring the business is developed by local people. You’ve local people so you develop your business quicker. It’s very difficult to hire people remotely and get it right, so having some people that are recommended it to you by your network they’ll tell you I worked with this guy before, I think you’ll fit well...”. (Interviewee 2)

The following statement illustrates the importance that firm G positions on the existence of network relationships and their crucial role in various functions of a firm with international orientation. Additionally, it highlights how the CEO perceives the role of networking.

“...New customers are mainly people I’ve met in networking events, I always follow up these people, email them or connect them on LinkedIn. I’ve almost 1,400 contacts in LinkedIn most are people that I really do know. I organise a networking event here in Scotland every year so it’s an informal thing, 50 to 100 people attend it... I’m a great believer in networking...” (Interviewee 1)

“... My co-founder has done a great job with LinkedIn, he uses this tool to find new contacts and for access to potential customers. It also helps as a tool for introduction...” (Interviewee 2)

Finally, firm G does not face the problem of structural holes and if these appear the company is in a position to bridge them using its extensive network of relationships.

“...Many VCs advertise that they’ll introduce you to many people but my own network is better than theirs. I can imagine that for some companies VCs’ contacts might be useful but this isn’t the case for us... Scottish Enterprise is one of our investors, there is also another

organisation in Scotland that has offices all around the world, but they don't really help us. Again I believe I've a better network than them..." (Interviewee 1)

Table 51 Case G - Strength of ties and structure of the relationship

Country	Strength of ties and structure of relationship
France	Equally strong and weak, Formal (ST Microelectronics business division in Edinburgh)
USA	Strong, Formal (Use of existing network relationships, Partner in US, Board Members)
Japan	Strong, Formal (Use of existing network relationships, CEO's former colleagues)
China	Weak, Strong, Intermediary, Formal (Firm G was approached through the internet, CEO's personal network, Japanese salesperson)
South Korea (future entry)	Strong, Formal (CEO's personal network – Sales VPs in multinationals)

5.2.7.4 Summary of Case G

Figure 15 depicts the evolution and role of social capital and structural dimension in the internationalisation of firm G. The foreign market entries are presented in chronological order. It is highlighted from the diagram that the efficacious role of social capital was more important for firm G. Additionally, mainly strong ties were important when firm G entered foreign markets. Social capital and strong ties had mainly an impact on facilitating firm G to enter rapidly foreign markets. A good example is when firm G established links with the Japanese partner, the Japanese partner helped firm G to successfully find customers both in Japan and China. Finally, Table 52 summarises the frequency of the different roles of social capital that occurred in the internationalisation of firm G.

Structural holes have not been acting as an impediment for firm G. The company is well connected and operates in a niche market where the number of potential customers is limited, however, the major players in this market are big MNEs. Firm G can bridge possible structural holes using its current network relationships and using its partners and attending tradeshow. The CEO of firm G is very active and the number of his network relationships allows him to bridge structural holes and approach key people in potential customers.

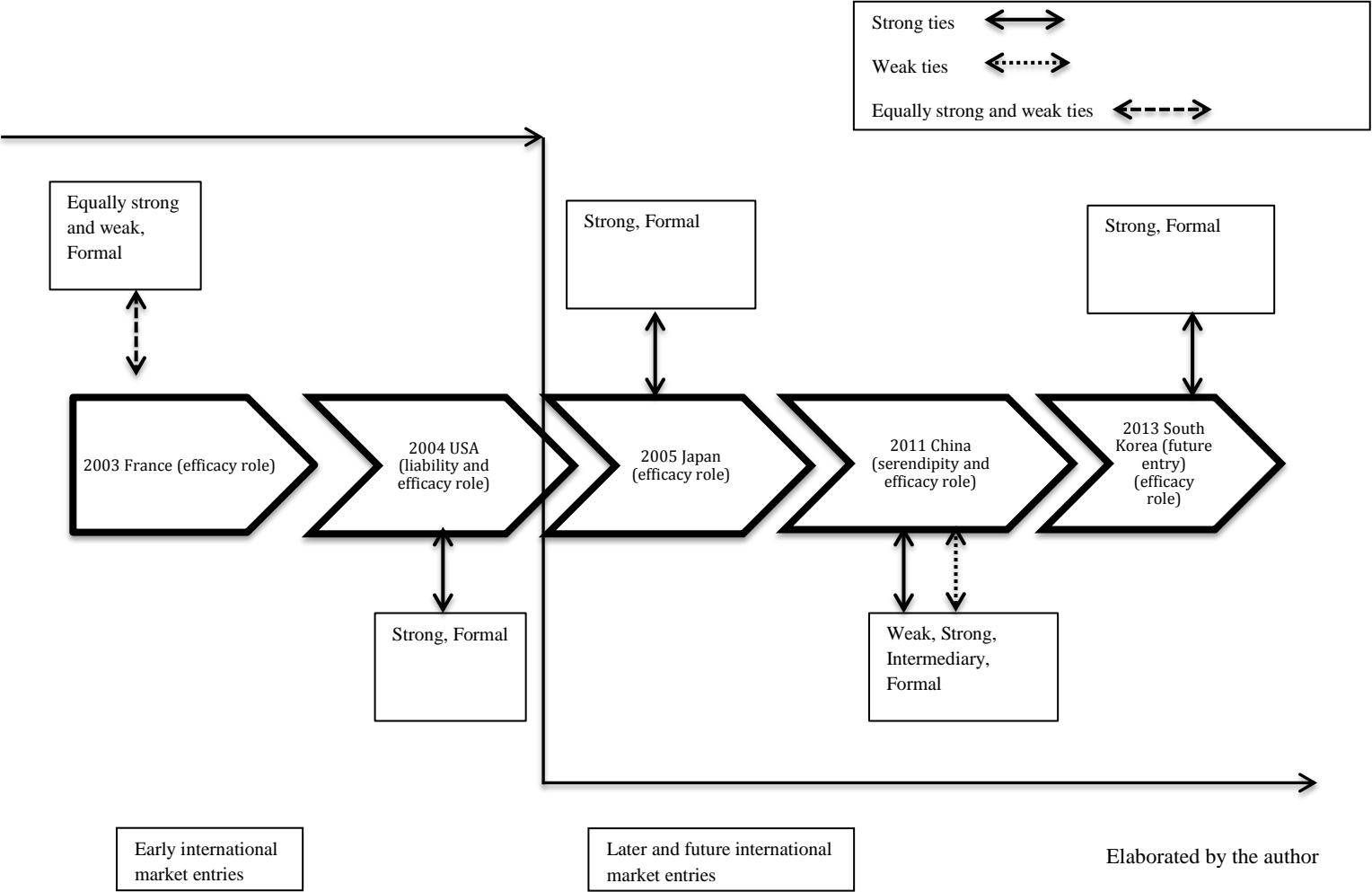
The role of internet is also important for getting necessary information on foreign markets and background information on potential partners and customers.

LinkedIn played a major role as a tool to track key people who may help firm G to get access into possible new clients.

Table 52 Case G - Roles of social capital (frequency)

Efficacy role	Serendipity role	Liability role
9	1	1

Figure 15 Case G - Evolution of social capital over time and structural dimension in international market entries



5.2.8 Analysis and presentation of Case H

For the purpose of this research case Firm H was examined and analysed. Firm H is a Scottish High Technology SME based in Edinburgh, UK. The presentation of firm H follows the themes presented earlier. Case H was selected to highlight the importance of social capital in the pro-internationalisation phase.

5.2.8.1 Various dimensions and background information

The company was established in 2009 by a group of two people. The company operates in the high technology sector and based on its website “software technology company that helps companies to identify software bugs”.

It is important to highlight that the founders of the company have previous international working experience in the US. Both founders of the company hold a PhD degree. The company employs 4 people full time and 4 people part time and all of them work in Edinburgh, UK. The company does not have foreign sales. Firm H is about to enter foreign markets mainly in the US, Hungary, Switzerland and Hong Kong.

Firm H operates in a niche market so the number of its potential customers is limited. The company targets companies in the investment-banking sector (please see appendix two, quotes 1 and 2 for further information).

Firm H has not faced serious cultural issues in the countries it has started negotiating with potential customers. There were minor differences between the US and UK business context (please see appendix two, quote 3 for further information).

The CEO of the company highlighted that working with big multinationals minimises the impact of cultural differences because they employ people from all around the world.

“...We’ve met the Hungarians a number of times. Although they’re a Hungarian company they’re a multinational. They’ve the sort of culture that has been developed by multinational operations. They’re operating in the US, in Eastern Europe in the Far East so we hope that the culture differences will be minimised. The US organisation paradoxically exhibits more cultural differences...” (Interviewee 2)

As mentioned earlier the company does not operate in foreign markets at this stage. However, firm H has been negotiating with investment banks in the following countries: USA, Hungary, Switzerland and Hong Kong.

Firm H will follow similar international patterns to enter foreign markets and sale its products. The company will have direct sales to its customers. It is important to underline that firm H heavily relies on its existing network relationships to find new customers.

“...You need to know somebody to get into the investment banks, you cannot just cold call somebody. You won't be able to have a useful conversation whether abroad or here in the UK, you need to have a contact in these companies. A contact who is close enough to the person you need to speak to, someone who knows the right person or who knows the right person... You cannot just walk up to the door of JP Morgan and just ask to talk to somebody about these kind of things...” (Interviewee 1)

Table 53 Case H - Summary of various dimensions and background information

Year of inception	2009
Educational background of founders	PhD Holders
First country entered/Year	UK/2009
Major markets that will be entered (future entries)	USA, Hungary, Switzerland, Hong Kong
Speed of internationalisation	-
Number of employees	4 full time, 4 part time
Percentage of sales from international operations	100% domestic sales

5.2.8.2 Different roles of social capital

In the previous section the background information on firm H was presented. The number of countries that the company will enter was also presented.

In this section the different roles of social capital (i.e. efficacious, serendipitous and liability) are presented and how these will influence the internationalisation of firm H. There will be an attempt to identify which role is more important. The examination of the different roles of social capital is taking place in chronological order to capture the evolution of social capital and its influence.

5.2.8.2.1 Roles of social capital in future international market entries

The analysis of the role of social capital begins with the importance of social capital and how this will assist firm H to enter foreign markets in the near future. The first negotiations have started in 2012 in Hungary, those were followed with discussions in 2012 in the US. The company has also started negotiating with

companies in Switzerland in 2012 and in Hong Kong in 2013 (please see appendix two, quote 4 for further information).

Firm H approached potential partners in Hungary and the US through its existing network relationships and the founder's personal contacts (please see appendix two, quotes 5 and 6 for further information).

The case of Switzerland is also very interesting because the founder of the firm used his personal network and more specifically one of his former students to start negotiating with a Swiss bank, which illustrates the importance of network relationships to get access to investment banks in this country (please see appendix two, quote 7 for further information).

Table 54 Case H - Roles of social capital in future international market entries

Country	Role of social capital (see chapter 3, pages 72-73)	Supporting direct quote (please see appendix two for further details)
Hungary	Efficacy role	<i>...The Hungarian partner was working for one of our clients... (efficacy role – Quote 5)</i> <i>...We started negotiating in Hungary in 2012, we were referred from London... (efficacy role – Quote 4)</i>
USA	Efficacy role	<i>...We approached the first partner through our existing network. The first one is based in New York and because one of the founders had a level of contacts there we were able to open discussion with them... (efficacy role – Quote 5)</i>
Switzerland	Efficacy role	<i>...For example one of my former students works in London and he said you should be talking to this guy in Zurich who makes decision in this kind of things... (efficacy role – Quote 7)</i>
Hong Kong	Efficacy role	<i>...The product has been sold to only one customer, which is based in London but now is in Hong Kong... (efficacy role – Quote 1)</i>

5.2.8.3 Structural dimension and network closure

In the previous section the different roles of social capital in the future internationalisation of firm H were analysed and examined. The different roles of social capital were presented in future international market entries in order to highlight the dynamic nature of social capital.

In this section the structural dimension and network closure are presented. Examining the future internationalisation of firm H will allow us to better comprehend the mechanism of strong and weak ties and their relationship with social capital.

Firm H operates in the sector of software debugging. The company focuses on a niche market, this of investment banks. It is necessary for firm H to use existing network relationships; otherwise the collaboration with future customers and partners is impossible.

“...Our contacts in the UK have been often important for making introductions to part of their own organisations in different geographies. For example, we’re dealing with an investment bank in London and they’ve introduced us to some of their colleagues in Zurich and New York. We went to New York last April and we met people in a US bank in New York that introduced us to their colleagues in London. Because these organisations are very large and complex this kind of market intelligence was important to get to their right people instead of phoning up the London office so that saves a great deal of time...” (Interviewee 2)

The personal network of one of the co-founders is very extensive and this assisted the company to find key people and contacts in order to successfully find new customers and partners.

*“...My personal network relationships helped me to find customers like in any business. I’ve former students for example so I used contacts with Edinburgh University alumni in London and so forth. And networks of the people I work with. It’s very important...
...I’ve been teaching here for more than 25 years, I got access to the alumni database for Informatics, I filtered it by people who are working in the investment banks and people who might have an email address. Then I carefully send out some messages to these people and I get quite a good response rate. Many of these people I’d been teaching although usually in a lecture of 200 people so they remembered me but I didn’t remember them so this is an example. So the guy who finally made a decision to buy the very first purchase of our product is from one of these people, he graduated 20 years ago. I’ve had advice but not direct sales from people who I supervised on projects 15 years ago who have careers in banking. So they’ve put me in contact with people who were useful for business...” (Interviewee 1)*

It was described in the previous section how the existing network relationships will help firm H to enter foreign markets. In Hungary the company will use strong and formal ties. The case of the US future market entry is mainly based on existing customers and the personal network of one of the co-founders. Therefore, strong and formal ties will be used. The future market entry in Switzerland is based on the founder’s existing network relationships so strong and formal ties will be used. The case of Hong Kong is based on existing customers so strong and formal ties will be used.

The importance of existing network relationships is highlighted in the following statement. They are very important to offer valuable knowledge to firm H on foreign markets and getting recommendations and references for new customers.

“...As a small company it’s impossible to physically cover the ground so we’ve to rely on those other channels of communication. In the absence of networks we would be in a disadvantageous position, because it’s B2B sale in that context your personal relationships are much more important than having a glimpse website the ability to buy. We’re B2B so we

need the networks... Networks offers us market intelligence, they offer technical feedback and guidance those are the main flows that come from our networks...” (Interviewee 2)
“... Our network relationships offer us contacts with potential customers, authority in technical areas and also potential funding. Particular kinds of expertise if you would like to do a particular kind of technical work it would be important to use contacts to find someone to make sure it’s the right person...” (Interviewee 1)

The following statement illustrates the importance of virtual network relationships in the successful international expansion. The importance of LinkedIn as a powerful tool is also underlined.

“...I’ve nearly 1000 LinkedIn contacts but I’m not discussing things with them regularly. We’re in regular contact with 20 to 50 people in this network. The number of these people would change over time because if we were targeting a particular sale we would contact people who are connected to that company...” (Interviewee 1)
“...We use more virtual than physical networks. We’re networking remotely like in the US, France and so forth. We identify individuals in LinkedIn who we know they may have an interest in what we do. And then it’s how we can exploit networks. So then we use our network (customers, SDI, suppliers, personal network) to access the people we want... I think LinkedIn is a fantastic tool for finding new customers and contacting people who might help you out in your pursuit of customers...” (Interviewee 2)

Table 55 Case H - Strength of ties and structure of the relationship

Country	Strength of ties and structure of relationship
Hungary	Strong, Formal (Existing customer in the UK)
USA	Strong, Formal (Existing customer in the UK, founder’s personal network)
Switzerland	Strong, Formal (Existing customer in the UK, founder’s personal network)
Hong Kong	Strong, Formal (Customer from the UK)

5.2.8.4 Summary of Case H

Figure 16 depicts the evolution and role of social capital and structural dimension in the future internationalisation of firm H. The future foreign market entries are presented in chronological order, the year of negotiations was used as a starting point. It is highlighted from Figure 16 that the efficacious role of social capital was more important for firm H. Additionally, strong ties are important for firm H’s future foreign markets entries. Social capital and strong and weak ties have mainly an impact on facilitating firm H’s planning to enter rapidly foreign markets.

Structural holes have not been acting as an impediment for firm H. The company is well connected and operates in a niche market where the number of potential customers is limited, however, the major players in this market are big

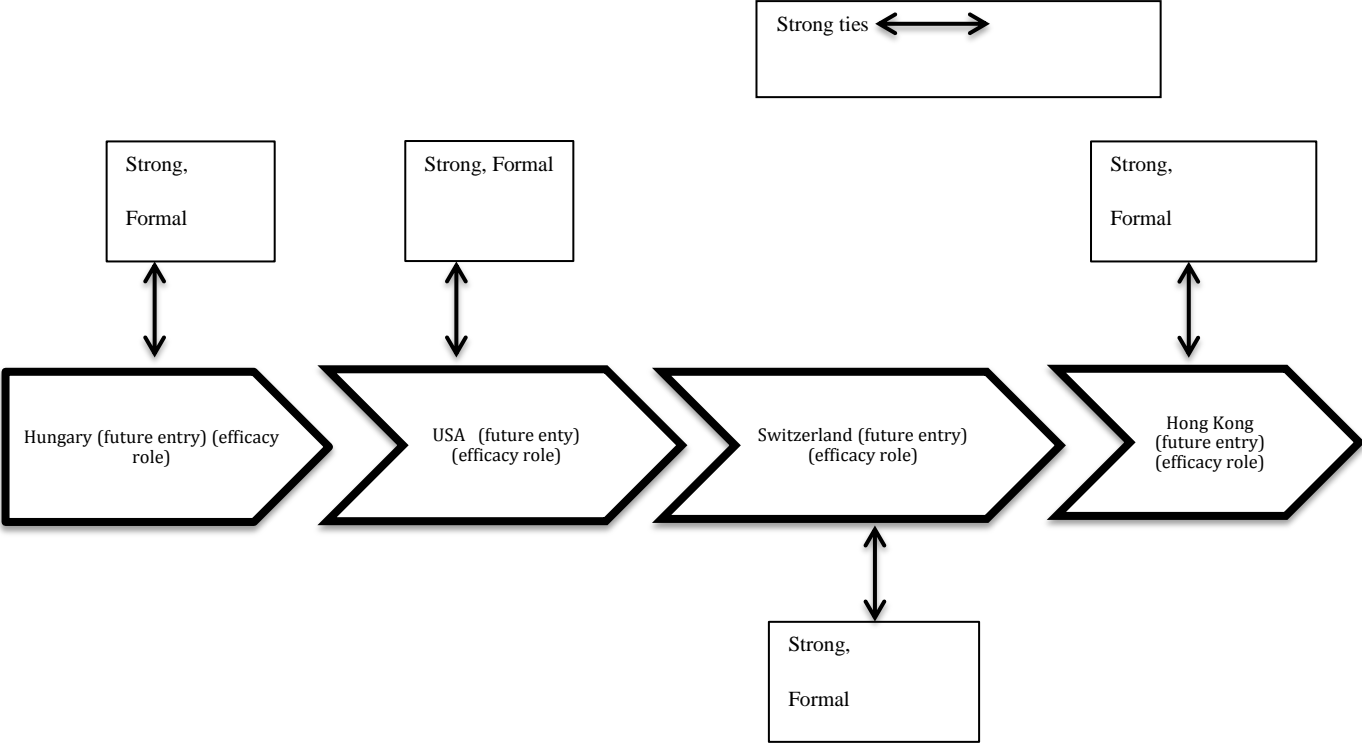
MNEs and establishing links with them is challenging. Firm H can bridge possible structural holes using its existing extensive network of relationships and existing customers.

The role of internet is also important for getting necessary information on foreign markets and background information on potential partners. LinkedIn played a paramount role as a tool to track key people who may help firm H to get access into possible new clients.

Table 56 Case H - Roles of social capital (frequency)

Efficacy role	Serendipity role	Liability role
5	0	0

Figure 16 Case H - Evolution of social capital over time and structural dimension in international market entries



Elaborated by the author

5.2.9 Analysis and presentation of Case I

For the purpose of this research case Firm I was examined and analysed. Firm I is a Scottish High Technology SME based in Edinburgh, UK. The presentation of firm I follows the themes presented earlier.

5.2.9.1 Various dimensions and background information

Case I can be characterised as INV because of the speed of internationalisation, the number of countries operating in and the percentage of total sales coming from foreign operations.

The company was established in 2002 by one person. The founder of the company holds the position of the CEO. The company operates in the high technology sector and based on its website "... The company provides solutions for graphic semiconductor companies and designers...".

It is important to highlight that the founder of the company does not have previous international working experience. All the members of the top management team hold a BSc degree. The company employs 36 people and most of them work in Edinburgh, UK. The company has an employee in Ontario, Canada.

Over 70% of total sales come from international operations. Whereas, 30% of total sales come from a US customer that runs a subsidiary in the UK. The founder of the company had a vision to go abroad since the inception of the firm due to the size of the domestic market and the international nature of the industry.

"...It was just the way this industry operates. If you're in a very specialist technology area there are not national boundaries. You've to go to the places that are relevant to that technology..." (Interviewee 1)

The major markets where the company operates in are the following: Japan, the US, Ireland, Canada and European Union countries through European projects. The company plans to enter the Chinese and South Korean markets in the future. The first market that the company entered was Japan in 2002, the same year the company was established.

"...It was in 2002 they found us, it was a very small customer it was not enough to keep the business going..." (Interviewee 1)

Firm I has faced serious cultural issues in Japan. The operations in Canada and the U.S. were not affected by cultural differences (please see appendix two, quote 1 for further information).

The first major market the company entered was Japan in 2002. The second country the company entered was the US in 2004. The third market the company entered was Canada in 2007. The last markets the company entered was through a European project in 2011. A future market entry is South Korea; the company also plans to set up an office in Canada.

The following statement illustrates the importance of the Japanese and the US markets and why the company focuses on those markets.

“...For us it isn’t the size of the market but a customer that we want to sell to. Things will change in the future if we prefer to expand in the market... We focus on markets where there are potential customers and that we could work with. At the moment in our industry most of our potential customers are based in the US and Japan...” (Interviewee 1)

Firm I followed similar international patterns to enter the initial foreign markets (i.e. Japan and the US). They sold their product directly to the customers. Additionally, they employed one very high skilled employee in Canada with networks in the market.

The internationalisation of firm I was outward and had sales through partnerships and direct sales to customers. It is important to mention that both high and low entry commitments followed by firm I. The speed of internationalisation and number of countries, which Firm I operates in highlights and justifies its characterisation as an INV.

Table 57 Case I - Summary of various dimensions and background information

Year of inception	2002
Educational background of founders	BSc Holder
First country entered/Year	Japan/2002
Major markets entered (chronological order)	USA, Canada, Ireland, European Countries, South Korea (future entry)
Speed of internationalisation	From inception (i.e. 2002)
Number of employees	36
Percentage of sales from international operations	80%

5.2.9.2 Different roles of social capital

In the previous section the background information on firm I was presented and the reasons why the firm is characterised as an INV were also highlighted. The number of countries and the percentage of total sales coming from foreign operations were also presented.

In this section the different roles of social capital (i.e. efficacious, serendipitous and liability) are presented and how these influence the internationalisation of firm I. There will be an attempt to identify which role is more important and at what stage of internationalisation. The examination of the different roles of social capital is taking place in chronological order to capture the evolution of social capital and its influence.

5.2.9.2.1 Roles of social capital in initial international market entries

The analysis of the role of social capital begins with a focus on the initial foreign market entries. The company as mentioned in the previous section entered the Japanese market in 2002. Firm I was approached from a Japanese customer through the internet in 2002. Firm I found a new Japanese customer in 2007 through its network (please see appendix two, quote 2 for further information). The second market the company entered was the US in 2004 (please see appendix two, quote 3 for further information).

Table 58 Case I - Roles of social capital in initial international market entries

Country	Role of social capital (see chapter 3, pages 72-73)	Supporting direct quote (please see appendix two for further details)
Japan	Serendipity, liability and efficacy role	<p>...Our first customer was in Japan... They found us through the internet ... (serendipity role – Quote 2)</p> <p>...We had to terminate our collaboration with them due to cultural differences and because they weren't so engaged... (liability role – Quote 2)</p> <p>...There was a second Japanese customer in 2007. We had approached them. It was through networking... (efficacy role – Quote 2)</p>
USA	Efficacy role	<p>...Our first big profitable customer was an American customer that I met them in Japan... We were working with a partner company that didn't do very well so the guy in the partner company left and went to a start-up and when he went to the start-up that needed the technology, so he said oh yes I know these people... (efficacy role – Quote 3)</p>

5.2.9.2.2 Roles of social capital in later international market entries

Firm I was successful in the Japanese and the US markets. The firm continued its international expansion in the Canadian market in 2006, the Irish market in 2007, other countries in the EU through EU projects in 2011 and is about to enter the South Korean market. The Canadian market was influenced by the CEO's personal network in order to successfully enter this market (please see appendix two, quote 4 for further information). The CEO of firm I decided to hire an employee in Canada in 2007 using his personal network (please see appendix two, quote 5 for further information).

The CEO's personal network and the associations where the firm is a member facilitated the entry to the Irish market. The company does not have a strong presence in Ireland because it focuses on other markets where the number of potential customers is bigger (please see appendix two, quote 6 for further information). Firm I used its existing network relationships to start collaborations with other European companies in a project funded by the EU (please see appendix two, quote 7 for further information).

The South Korean future market entry is also an interesting story because firm I plans to use its existing network to enter this market. The differences between Western and Asian firms impede the collaboration and the establishment of new collaborations (please see appendix two, quote 8 for further information).

Table 59 Case I - Roles of social capital in later international market entries

Country	Role of social capital (see chapter 3, pages 72-73)	Supporting direct quote (please see appendix two for further details)
Canada	Efficacy role	<i>...Our customer in Canada was found through my network. I knew someone in a Canadian company who introduced me to the Canadian customer... (efficacy role – Quote 4)</i>
Ireland	Efficacy role	<i>...We found the first customer through my network in one of the associations we're a member. Through the association we got an introduction to the Irish customer and it has been a successful collaboration... (efficacy role – Quote 6)</i>
European countries (via European projects)	Efficacy role	<i>...I was in a panel with a Greek academic, he was at the University of Patras but he was actually moving to Sweden but he knew firm X in Greece very well. We got together another group to do a European funding project, so firm X has done one or two of these projects... (efficacy role – Quote 7)</i>
South Korea (future entry)	Efficacy role	<i>...I think talking to the right people the opportunity is there, people who would be willing to buy from us. Saying the right things to the right people then they would come to us... (efficacy role – Quote 8)</i>

5.2.9.3 Structural dimension and network closure

In the previous section the different roles of social capital in the internationalisation of firm I were analysed and examined. The different roles of social capital were divided in initial and later international market entries in order to highlight the dynamic nature and evolution of social capital over time.

In this section the structural dimension and network closure are presented. Examining the internationalisation of firm I will allow us to better comprehend the mechanism of strong and weak ties and their relationship with social capital.

Firm I operates in the sector of software development that can be applied on semiconductor graphic designs. The international expansion strategy of firm I was based the last years on using existing network relationships. However, the CEO of company I argues that their sales pattern is based on serendipity. He also highlighted how important associations are (please see appendix two, quote 9 for further information).

It was described in the previous section how the existing network relationships helped firm I to enter foreign markets. In the Japanese market entry the company used weak, intermediary and informal ties because the company was approached through the internet. The later customer in Japan was found through the CEO's network relationships so equally strong and weak and formal ties were used. In the US the company used strong and formal ties because a Japanese customer introduced it to the US customer. Additionally, the Canadian customer was found through the CEO's network so strong and formal ties were used. In the Irish market the CEO's network relationships and an association assisted firm I to find the Irish customer, therefore, equally strong and weak and formal ties were important. For the European projects and the collaboration with other small firms strong, intermediary and formal ties were important. Finally, South Korea is a case of a future market entry, however, the importance of strong and formal ties are illustrated as mentioned in the previous section.

The importance of network relationships in offering access to key people and open doors are highlighted in the following statement. Moreover, the importance of the internet and its huge impact on managing contacts is also illustrated.

“...All of our sales come from our network. All the profitable deals come through networking and being a specialist in the area. We do no advertising anymore, we very rarely have tables or stands in exhibitions and conferences. In fact I think the only time we do it is for recruitment...

...LinkedIn is useful for tracking people moving to different companies. It's useful for finding out what people have done in the past...” (Interviewee 1)

The importance of current network relationships is highlighted in the following statement. They are very important to offer valuable knowledge to firm I regarding the needs of the market.

“...Finding what is going on in the industry. The more you're part of a network the more people will ask you to do things. When you're on the outside you need desperately money to talk but when you're in they ask you to do the talk. It's best to be on the inside. The opportunity comes to you...” (Interviewee 1)

The internationalisation speed of firm I has been positively influenced by its network relationship. Moreover the firm had to rely on its network relationships to expand its operations abroad.

“For us it wasn't possible without networks so you've to build up the network. I suppose if you've the network you don't have to build it; whereas if you don't have the network you've to build it up. When we started the company we had no networks, I had networks with the wrong people so we built up the network... Networks were more than assistance they were absolutely critical...” (Interviewee 1)

Strategic decisions are taken from the Board of Directors, however, the CEO of firm I prefers to be consulted from his network relationships. Additionally, the associations where the firm is a member shape the needs of the market.

“I talk to a lot of people when I want to make a decision. We do change direction quite a lot; I think we're a fast moving company in terms of our ability to adapt to things that have been changing. We're following the market and we also try to push the market in the direction that we want it to go. Define the standard and then implement it that is a big strategic decision for us. Mostly strategic decisions are made smaller and they grow, as we feel more confident to do this. It's unusual for us to change direction; we only have to do that when we're forced to...” (Interviewee 1)

Finally, firm I does not face the problem of structural holes and if these appear the company is in a position to bridge them using its extensive network of relationships. Firm I uses a limited number of networks because it focuses on a niche market, the following statement illustrates the importance of using a small number of networks.

“...Very small. There is the formal network, such as associations and this area has been going long enough and there is an informal network in the sense that people in this area know each other. Some of them have been moved to different companies, they've been involved in these organisations. We see the same people coming back sometimes with different companies or start-ups, they know you and we know them. Anyone new coming in

they're kind of part of this network. They come to a network that you're already in so it becomes easier..." (Interviewee 1)

Table 60 Case I - Strength of ties and structure of the relationship

Country	Strength of ties and structure of relationship
Japan	Weak, Equally strong and weak, Intermediary, Informal, Formal (Firm I was approached through the internet, CEO's personal network)
USA	Strong, Formal (Use of existing network relationships – Japanese customer)
Canada	Strong, Formal (Use of CEO's existing network relationships)
Ireland	Equally strong and weak, Intermediary, Formal (CEO's personal network and association)
European countries (via European projects)	Strong, Intermediary, Formal (European Projects, Professor from Greece)
South Korea (future entry)	Strong, Formal (CEO's personal network – Associations)

5.2.9.4 Summary of Case I

Figure 17 depicts the evolution and role of social capital and structural dimension in the internationalisation of firm I. The foreign market entries are presented in chronological order. It is highlighted from the diagram that the efficacious role of social capital was more important for firm I. Additionally, mainly strong ties were important when firm I entered foreign markets. Social capital and strong ties had mainly an impact on facilitating firm I to enter rapidly foreign markets. A good example is when firm I established links with the US customer, the Japanese customer helped firm I to successfully find the US customer. Finally, Table 61 summarises the frequency of the different roles of social capital that occurred in the internationalisation of firm I.

Structural holes have not been acting as an impediment for firm I. The company is well connected and operates in a niche market where the number of potential customers is limited, additionally firm I works closely with associations to shape the needs of the market. Firm I can bridge possible structural holes using its current network relationships and using its customers and associations. The CEO of firm I is very active and the number of his network relationships allows him to bridge structural holes and approach key people in potential customers.

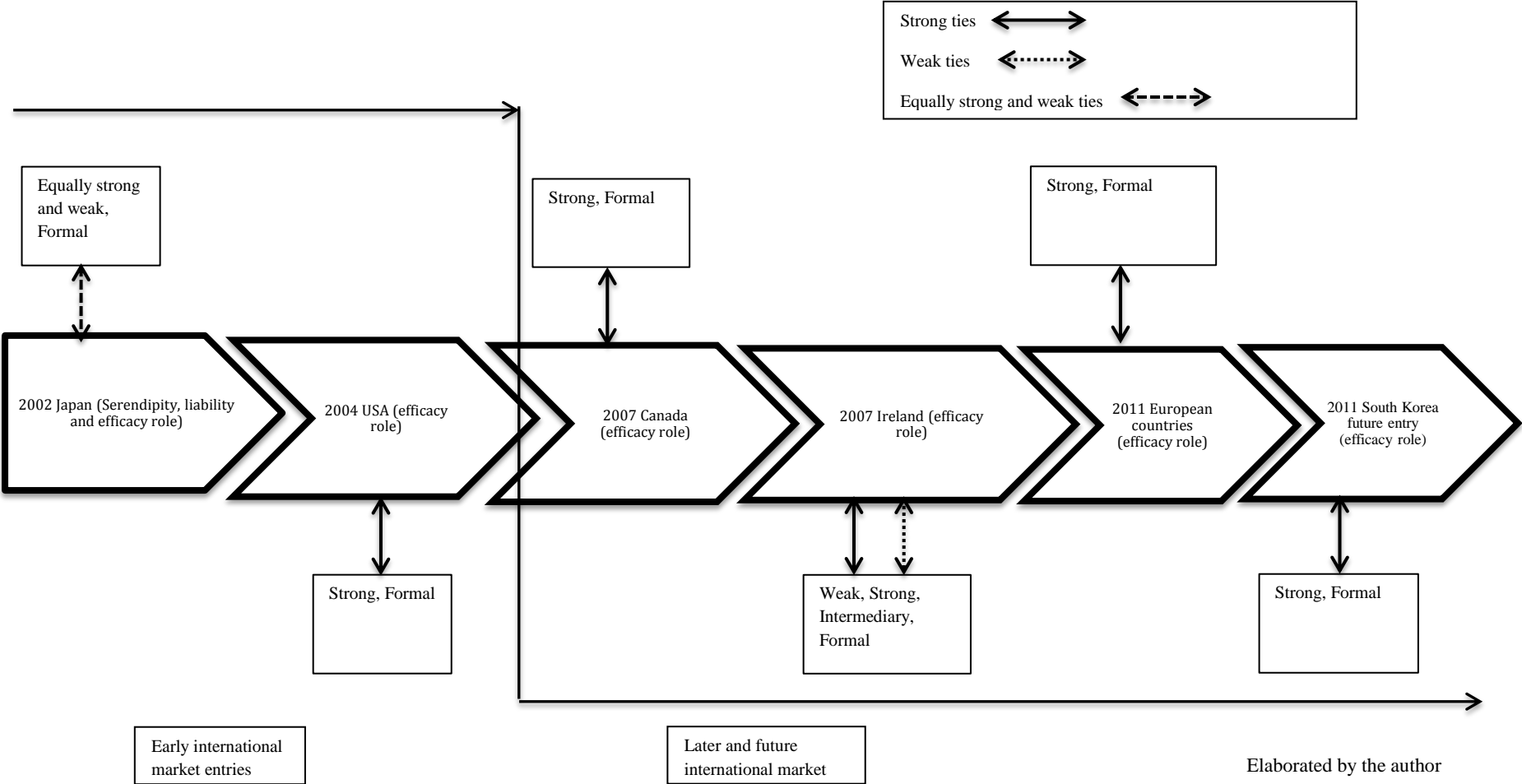
The role of internet is also important for getting necessary information on foreign markets and background information on potential partners and customers.

LinkedIn played a major role as a tool to track key people who may help firm I to get access into possible new clients.

Table 61 Case I - Roles of social capital (frequency)

Efficacy role	Serendipity role	Liability role
6	1	1

Figure 17 Case I - Evolution of social capital over time and structural dimension in international market entries



Chapter 6 Discussion

6.1 Cross-case analysis and discussion

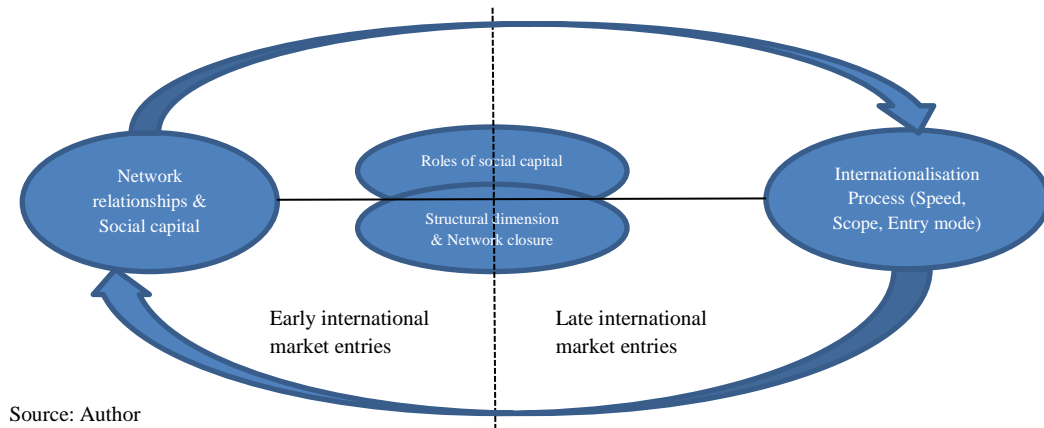
The discussion chapter of this thesis integrates the research questions developed in the literature review section and the empirical findings in the previous chapter. This chapter adopts a cross-case analysis of the findings examined in the previous chapter. These themes include various background information, the different roles of social capital, structural dimension and network closure. The role of social capital in the internationalisation process and the connection between it and the strength of ties and structure of relationships at the firm level are discussed as well. The contributions to theory and the implications for management of the newly established conceptual framework are assessed.

6.1.1 Discussion

The objective of this thesis was to provide information on three aspects taking place in the internationalisation of high technology INVs. The first one consists of the role of social capital and network relationships on early and late internationalisation. The second aspect is related to the interrelation of social capital, network closure and structural dimension. The third one examines the evolution of social capital diachronically in order to comprehend its dynamic nature.

Figure 18 depicts the initial model that captures and examines all the previously mentioned aspects. The use of cross-case analysis tables facilitate the emerge themes to be clearly compared and presented. Based on the developed tables the research questions are answered and the three aspects presented earlier are clearly highlighted. The integrated model (Figure 19) is presented at the end of this chapter and it highlights and crystallises the empirical findings. Figure 19 summarises how and why the examined and identified constructs interact with one another.

Figure 18 Conceptual Framework



The findings from the cross-case analysis are presented in terms of the three themes and research questions, which were developed in this study. These are outlined below. Comparative cross-case analysis is presented for each of the research questions. This chapter is divided into three sections based on the research questions presented earlier.

Finally, this chapter outlines and presents the different roles of social capital and their link to the strength of ties and the structure of the relationship with the internationalisation of high technology INVs.

6.2 Role of network relationships and social capital in the internationalisation of high technology INVs

The first research question of this study examines the role of network relationships and social capital in high technology INVs international market entries. Their relationship at early international market entries is separated from their relationship at later international market entries. This separation allows us to capture their importance at the founding and later stages of an INV.

Social capital and network relationships at the initial stages of an INV include individuals, inter-firm relationships and organisations. The role of the founders and the management team is paramount as the INV draws social capital from them. The social capital can be possessed by both the founders and the management team. Social capital and network relationships at the initial stages of internationalisation are

strongly interrelated and are a positive function of the management team's and founders' social capital. The bigger the founding team or the management team are the higher rate of success is to enjoy higher level of social capital.

A number of INVs inherit at the founding stage social capital from the founders and management team. Credibility, legitimacy and trustworthiness can be enhanced from existing network relationships and social capital. Firms, customers and other organisations offer the previously stated factors that facilitate INVs to enter the international arena.

The different roles of social capital and network relationships are summarised in a table. The cases cross-comparison is presented in order to draw conclusions and answer the first research question.

The importance of social capital and its role in the internationalisation of the firms is depicted in Table 62. All the case firms used their social capital and network relationships to enter foreign markets. Our findings support Johanson and Vahlne's (2006) statement that the internationalisation process is related to social capital. All the case firms used network relationships that span over the narrow home country borders and connect one market with other markets. For example some case firms entered new foreign markets based on references and introductions from previous foreign market entries. To be more precise cases A, B, E, F, G used network relationships from countries such as the US, Spain, France to enter new foreign markets. This study's findings are aligned with those of Johanson and Mattsson (1988) who found that networks and relationships expand the limits of a country. In other words, network relationships can be used many times in order to enter new foreign markets especially in our case where Scotland and Greece have limited domestic markets.

Our initial model highlights the importance of social capital and network relationships in internationalisation. They play an important role in the decision making process of INVs, a decision making process which is tightly related to the facilitating factors offered by them. The internationalisation is a path-dependent process, which is influenced by social capital and network relationships.

The role of the founding team and the management team is crucial because a set of skills is necessary and important in the successful leveraging and balancing of

social capital. INVs with endowed social capital and network relationships can overcome easier hindrances and obstacles in their internationalisation over those INVs that lack social capital and network relationships. INVs, in other words, take advantage of their resources offered by their network relationships and social capital.

Based on the findings network relationships and social capital act as facilitating factors into the case firms' decision to internationalise. The internationalisation of the companies is related to market pull factors and partly the strategy of the firm. These findings are aligned with the work of Coviello and Munro (1995), Ellis (2000), Ojala (2009) and Vasilchenko and Morrish (2011) where the strategy of the firms drives the internationalisation decisions. Additionally, it was found that all the examined INVs actively engaged to networking because the interviewees stated that networking with international customers and building a network is very important for successful foreign market entries. These are validated from previous studies that found that networking can have a positive impact on the speed and time of internationalisation and the importance of developing a network with foreign customers (Coviello and Munro, 1995; Mort and Weerawardena, 2006; Loane and Bell, 2006).

Moreover, the importance of the management team and their existent network relationships both from previous international and domestic work experience were crucial for successful foreign market entries. This was important for all the examined cases. The founding teams and the external managers and CEOs used their network relationships to come in contact with the gatekeepers and key people in potential customers. This study's findings partly agree with the findings of Loane and Bell (2006) who reported that managers with network relationships from previous international work positions can assist a firm to internationalise.

Network relationships are a very valuable source of knowledge and identification of opportunities in foreign markets. This study's case firms used their network relationships to gain knowledge which had a positive impact on the speed of internationalisation. The speed of internationalisation was positively influenced by the network relationships and social capital. The results of this study support the outcomes of Sharma and Blostermo's (2003) research who showed that network

relationships offer knowledge and opportunities and assist firms to internationalise faster (Freeman et al., 2006; Ghauri et al., 2008).

Furthermore, the country choice was mainly influenced as mentioned earlier by market pull factors and the size of the market. From Table 62 it is obvious that the USA was chosen as the first market to enter by three firms (cases A, C, F). The other case firms first entered countries such as Israel, the Netherlands, France, Spain and Hungary. It is important to highlight that our findings validate the propositions of Bell et al., (2003) and Ojala and Tyrvaïnen (2007) who found that knowledge-intensive SMEs due to their niche market focus products prefer to enter lead markets. The USA and Israel are markets that lead the high technology sector.

Emerging differences between Scottish and Greek high technology INVs

Two main differences emerged in this study: i) the background of the entrepreneurs; ii) the effect of the country of origin. Those differences are discussed to better understand the impact of those differences in the internationalisation process of the case firms.

A difference between the Scottish and Greek entrepreneurs' backgrounds was observed. The Greek entrepreneurs did not have previous international work experience this extends the finds of example Oviatt and McDougall (1994) who supported that one of the main reasons for going abroad is the previous international experience of the management team. Only in case C the Greek CEO worked in the US. On the other hand, their Scottish counterparts have previous international working experience. The only exemption was the founder of case I who does not have previous international work experience. Besides the lack of previous international experience of the founding team, the Greek cases (A, B, D, E) and the Scottish case (I) rapidly internationalised their operations. Another emerging difference is the different educational background of the founding teams. The Greek entrepreneurs hold PhDs (except the founding team of case C); whereas the Scottish entrepreneurs hold BScs and MScs. It can be concluded that the Greek entrepreneurs could substitute their lack of previous international work experience with their educational background. The Greek entrepreneurs had a large social network (case

A, case B, case E) and during their PhD studies collaborated with foreign MNEs in common European research projects (case A, case B). Some of these MNEs became their customers when the Greek entrepreneurs established their companies. In other words the educational background of Greek entrepreneurs assisted them to internationalise rapidly. Our findings support the findings of Manolova et al., (2010) who supported that firms internationalise faster when their social network is large in the home network.

Another difference between the Greek and Scottish INVs is that the Greek INVs preferred to hide their Greek identity, for this reason and problems faced with the Greek ecosystem some of the Greek INVs moved their Headquarters either to the USA or the UK (cases A, B, C) and retained the R&D centres in Greece. The Greek companies faced cultural stereotypes from their partners and customers. The findings of this study come in line with the findings of Fischer and Reuber (2011) who stated that 55% of their sample software companies that operate and sell their products online did not reveal the country of origin.

On the other hand, the Scottish INVs disclose their identity and their Headquarters remain in Scotland. The ecosystem in Scotland is more developed and the support from the government is higher.

Table 62 Cross-case analysis, network relationships and social capital in the internationalisation of INVs

Case/Year of inception	Country entered (chronological order)	Role of social capital (times occurred)
Case A /2000	USA	Efficacy role (2)
	Japan	Serendipity (1), liability (1) and efficacy role (2)
	Israel	Efficacy role (1)
	China	Efficacy role (1)
	Russia	Efficacy role (1)
	South Korea	Efficacy (1) and serendipity role (1)
Case B/2000	Spain	Efficacy role (1)
	France	Efficacy role (1)
	Italy	Efficacy role (1)
	USA	Efficacy role (3)
	India	Efficacy role (1)
	Japan	Efficacy role (1)
Case C/2011	USA	Efficacy role (4)

	UK Brazil (future entry) Japan or China or Singapore (future entry)	Serendipity (1) and efficacy role (1) Serendipity (1) and efficacy role (1) Efficacy role (1)
Case D/2007	Netherlands USA Taiwan India	Efficacy role (1) Efficacy role (2) Serendipity role (1) Serendipity role (1)
Case E/2009	Israel USA Germany Japan South Korea China	Efficacy role (1) Efficacy (1) and serendipity role (1) Efficacy role (2) Efficacy (2) and serendipity role (1) Efficacy role (1) Efficacy role (1)
Case F/1997	USA Canada Australia Hong Kong Singapore India Japan	Efficacy (1) and serendipity role (1) Efficacy role (1) Efficacy (1) and serendipity role (1) Serendipity role (1) Serendipity role (1) Serendipity role (1) Efficacy (1) and serendipity role (1)
Case G/2001	France USA Japan China South Korea (future entry)	Efficacy role (1) Efficacy (3) and liability role (1) Efficacy role (2) Serendipity (1) and efficacy role (2) Efficacy role (1)
Case H/2009	Hungary (future entry) USA (future entry) Switzerland (future entry) Hong Kong (future entry)	Efficacy role (2) Efficacy role (1) Efficacy role (1) Efficacy role (1)
Case I/2002	Japan USA Canada Ireland European countries (via European projects) South Korea (future entry)	Serendipity (1), liability role (1) and efficacy (1) Efficacy role (1) Efficacy role (1) Efficacy role (1) Efficacy role (1) Efficacy role(1)

It is obvious from Table 62 that the efficacious role of social capital is more frequent both in initial and later international market entries. The findings of the present research partly agree with those of Agndal et al. (2008) who found that the efficacious role of social capital is more important in the initial foreign market entries. Additionally, the efficacious role of social capital is associated with the speed of internationalisation. All the examined case firms used the efficacious role of social capital to enter faster international markets both geographically close and distant countries. Agndal et al. (2008) stated that the serendipitous role of social capital becomes more important in later foreign market entries and especially markets with high psychic distance. However, this study's findings partly support the findings of Agndal et al., (2008) that the serendipitous role of social capital is more present in later foreign market entries and more precisely when a firm enters markets with high psychic distance as described by Johanson and Wiedersheim-Paul (1975:308) who said that this includes "factors preventing or disturbing the flow of information between firm and market". The psychic distance also includes cultural and language differences between two countries. The findings show that the examined firms entered distant markets at an early stage. Only Case B, Case E and Case G initially entered geographically closer markets (Spain, Israel and France respectively). All the case firms found local agents in the geographically distant markets that helped them to find new customers and connect them with their existing networks. The size of the network of the local agent was one of the most important factors to be chosen by the case firms. The findings of this study confirmed the findings of Rauch (2001) who stressed the crucial role of local agents in offering access to the local network and giving information regarding opportunities in the entered market. This study also supports Ellis' (2000) findings that firms rely on local agents especially for gaining information due to the lack of access to formal data.

The liability role of social capital occurred only three times (case A, case G, case I), the network relationships in these cases were decaying and the firms had to find new partners in Japan and the USA. The logic behind these decisions lies in the firms' necessity to retain their presence in these markets. Thus, they had to use the efficacious role of social capital to find new partners.

The serendipitous role of social capital was important in early and later international market entries as shown in Table 62. The serendipitous role of social capital is mainly observed in foreign market entries with high psychic distance which highlights that those were triggered by unexpected events. A more in-depth observation of the findings draws the conclusion that the serendipitous role of social capital was observed in Asian market entries (case A, case C, case D, case E, case F, case G, case H, case I). This can be explained due to the lack of network relationships in these markets and as mentioned earlier to the high psychic distance between the countries that the firms are based and the entered markets. Therefore, the serendipitous role of social capital becomes more important in these situations. Another explanation is that these firms were not members of a network in the Asian countries. Thus, the information to new customers and opportunities was not available to them. This is supported by the findings of Rauch (2001) who found that the serendipity role of social capital is also important in the early internationalisation phase. He also supported that the lack of network access and exclusion from existing networks might explain the importance of serendipity. The findings of this study partly agree with the findings of Agndal et al., (2008) who noted that geographically distant markets with high psychic distant are not so often pursued by the firms. Agndal et al., (2008) did not present and explain in their findings in which countries the serendipity role of social capital occurred more frequently.

The serendipitous role of social capital had three main sources, attendance to tradeshows, online contacts and the internet. The importance of the internet has been underlined in previous studies. The findings of this study are aligned with those of McDougall et al., (1994) where they found that technologies such as the internet are enablers for the internationalisation of INVs. This study attempted to answer the call of Reuber and Fischer (2011) for focusing and explaining the role of internet in the identification and pursuit of international opportunities. It was found that internet is indeed an enabler for internationalisation. All the case companies used the internet to learn about foreign markets. In addition, case firms with more structural holes used (e.g. case F) virtual communities for two reasons: a) to enhance their reputation; and b) access new customers in geographically distant markets. Case F used an Australian virtual community to find customers in Australia but also to other

countries. The members of this community were scattered around the world. These findings corroborate with those of Reuber and Fischer (2011) who reported that online communities can assist firms to access audiences in distant markets and reduce the risk. The researcher would also add that online associations played also a crucial role to the internationalisation of the case firms. However, most of the firms due to the scarcity of resources mentioned that being member of these online associations incurred high fees. Those online associations were very useful to attract and identify new customers.

All the case firms were approached from a future partner through the internet; this highlights how important the internet is and its connection with the serendipitous role of social capital. The interviewees of all case firms explained that Google search is another source for being found online. They emphasised how important is the company to be on the top Google search results. This can have a positive impact for potential customers because if the result is high the legitimacy and trustworthiness of the company can be increased.

Table 63 highlights that the efficacious role of social capital occurred more frequently, 58 times, in the internationalisation process of the examined high technology INVs. The serendipitous role of social capital was the second most frequent value, 16 times, and the liability role of social capital was the least frequent value, 3 times. It can be concluded that the efficacious role of social capital is the most crucial in terms of foreign market entries since INVs use their existing network relationships both in initial and later market entries.

Table 63 Cross-case analysis frequencies of different roles of social capital occurred in the internationalisation process

Case	Efficacy role	Serendipity role	Liability role
Case A	8	2	1
Case B	8	0	0
Case C	7	2	0
Case D	3	2	0
Case E	8	2	0
Case F	4	6	0
Case G	9	1	1
Case H	5	0	0
Case I	6	1	1
Total	58	16	3

It is obvious from Table 63 that the serendipitous role of social capital occurred more times than the efficacious role in case F only. One explanation may be the nature of the product that the company offers. Company F develops software that detects bugs on websites. Another explanation may be that the company is heavily relied on digital sales and customers can buy the software only online. This will be better explained and analysed by answering the second research question, which attempts to examine and understand in-depth the relationship between the different roles of social capital, the structural dimension and network closure.

All of the examined case firms followed the same pattern to their initial internationalisation steps, they preferred low commitment entry modes. All the firms had direct sales or sales through resellers. The findings of the present research align with the findings of Johanson and Vahlne (1977, 2006, 2009) who supported that firms follow lower commitment entry modes in their initial internationalisation stages and higher commitment entry modes in later internationalisation stages. They also added that internationalisation process is related to stronger and deeper international relationships that can offer and develop social capital. Moreover, the case firms that decided to establish subsidiaries or move their headquarters in foreign markets were more committed in those markets (cases A, B, C, D, G). The regional offices were recruited with local people in order to use their existing networks. The companies that did not recruit local people or did not set up local offices were facing the problem of scarcity of resources or they were at the early stages of their establishment (cases E, H, I). The only case that has very strong online presence and relies on the digital economy is case F. The findings of this research support the results of Oviatt and McDougall (1994, 2005) who stated that INVs rapidly change entry modes and move from lower to higher commitment entry modes faster than traditional firms. INVs are able to overcome the obstacle of the geographic distance as they enter distant markets (Oviatt and McDougall, 1994; Gabrielsson et al., 2008).

It is observable from the findings that INVs in the high technology sector develop complex relationships with their business partners. These firms use more complex and multiple entry modes, when they decide to enter new foreign markets, such as marketing with partners and distributors. In later stages of INVs

internationalisation process, the firm may open regional offices and subsidiaries in the foreign markets. The findings of the current study support the findings of Coviello and Munro (1997) who found that INVs adopt higher commitment entry modes in later international entry modes. The entry mode of high technology companies does not follow the traditional Uppsala model of internationalisation because the companies can leap some of the internationalisation stages described in this model. International growth of the examined INVs was related to network relationships and social capital. They played an important role because all case firms used two main sources to fund and support their internationalisation plans. The first one consists of finding venture capitals, which assist the INVs with their funds to internationalise and offer INVs access to their networks and social capital. The second source includes external CEOs and management teams that have strong networks and social capital. The findings of the current research agree with those of McDougall et al. (1994) and Coviello and Munro (1997) who supported that networks can assist the international growth of high technology firms.

All case firms used their network relationships and social capital to internationalise faster, which is clear from Table 62 where network relationships and social capital assisted the examined firms to internationalise speedier. The findings of this study support the findings of previous authors who found that network relationships can enable fast and early internationalisation (Coviello and Munro, 1995; Oviatt and McDougall, 1994; Madsen and Servais, 1997). The examined INVs faced the problem of scarcity of resources especially in their initial internationalisation phases. However, it is obvious from Table 62 that they entered foreign markets either immediately after their inception (cases A, B, C, F, I) or one to three years from their establishment (cases D, E, G). Scarcity of resources acted as a motivating factor to use and search for network relationships and social capital that could enable and facilitate the internationalisation of INVs. The findings of this study are aligned with those of Coviello and Munro (1999), Johanson and Vahlne (2003) and Mort and Weerawardena (2006) who showed that SMEs are pushed to identify networks that have a positive impact on internationalisation. The examined INVs expanded their foreign operations after their initial international market entries with the assistance of their network relationships and social capital. Previous colleagues,

current partners, investors and advisors enabled later internationalisation of the case firms. The findings of the present study corroborate those of Oviatt and McDougall (2005) and Coviello (2006) who stated that networks can help SMEs with scarcity of resources to support their international business activities and expansion.

Toward a new type of INV

It is important to highlight at this point that all the examined INVs operate in a niche market. Being a new niche market player is important and can influence the strategy of a firm. The case firms strategically choose their customers and search for key people who can introduce them or give them access to the target customers. For this reason the efficacious role of social capital was more important than the serendipitous role. In other words, niche market INVs use their existing network relationships and social capital to approach and get in contact with potential customers. The only exemption in the case firms was firm F that does not focus on particular customers and companies because its product has a very wide application. On the other hand, case firms A, B, C, D, E, G, H and I target specific customers and companies. All in all, this is an explanation why the serendipitous role of social capital was more important for company F and less important for all the other case firms.

The researcher searched on the IB and IE literature to explain why and how niche market players differentiate themselves from their competitors but he could not find sufficient answers. Thus, the strategy literature was searched to find plausible answers. The findings of this study support and extend the findings of Echols and Tsai (2005:232) who demonstrated that firms in a niche “could have a more positive impact on their performance when network embeddedness is high”. This study’s findings also extend the findings of the same authors who highlighted the importance of embedded inter-firm networks especially when a firm decides to differentiate itself from competitors and other firms regarding its products or operations. This study extended their findings in the context of high technology INVs internationalisation process in the IE field. Niche market INVs strategically target their customers in order to sustain their competitive advantage and unique knowledge. Additionally,

niche market high technology INVs have a certain number of potential customers. All the case firms highlighted that they target particular companies and customers. The older firms have created a strong presence in the market and are better embedded in networks so they can easily bridge all the structural holes with the efficacious role.

6.2.1 Summary

It can be concluded that the efficacious role of social capital is associated with higher commitment entry modes, whereas the serendipitous role of social capital is mainly associated with lower commitment entry modes. Moreover, this study's findings contradict at a certain extent those of Agndal et al., (2008) who supported that the serendipitous role of social capital becomes more important in later international market entries.

The first research question attempts to answer and shed light on the importance of social capital and network relationships in the internationalisation of high technology INVs. It was found that both network relationships and social capital played a paramount role, however, they mainly acted as enabling factors. The INVs strategically decided to enter foreign markets, establish partnerships and target specific customers. The serendipitous role of social capital occurred when the case firms entered the Asian markets due to lack of direct network relationships in those markets. The efficacious role of social capital occurred more times in Western countries and in later international market entries both in Asian and Western countries. Over time firms have the ability to expand their networks and increase their social capital and can better reap the benefits of those. Additionally, the efficacious role was strongly related to the strategic choice of customers and markets. An unexpected difference between the Scottish and the Greek INVs was the backgrounds of the entrepreneurs where the majority of the Greek entrepreneurs did not have previous international work experience compared to their Scottish counterparts who had previous international work experience. This study's findings extend those of Oviatt and McDougall (1994) who supported that previous

international work experience of the management team is one of the main reasons for a firm to go abroad.

A new type of INV was also introduced: the niche market INV. These firms strategically choose their future partners and customers. In the following section it is attempted to explain and understand how the social capital is related to network closure and structural dimension in the context of the new type of high technology INVs.

6.3 Mechanism of structural dimension and network closure interrelated with social capital in the internationalisation process of high technology INVs

The second research question addressed the link and interrelation of social capital, structural dimension and network closure with the internationalisation process of INVs. The benefits accruing from the interrelation between structural dimension, network closure and the different roles of social capital were captured in the previous chapter. It is very important to comprehend that there are differences between INVs that inherited a big number of network relationships from their founders and management team and those that are not so well connected in their industry. The benefits accruing from this interrelation are also captured in the findings chapter.

The strength of ties and the structure of the relationship can influence the internationalisation process so firms with many network relationships and rich social capital tend to use strong and formal ties. On the other hand, firms with less network relationships and poor social capital tend to use weak and intermediary ties.

The different roles of social capital, structural dimension and network closure with the internationalisation of high technology INVs are summarised in a table. The cases cross-comparison is presented in order to draw conclusions and answer the second research question. Table 64 illustrates the role of social capital and its relation with the strength of ties and the structure of the relationships.

Table 64 Structural dimension, network closure and different roles of social capital

Case/Year of inception	Country entered (chronological order)	Role of social capital	Strength of ties and structure of relationship
Case A /2000	USA	Efficacy role	Strong, Formal
	Japan	Serendipity, liability and efficacy role	Weak, Strong, Intermediary, Informal, Formal
	Israel	Efficacy role	Equally strong and weak, Formal
	China	Efficacy role	Equally strong and weak, Formal
	Russia	Efficacy role	Equally strong and weak, Formal
	South Korea	Efficacy and serendipity role	Equally strong and weak, Formal
Case B/2000	Spain	Efficacy role	Strong, Intermediary, Formal
	France	Efficacy role	Strong, Intermediary, Formal
	Italy	Efficacy role	Strong, Equally strong and weak, Formal
	USA	Efficacy role	Strong, Equally strong and weak, Intermediary, Formal
	India	Efficacy role	Strong, Equally strong and weak, Formal, Informal
	Japan	Efficacy role	Equally strong and weak, Intermediary, Formal
Case C/2011	USA	Efficacy role	Strong, Intermediary, Informal, Formal
	UK	Serendipity and efficacy role	Weak, Strong, Intermediary, Formal
	Brazil (future entry)	Serendipity and efficacy role	Weak, Equally strong and weak, Intermediary
	Japan or China or South Korea (future entry)	Efficacy role	Weak, Equally strong and weak, Intermediary
Case D/2007	Netherlands	Efficacy role	Strong, Formal
	USA	Efficacy role	Strong, Equally strong and weak, Intermediary
	Taiwan	Serendipity role	Strong, Weak, Intermediary
	India	Serendipity role	Equally strong and weak, Intermediary
Case E/2009	Israel	Efficacy role	Weak, Intermediary
	USA	Efficacy and serendipity role	Weak, Intermediary
	Germany	Efficacy role	Strong, Weak, Formal, Intermediary
	Japan	Efficacy and serendipity role	Strong, Weak, Intermediary, Formal
	South Korea	Efficacy role	Weak, Intermediary, Formal
	China	Efficacy role	Strong, Formal
Case F/1997	USA	Efficacy and serendipity role	Weak, Intermediary
	Canada	Efficacy role	Strong, Formal
	Australia	Efficacy and serendipity role	Weak, Strong, Intermediary, Formal

	Hong Kong	Serendipity role	Weak, Intermediary, Formal
	Singapore	Serendipity role	Weak, Intermediary, Formal
	India	Serendipity role	Weak, Intermediary, Formal
	Japan	Efficacy and serendipity role	Equally strong and weak, Weak, Intermediary, Formal
Case G/2001	France	Efficacy role	Equally strong and weak, Formal
	USA	Efficacy and liability role	Strong, Formal
	Japan	Efficacy role	Strong, Formal
	China	Serendipity and efficacy role	Weak, Strong, Intermediary, Formal
	South Korea (future entry)	Efficacy role	Strong, Formal
Case H/2009	Hungary (future entry)	Efficacy role	Strong, Formal
	USA (future entry)	Efficacy role	Strong, Formal
	Switzerland (future entry)	Efficacy role	Strong, Formal
	Hong Kong (future entry)	Efficacy role	Strong, Formal
Case I/2002	Japan	Serendipity and liability role	Weak, Equally strong and weak, Intermediary, Informal, Formal
	USA	Efficacy role	Strong, Formal
	Canada	Efficacy role	Strong, Formal
	Ireland	Efficacy role	Equally strong and weak, Intermediary, Formal
	European countries (via European projects)	Efficacy role	Strong, Intermediary, Formal
	South Korea (future entry)	Efficacy role	Strong, Formal

It is clear from Table 64 that the efficacious role of social capital occurred more times in the internationalisation process of the examined INVs. The serendipity role of social capital was less frequent in the internationalisation of INVs. Finally, the liability role of social capital was observed only three times. Namely, the efficacious role of social capital played a more crucial role and enabled internationalisation.

Strong and formal ties were associated to the efficacious role of social capital; whereas the serendipitous role of social capital was associated to weak and intermediary ties. Finally, weak and formal ties were associated to the liability role of social capital.

6.3.1 Strength of ties and structural dimension in initial and later foreign market entries

Strong ties were important for the initial foreign market entries for cases A, B, C, D and H. Weak ties were important for cases E, F and I. Equally strong and weak ties were important in the initial foreign market entries for cases B and G. The case firms that used strong ties in their internationalisation were related to former colleagues or to personal contacts that the founders of the firms had. Weak ties were observed in firms that tradeshows and the internet initiated early foreign market entries. Equally strong and weak ties were related to firms B and G founders. The researcher characterised the ties as equally strong and weak because the interviewees did not describe their contacts using the words trust, emotionally attached, etc.

Equally strong and weak ties were important for later international market entries (cases A, B, C, D, I). Those ties encompass contacts with customers and other contacts that the firms have. Firms may not be embedded to the network and network relationships are not so trusted and are mainly superficial.

Weak ties were also important in later foreign market entries in cases C, D, E, F and G. One explanation is that those firms used tradeshows and the internet to enter foreign markets and network relationships that were not characterised by high levels of trust.

The different roles of social capital and their relationship with the structural dimension and network closure are examined and analysed in-depth in the sections below. The analysis will help us to draw conclusions and understand the mechanism between social capital, strength of ties and structural dimension.

6.3.2 Efficacy role of social capital, structural dimension and network closure

The different critical international events that were captured in this study were broken down in Table 65 in order to explain the links between the different roles of social capital and the strength of ties and structure of relationships.

Table 65 Cross-case analysis, frequencies of efficacy role of social capital, strength of ties and structure of relationship occurred in the internationalisation of INVs

Cases/Efficacy Role	Strong	Weak	Equally strong and weak	Formal	Informal	Intermediary
Case A Efficacy1	X			X		
Case A Efficacy2	X			X		
Case A Efficacy3		X		X		X
Case A Efficacy4	X				X	
Case A Efficacy5			X	X		
Case A Efficacy6			X	X		
Case A Efficacy7			X	X		
Case A Efficacy8			X	X		
Case B Efficacy1	X			X		X
Case B Efficacy2	X			X		X
Case B Efficacy3	X		X	X		
Case B Efficacy4	X					X
Case B Efficacy5	X			X	X	
Case B Efficacy6	X			X		
Case B Efficacy7	X			X		
Case B Efficacy8	X			X		
Case B Efficacy9			X	X		X
Case C Efficacy1	X				X	
Case C Efficacy2	X			X		X
Case C Efficacy3	X			X		
Case C Efficacy4	X			X		
Case C Efficacy5	X			X		
Case C Efficacy6			X	X		
Case C Efficacy7			X	X		
Case D Efficacy1	X			X		
Case D Efficacy2		X				X
Case D Efficacy3			X			X
Case E Efficacy1		X				X
Case E Efficacy2		X				X
Case E Efficacy3	X			X		
Case E Efficacy4		X				X
Case E Efficacy5	X			X		
Case E Efficacy6		X				X
Case E Efficacy7		X		X		X
Case E Efficacy8	X			X		
Case F Efficacy1		X				X
Case F Efficacy2	X			X		
Case F Efficacy3	X			X		

Cases/Efficacy Role	Strong	Weak	Equally strong and weak	Formal	Informal	Intermediary
Case F Efficacy4		X				X
Case G Efficacy1			X	X		
Case G Efficacy2	X			X		
Case G Efficacy3	X			X		
Case G Efficacy4	X			X		
Case G Efficacy5	X			X		
Case G Efficacy6	X			X		
Case G Efficacy7	X			X		
Case G Efficacy8	X			X		
Case G Efficacy9	X			X		
Case H Efficacy1	X			X		
Case H Efficacy2	X			X		
Case H Efficacy3	X			X		
Case H Efficacy4	X			X		
Case I Efficacy1			X	X		
Case I Efficacy2	X			X		
Case I Efficacy3	X			X		
Case I Efficacy4			X	X		X
Case I Efficacy5	X			X		X
Case I Efficacy6	X			X		
Total	38	09	12	47	3	17

Table 65 shows that the efficacy role of social capital is related to strong and formal ties. An explanation is that companies, which use the efficacious role of social capital rely on trust and people who have been working with for years. Additionally, the formal ties encompass current business partners and customers who assist the focal firms to find new customers in foreign markets.

The efficacious role of social capital is less related to the equally strong and weak ties because the case firms do not depend on less trusted parties to get access either to new customers or new networks. The findings of the present study come in accordance with those of Soderdvist and Chetty (2013) who found that strong ties are more crucial in INVs because those can act as a bridge for firms that are not connected to a network.

It was also found that strong ties were associated to intermediary ties, which included the internet, government agencies and the Greek cluster in Athens and Patras. The Greek firms took advantage of the Greek cluster which offered them

funding to attend tradeshows abroad. In those tradeshows the firms found new customers and partners. Moreover, the Greek cluster gave access to the Greek firms to contact with the Greek community in California. Additionally, the Scottish firms used the intermediary role of Scottish Enterprise which offered firms with valuable business development support. Furthermore, the Scottish Development International assisted the Scottish firms to come in contact with the Scottish expatriates around the world.

Weak ties included the relationships initially formed through the internet, relationships through tradeshows and relationships initiated through government agencies, so weak ties were associated with intermediary ties. Weak ties are less associated with the efficacious role of social capital, which was expected because the examined INVs used weak ties mainly to acquire knowledge about new market opportunities and learn about foreign markets. The weak ties did not have an impact on the choice of new customers and new partners in foreign markets. Their role was more related to feedback on products and as mentioned earlier new market opportunities. The findings of this study corroborate the findings of previous studies which found that weak ties are important for offering valuable information and for getting access to new ideas (e.g. Granovetter, 1973; Burt, 2004). Additionally, the characterisation of weak ties in this study follows and supports the definitions and findings from previous studies, which found that weak ties are superficial and trust is not embedded in the relationship and the parties are not emotionally attached (e.g. Dubini and Aldrich, 1991; Kontinen and Ojala, 2011a; Soderqvist and Chetty, 2013). Based on the findings of this study it can be concluded that weak ties were associated with intermediary ties.

The efficacious role of social capital is related to formal ties, which was also expected because the examined INVs used their network relationships, which included business partners, current clients, government agencies, external board members, angel investors, advisors and venture capitalists to enter foreign markets. The link between the efficacy role and formal ties is illustrated in Table 65. Foreign market entries especially during the initial stages of internationalisation were facilitated by the efficacious role of social capital. Therefore, formal ties create, build and enhance social capital of a firm.

Moreover, entry mode choices can be facilitated by the efficacious role of social capital, strong and formal ties. Existing customers and partners introduced and gave references to the examined INVs in order to approach and find new customers in foreign markets. The findings of this study support the findings of Chetty and Agndal (2007), Agndal et al., (2008) and Kontinen and Ojala (2011a) who found that the efficacy role plays an important role in the internationalisation of firms. It can be added that the efficacious role of social capital is related to higher entry mode commitments.

Furthermore, it was found that the efficacy role was associated with knowledge and resources offered from network relationships and networks. All the interviewees stated that the higher interaction with their partners led to more obtained resources. The current study's findings align with the findings of Buckley and Carter (2004), Johanson and Vahlne (2006) and Chetty and Agndal (2007) who found that networks offered information and knowledge development to their members. Additionally, information and knowledge derived from networks were important for easing business in the international arena. This study's findings corroborate those of Ellis (2000) and Wong and Ellis (2002) who described that knowledge exchange to network members have a positive impact on internationalisation. Finally, the interaction between business partners augmented the knowledge to the examined firms. This finding comes in line with the findings of Johanson and Mattsson (1987) who showed that business partners assist firms to expand and grow their knowledge.

To conclude the efficacy role is very valuable for firms because it derives from the firms' network relationships so the findings of the current research support the literature on social capital (e.g. Nahapiet and Ghoshal, 1998; Yli-Renko et al., 2002).

6.3.3 Serendipity role of social capital, structural dimension and network closure

The examined INVs operate in the high technology industry and the majority of them develop software. The role of the internet was highlighted earlier in this chapter and in the literature review chapter. New technologies have changed how

high technology firms operate and internationalise. The enabling and facilitating role of the internet and other forms of technology were stressed by a number of authors (McDougall et al., 1994; Yamin and Sinkovics, 2006; Reuber and Fischer, 2011; Fischer and Reuber, 2011).

The serendipitous role of social capital played an important role in the internationalisation of the examined INVs. This is illustrated in Table 66. It is obvious that the serendipitous role of social capital is associated with weak and intermediary ties. INVs' internationalisation initiated by the serendipitous role of social capital was related to attendance of tradeshows, the internet and unexpected events. The serendipitous role of social capital was occurred in the initial foreign market entries in cases A, B, E, F and I. As described earlier those foreign market entries took place mainly in Asian countries and the entry mode choices were related to lower commitment entry modes. Many of the firms were approached on the internet by potential customers and partners. In other words, weak and intermediary ties were the most frequent ones in the analysis.

Table 66 Cross-case analysis, frequencies of serendipity role of social capital, strength of ties and structure of relationship occurred in the internationalisation of the INVs

Cases/ Serendipity Role	Strong	Weak	Equally Strong and weak	Formal	Informal	Intermediary
Case A Serendipity1		X		X		X
Case A Serendipity2			X	X		
Case C Serendipity1		X		X		X
Case C Serendipity2		X				X
Case D Serendipity1		X				X
Case D Serendipity2			X	X		X
Case E Serendipity1		X				X
Case E Serendipity2		X				X
Case F Serendipity1		X		X		X
Case F Serendipity2		X				X
Case F Serendipity3		X		X		X
Case F Serendipity4		X		X		X
Case F Serendipity5		X		X		X
Case F Serendipity6		X				X
Case I Serendipity 1		X				X
Total	0	13	2	8	0	14

The findings of this study come in contradiction with the findings of Agndal et al., (2008) who supported that the serendipity role is associated with later international market entries.

Yli-Renko et al., (2002) found that new opportunities can be presented to a firm from information, which can be acquired from its networks. These opportunities can be unthinkable to the firm. In the examined cases the serendipity role was not associated with the existing network of the examined firms. The only exception was case A where the entry to the South Korean market was facilitated by an unexpected event related to the firm's existing network.

The internet initiated foreign entries in distant markets and its importance is highlighted in high technology INVs. The examined case firms were approached by new customers and partners through the internet, all the interviewees stressed the importance to create an online profile that can be easily found on internet search engines such as Google. Tradeshows also initiated international foreign market entries, which were associated to weak and intermediary ties.

It is highlighted that weak ties are related to the serendipity role of social capital. This relation is in line with Chetty and Agndal (2007) and Kontinen and Ojala (2011a) who found that unexpected events are precipitated by weak ties. Additionally, this study's findings come in line with the work of Granovetter (1973) who demonstrated that weak ties assist firms to enter new networks and supply them with new information.

6.3.4 Liability role of social capital, structural dimension and network closure

The liability role of social capital occurred only three times in the examined cases; this is illustrated in Table 67. The ties were decaying and this triggered the establishment of new partnerships. It is important to underline that the liability role occurred to the initial international market entries in cases A, G and I. The liability role was observed in Japan in cases A and I and in the USA in case G. One explanation may be that the big psychic distance between the origin of case firms (Scotland and Greece) and Japan drove social capital to take the liability form.

Another explanation may be that initially the serendipitous role of social

capital triggered the entry in the Japanese market. Hence, the firms did not have access to any information on the partners that approached them and the level of trust was low. Those factors may have had a negative impact on the successful development of the partnerships and social capital. In case G the liability role of social capital occurred in the US market. The partner was not so engaged in the development of the firm and had different personal plans. The reasons behind the decision to terminate the collaboration in the USA were similar with those in cases A and I. Only in case G the CEO's personal contacts introduced and proposed him the partner in the US. The liability role was associated with the serendipity role in cases A and I because the partners approached initially the firms. On the other hand, the liability role in case G was associated with the efficacious role because business partners suggested the partner to the firm. The liability role of social capital is related to formal ties because the parties involved encompass parties with monetary transactions.

The findings of the present research come in line with the findings of Yli-Renko et al., (2002) who supported that social capital has a disadvantage associated with time, costs and risks which are related to the development of social capital. Additionally, this study supports the findings of Uzzi (1997) who highlighted that penetrating a market can be difficult for new entrants as those were overembedded. Consistent with the work of Williamson (1985) on opportunistic behaviour the lack of trust, mutual commitment and control in a relationship can lead social capital to form into a liability. In the cases that the liability occurred the relationships were characterised by lack of trust, mutual commitment and control (i.e. weak ties).

Table 67 Cross-case analysis, frequencies of liability role of social capital, strength of ties and structure of relationship occurred in the internationalisation of the INVs

Cases/ Liability role	Strong	Weak	Equally strong and weak	Formal	Informal	Intermediary
Case A Liability1		X		X		
Case G Liability1		X		X		
Case I Liability1		X		X		
Total	0	3	0	3	0	0

Despite the negative impact that the liability role of social capital might have on firms, it might also trigger new entry mode choices or initiate new partnerships. The liability role of social capital may create new opportunities to firms as the examined INVs had to become more engaged to those markets (Japan and USA). It is proposed that a rapid adaptation to the voids that the liability role of social capital creates can drive to successful presence in a market. Additionally, the efficacious role of social capital may become more important after the occurrence of the liability role of social capital. Thus, the firms are forced and pushed to use their existing network relationships to overcome the obstacles created from the liability role of social capital. The findings of this study support the findings of Chetty and Agndal (2007) and Agndal et al., (2008) who explained that liability role can trigger a mode change.

6.3.5 Summary

The mechanism of network closure and structure and their interrelation to the different roles of social capital are summarised and discussed in this section. In most of the case firms, it can be seen that weak ties were more frequent where the liability role of social capital occurred. It can be concluded that weak ties were important for high technology SMEs when the need for unique knowledge is necessary. This is also aligned with the ideas of Burt (2004) and Granovetter (1973) that unique knowledge comes through weak ties. However, strong ties were also paramount for the case firms especially when the efficacious role of social capital occurred. Strong ties such as former colleagues and current customers played an important role in the internationalisation process of the examined high tech INVs. Strong ties are characterized by mutual trust, all the interviewees mentioned that trust between them and their network relationships were crucial.

The mechanism between the efficacy role and strong and formal ties is very dynamic and illustrates the importance of networks and network relationships in successful foreign market entries. This is also highlighted by the perception of all the interviewees on network relationships who stressed that these are perceived as strategic assets for their firms. The study's findings support the findings of Harris

and Wheeler (2005) and Vasilchenko and Morrish (2011) who demonstrated that the successful entrance to foreign markets is facilitated by the strategic role of network relationships and that the development of network relationships to foreign markets is sometimes based on serendipity. Furthermore, the strategic role of networks and network relationships was important as they were sources of knowledge on foreign markets and they had a positive impact on firms' internationalisation performance. The findings of the current study come in line with the findings of Blostermo et al. (2004) who explained that experiential knowledge from previous international networks has a positive result on the performance of internationalisation. This study also supports the findings of Lindstrand et al. (2011) who presented the importance of knowledge that derives from a firm's customers' networks. In many of the examined cases existing customers introduced or gave a reference to the focal firms in order to find new customers or to get access to valuable information about new market opportunities. This study's findings extend the work of Granovetter (1973) who argued that weak ties are more important than strong ties for linking networks that are not connected. This study adds to his findings that the efficacious role of social capital was important to bridge structural holes. Additionally, the findings of the present research partly contradict the findings of Granovetter (1973) because strong ties played a more important role especially in later international market entries. A possible explanation may be that the examined firms as mentioned earlier are niche markets players so strong ties are more crucial than weak ties.

The interviewees also added that without the existence of networks and network relationships their firms could not survive in the international arena. Network relationships were characterised as important as oxygen in the human body. It is important to make the analogy of a firm as a living human body that some operations and substances are vital for its survival. Social capital offers firm the importance substances like knowledge and access to key people in order to enter foreign markets. Network relationships and social capital offered valuable information, knowledge and resources to all the examined firms. All the interviewees highlighted that those provided them unique assets. The findings of this study come in line with the findings of Aldrich and Zimmer (1986) and Dubini and Aldrich (1991) who supported that networks are very valuable because they are assets for the

entrepreneurs.

The serendipity role of social capital and weak and intermediary ties were also important in the initial stages of internationalisation of the examined INVs. This study's findings contradict those of Agndal et al., (2008) who stressed the importance of the serendipity role of social capital both in initial and later international market entries. It was explained earlier that the examined firms are niche market INVs and strategically identify and target new customers, therefore the serendipitous role of social capital becomes less important in later international market entries. The serendipitous role was also associated with unexpected events, this corroborates with previous studies (e.g. Chetty and Agndal, 2007; Kontinen and Ojala, 2011a). In the examined cases the unexpected international events were triggered by the internet and attendance to tradeshows.

The liability role of social capital was the less frequent in the examined cases. An explanation may be that the firms relied on their existing network relationships to find new customers and partners. This increased the possibilities to find highly committed partners and customers where trust also played an important role. The liability role of social capital was associated with a mode change. It can be highlighted at this point that the liability role of social capital occurred twice in the cases (A and I) where the serendipitous role of social capital initiated the partnerships and once in the case (G) where the efficacious role initiated the partnership.

This study's findings aligned with the findings of Chen and Chen (1998) and Chen (2003) who highlighted that structural holes and network gaps in the existing networks are highly likely to provide new opportunities and can create problems to the internationalising firms. For example in the examined cases where they were less connected to other firms faced problems caused by structural holes. On the other hand, firms well connected did easily bridge structural holes and those offered them new opportunities such as potential customers.

Finally, in some of the examined case firms it was captured the post entry foreign market entries, which allow the researcher to better comprehend the link between social capital and the structural dimension and network closure. Those post entries are discussed in the following section.

6.4 Evolution of social capital over time

The third research question concerned the evolution of social capital over time. The nature of social capital is dynamic and this is highlighted in the previous chapter and previous sections of this chapter. Social capital rapidly changes over time and follows the internationalisation speed of INVs. Firms that rapidly internationalise can overcome issues like the liability of newness and liability of foreignness in faster pace over firms that incrementally internationalise. Social capital offers resources that are necessary for firms that need to adapt into the different environments they operate in. These resources include information on international opportunities, feedback on existing and future products. The more a firm is embedded in a network or networks the faster it can internationalise and adapt into new markets. Moreover, social capital changes depending on the number of countries a firm operates in. Firms that are more committed to international markets enhance and develop their social capital. The findings of this study corroborate the findings of Johanson and Vahlne (2006) who supported that internationalisation process of a firm can be perceived as a dynamic process where social capital can be accessed and developed. This can happen because firms can begin, build and strengthen ties during internationalisation. Additionally, this study can draw the conclusion that ties can also evolve diachronically from formal to informal. It can be added that intermediary ties can also change over time and become formal ties. An illustrative example is the internet where from an intermediary tie becomes formal because through the internet transactions take place. This study's findings align with those of Larson and Starr (1993) who found that ties can change over time and become from formal to informal and the other way around.

All the case firms internationalised their operations either immediately after their inception or two to three years after their establishment. For those reasons the evolution of social capital was very rapid in the examined INVs. Moreover the firms used their existing network relationships and social capital to enter new foreign markets. References and introductions enhanced the profile and trustworthiness of the case INVs.

The structure of this research analysis follows the approaches of Coviello and Munro (1997) and Elg et al. (2008) who explained and captured the importance of networks and network relationships into different stages in order to better understand their role in different phases of internationalisation. Based on their work the researcher divides his analysis to early and later foreign market entries and post entry operations.

In some of this study's cases post entry operations were captured and how those were influenced by social capital and network relationships. Additionally, based on this study's design it is able to capture the evolution of social capital diachronically because it was examined not only the initial or initial foreign market entries but also later international foreign market entries. The analysis will start with the examination of early and later foreign market entries and then the post entry operations will be studied.

6.4.1 Evolution of social capital in early and later foreign market entries

The evolution of social capital is easily captured in all the case INVs. The analysis will be based on Table 64 because the changes are easily observed in this table. The efficacious role of social capital initiated early foreign market entries (cases A, B, C, D, E, F, G, H and I), in some cases the serendipitous role of social capital was also important (cases A, F and I). The liability role of social capital will not be analysed in this section because it will be examined in the post entry operations section.

In later foreign market entries the efficacious role of social capital enabled and facilitated the internationalisation of the examined INVs (cases A, B, C, D, E, F, G, H and I). It is underlined again that this study's findings contradict those of Agndal et al., (2008) and Kontinen and Ojala (2011a) who found that the serendipity role of social capital controls later market entries. One explanation may be that the case firms are niche market players in the high technology sector and target specific customers and companies. Hence, the efficacious role is more dominant in later foreign market entries. The serendipity role of social capital was important for psychic distant markets so this study comes to the same conclusion that was presented earlier. To be more precise the serendipity role was mainly used for Asian

market entries. The dynamic role of social capital that was observed in this study supports the findings of Larson and Star (1993) who highlighted the dynamic nature of social capital and the changes that take place over time. Moreover, based on this study's findings it can be concluded that social capital can be expanded and reduced over time especially when a network relationship is developing or declining.

The findings of this study align with the claim of Johanson and Mattsson (1988) that the evolution and the development of the network are constant. From the cross-case analysis it can be concluded that social capital and network relationships evolve over time. This is also in line with what Axelsson and Johanson (1992) found, that firms, which operate abroad form and shape their social capital.

6.4.2 Evolution of social capital in post entry operations

Post entry operations were captured in cases A, B, C, F, G and I. This study follows the suggestions made by Pedersen et al., (2002) and Kontinen and Ojala (2011a) who underlined the need to extend our knowledge and focus on the dynamic aspect and nature of foreign operation modes changes after the initial market entry in a country. The post entry mode changes will be analysed and explained based on the different roles of social capital.

6.4.2.1 Efficacy role and post entry operations

The analysis continues with post entry operations triggered by the efficacious role of social capital. The efficacy role was important for cases A, B, C and I. Case A used the efficacy role to move its Headquarters in California, the firm took advantage of its existing network relationships to attract funds from VCs in California. The decision to move its Headquarters to the USA from Greece was made based on a strategic decision. The main factors that pushed firm A to take that decision were the friendlier business environment and the network of the CEO. The mode change was also based on strong and formal ties.

Case B decided to use higher control modes in the US and India. Firm B's mode changes were based on strong and formal ties both in the US and Indian

markets. The company initially had customers in those markets but after a strategic decision to penetrate those countries decided to set up offices. Local employees were recruited in the offices in the US and India. The employees were recommended from firm B's network in the US. The employee in India was recommended from a current employee in Greece.

Case C entered the US market in 2011 by setting up offices and moving its Headquarters in Silicon Valley and hiring one employee there. Firm C later the same year decided to hire a second employee in Texas and attract funds from venture capitals and angel investors. The second employee was referenced to firm C by its existing network relationships. The network of the CEO and the founding team assisted the company to successfully approach and attract funds and new customers in the US. The mode changes were based on strong and formal ties.

Case I had a small project in Canada in 2010 to improve its product. After a period of three years firm I decided to hire an employee (engineer) in Canada in order to penetrate the market. Additionally, the company plans to set up offices in Canada which will act as regional offices for the North American region. The mode change in Canada was based on strong and formal ties.

Table 68 Strength of ties and structural dimension in post entry operations triggered by the efficacy role

	Initial foreign market entry	Post entry
Cases	Mode, Role of social capital, type	Mode, Role of social capital, type
Case A	USA (2000) – direct sales, efficacy, strong, formal	USA (2005) – Headquarters and Investors, efficacy, strong, formal
Case B	USA (2011) - direct sales, efficacy, strong, formal India (2012) – direct sales, efficacy, strong, formal	USA (2012) – set up offices , new customers, efficacy, strong, formal India (2013) – hired employees, efficacy, strong, formal
Case C	USA (2011) – Headquarters, efficacy, strong, formal	USA (2011) – hired employee - VCs , second employee, efficacy, strong, formal
Case I	Canada (2010) – direct sales, efficacy, strong, formal	Canada (2013) – hired employee , efficacy, strong, formal

It can be concluded that strong and formal ties were very important in mode changes. This study's findings support the findings of Kontinen and Ojala (2011a) who observed that strong and formal ties were more important in mode changes over

other ties (i.e. weak, informal and intermediary). One explanation may be that the examined INVs as mentioned earlier are niche market players. The case INVs targeted countries with big markets, the decisions of those firms were based on strategic factors and the opportunities offered in the selected countries. These findings support the findings of Burgel and Murray (2000:52) who found that “strategic considerations and the exploitation of new opportunities rather than psychic/economic distance are more likely to account for entry decisions”.

The efficacy role was also important because it assisted cases A, B, C and I to successfully change the post entry mode. Additionally, the findings of the present research on post entry changes align with those of Chetty and Agndal (2007) and Kontinen and Ojala (2011a) who supported that social capital which increases over time can stimulate mode changes from low to high commitment modes. It is obvious from Table 68 that the mode changes observed in the examined cases were related to higher control modes.

6.4.2.2 Liability role and post entry operations

The analysis continues with the liability role of social capital where this study’s findings corroborate with those of Chetty and Agndal (2007), Agndal et al., (2008) and Kontinen and Ojala (2011a) who found that the liability role triggers mode changes. The liability role was associated with weak and formal ties and occurred in cases A, G and I where the focal firms had to change their mode in Japan and the USA. Post entry operations, which were associated with the liability role of social capital are presented in Table 69 and the importance of social capital is highlighted as a facilitating and enabling factor.

Case A had to find a new partner in the Japanese market because the old one was not active. The serendipity role was important because case A was approached from a new partner via the internet who has been actively engaged with the firm’s operations in Japan. The weak and intermediary ties changed to strong and formal ties. However, the efficacious role of social capital was also important in the Japanese market because the firm used its network relationships to approach new customers. The mode change occurred in 2007 when Fujitsu group became an

investor to firm A. It is necessary to highlight at this point that the efficacious role of social capital triggered this change.

Table 69 Strength of ties and structural dimension in post entry operations triggered by the liability role

	Initial foreign market entry	Post entry
Cases	Mode, Role of social capital, type	Mode, Role of social capital, type
Case A	Japan (2004) - partner, serendipity – liability, weak, intermediary	Japan (2007) - Investor and customer, efficacy, strong, formal
Case G	USA (2004) - sales person, efficacy – liability, strong, formal	USA (2006) – sales person, new customers, efficacy, strong, formal
Case I	Japan (2002) – partner, serendipity – liability, weak, intermediary	Japan (2005) – partner, efficacy, strong, formal

Case G had to terminate its collaboration with an employee who was not engaged and had different career plans for the future. Additionally, this employee could not work remotely for a firm that had its Headquarters in a different country. When the liability role occurred then the CEO of firm G became more engaged and used its network relationships to find a new employee. In addition, the external board members of firm G introduced the firm to new customers. The efficacy role, strong and formal ties were important in both the initial and post entry foreign market entries.

Case I faced the same problems that case A faced in Japan. The old partner was not strongly engaged and firm I had to find a new partner using its network relationships. The liability role triggered that change and the efficacious role became more important in the future as well as strong and formal ties.

6.4.2.3 Serendipity role and post entry operations

The findings of this study did not identify the serendipity role of social capital to be associated to mode changes. One explanation may be that the examined INVs as stated earlier are niche market players. In other words, the firms were relied on existing network relationships and could easily bridge structural holes when they decided to change the mode entries.

6.4.2.4 Summary

It can be concluded that the nature of social capital diachronically is very dynamic. This study's findings support the findings of Larson and Starr (1993) who demonstrated the dynamic aspect of social capital over time. The findings of this study corroborate with those of Burgel and Murray (2000) who found that diachronically entry mode changes of start-up high technology firms are related to higher commitment international sales. Moreover, the current study's findings support the findings of Andersen (1993) and Leonidou and Katsikeas (1996) who highlighted those entry modes are not always determined by the past experience of the firm but those modes can be influenced by the choices of the management team which are determined by firm and product examination and factors. It should be added to the previous point that those choices are also determined by social capital and network relationships. Social capital is a source of knowledge for foreign markets, new market needs and product development.

The findings of this study extend the findings of Kontinen and Ojala (2011a) with reference to the countries examined in their research. Namely, these authors examined Finish companies internationalising in France. In this research it was observed mode changes in a wider spectrum and did not restrict the focus of this study on a particular country. Emphasising in more countries allows us to better capture the evolution of social capital and its association with post entry changes. This study's findings do not support the findings of Chetty and Agndal (2007) who showed that the liability role was the most frequent in mode changes. On the other hand, the results of the present study support their findings that the mode change is allegedly associated with high control mode.

This study offers a better insight to the three roles of social capital in relation to the time dimension of internationalisation. For example the results of this study show that the efficacy role dominates both initial and later international market entries. The serendipity role in this study became less important in later market entries because the examined firms operate in a niche so they can bridge possible structural holes in foreign market entries. Another contribution of this study includes the capture of post entry operations. Previous studies have limitedly examined post entry operations so it was impossible to better comprehend the evolution of the three

roles of social capital over time and how those roles can affect post entry operations.

All in all, the mode changes in the examined cases were triggered three times by the liability role and five times by the efficacious role. Regarding the liability role it can be seen from Table 69 that occurred twice in Japan and once in the US. It can be predicted that mode changes in Asian countries will be based on the liability role due to cultural differences and high psychic distance. As regards the efficacy role it can be seen from Table 68 that occurred four times in Western countries and more specifically in the US and once in India. Additionally, strong and formal ties were the most frequent ones in the analysis. A possibly explanation is that the examined INVs used their network relationships and social capital when they decided to commit to high control entry modes. This study predicts that mode changes in Western countries that lead the high technology sector will be associated with high control mode changes and the efficacious role of social capital. Moreover, niche market firms which are well connected in their industry will use the efficacious role to post entry mode changes.

6.5 Integrated framework

The initial framework was developed based on the extant literature and the gaps identified in the social capital and international entrepreneurship theories. The initial framework attempted to encompass the three research questions. Figure 19 depicts the integrated framework of the different roles of social capital, structural dimension and network closure in the internationalisation of high technology INVs. This figure crystalizes the framework which was developed from the studied INVs and summarises how the constructs which were identified interact with one another. This figure explains the logic behind the different circles and arrows in the integrated framework.

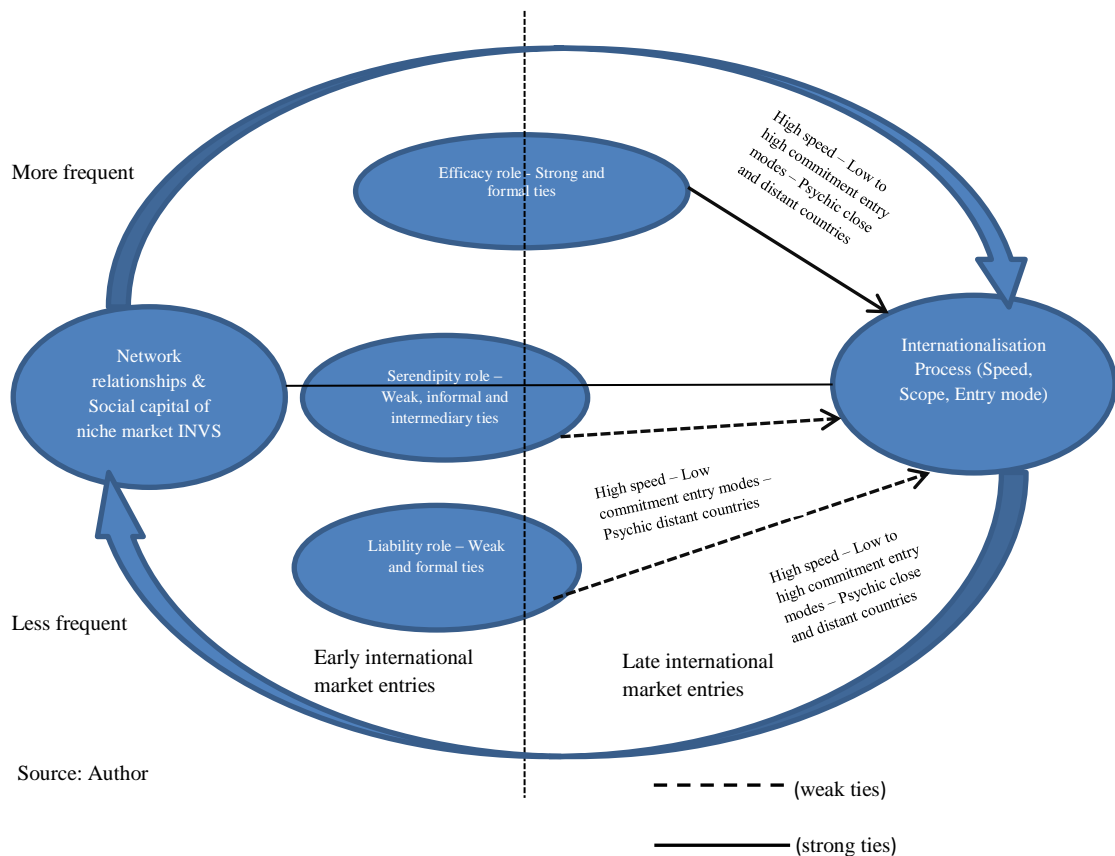
The objective of this study was to provide information on three aspects which take place during the internationalisation of high technology INVs. The first one encompasses the role of social capital and network relationships on early and late internationalisation. The second aspect consists of the interrelation of social capital, network closure and structural dimension. The third one is related to the evolution of

social capital over time in order to comprehend its dynamic nature. The previously presented aspects were developed based on the current literature, the empirical findings helped the researcher to update the initial framework. The first research question of this study concerned the importance of the different roles of social capital and network relationships in the initial and later internationalisation process of high technology INVs. The framework highlights the importance of the efficacy role both in early and late foreign market entries. Strong and formal ties are also paramount for successful foreign market entries. In this study's framework it is highlighted that niche market INVs use the efficacious role more frequently than the liability and serendipity roles especially in late foreign market entries.

The second research question concerned the interrelation of social capital and network relationships to structural dimension and network closure. The integrated framework emerges the importance of strong and formal ties when the efficacy role occurs both in early and late foreign market entries. Additionally, weak and intermediary ties were critical when the serendipity role occurred in early internationalisation. Finally, weak and formal ties were related to the liability role in early foreign market entries. The paramount role of strong and formal ties and their association with the efficacious role highlight how those influence the speed of internationalisation, the selection of countries and the choice of entry modes. As stated earlier the efficacious role played an important role since the case INVs are niche market players and the number of potential customers is limited. Namely, structural holes are bridged with the use of strong and formal ties.

The third research question concerned the dynamic nature of social capital and its evolution over time. The integrated framework depicts the dynamic nature of social capital and the dynamic characteristics of the different roles of social capital. The framework crystalizes that the higher the interaction with actors over time then social capital increases and firms become more involved in the internationalisation. In other words social capital rapidly changes and increases diachronically. Actually, it follows the speed of internationalisation of INVs.

Figure 19 Integrated Framework



It is clear from Figure 19 that the efficacious role of social capital was the most frequent role that occurred both in early and late international market entries. Additionally, it assisted firms to enter psychically close and distant countries in a rapid pace. On the other hand, the serendipity role occurred less times in the internationalisation of high technology INVs and played a more important role in psychically distant countries and more specifically Asian countries. Finally, the liability role was the least frequent role that occurred in the examined firms and was associated with both geographically close and distant markets. All three roles of social capital have a positive impact on the speed of internationalisation and trigger entry mode changes from low to high commitment choices.

The developed framework prognosticates that the efficacious role of social capital will be the most crucial role both in early and late foreign market entries. Additionally, niche market high technology INVs will depend on strong and formal

ties when they will strategically approach their potential customers. Moreover, there is not a plethora of potential customers when a firm operates in a niche. In other words, it can be predicted that structural holes will be easily bridged by the existing network relationships and the high value social capital. In addition to the previous point, psychic distance will limitedly affect niche market high technology firms' strategic decision to enter a foreign market.

This study concludes that social capital and network relationships are an essential part of rapid internationalisation. In particular the efficacy role offers INVs the imperative factors for a successful foreign market entry. The serendipity role becomes important in foreign market entries when the psychic distance is high and firms do not have access to local networks. Finally, the liability role triggers internationalisation events, which use the efficacy role. Strong and formal ties are significantly associated with the efficacious role; whereas, weak and intermediary ties are crucially linked to the serendipity role. Their development over time is dynamic and weak and intermediary ties can become strong and formal ones. Additionally, strong and formal ties can develop to weak and informal ones. The development or decay of ties depends on the needs of the firm and the different actors. The progress of a tie is also related to the speed of internationalisation, the faster an internationalisation event takes place the faster the tie will change.

6.6 Summary of Discussion Chapter

The analysis and cross-case examination helped us to better understand the mechanism of social capital and structural dimension and network closure. This study contributes both to the fields of International Business and International Entrepreneurship because it extends our knowledge on the role of social capital and network relationships in the internationalisation of high technology INVs. In particular this study contributes to the literature of INVs because it identified a new type of INVs: the niche market players. These firms strategically target and approach new customers in order to expand their operations in the international arena. The efficacious role of social capital plays a more crucial role in this type of firms both in

early and later international market entries. The findings of this study supported that the serendipitous role was more important in market entries in Asian countries and less important in Western countries. A logical explanation is that high technology INVs rely on network relationships and their social capital when they decide to enter countries that lead their sector and industry. On the other hand, unexpected events played an important role in Asian market entries due to the lack of contacts in these markets. The liability role of social capital was also important for the internationalisation of high technology INVs, in the events that the liability role occurred the firms became more engaged in those markets. The efficacious role was used in those cases in order to find either a new partner or employee.

Strong and formal ties were strongly associated with the efficacious role and played a paramount role in the identification of new partners, customers and in high control modes. Conversely, the liability role was associated to weak and formal ties because the ties and relationships were decaying. The serendipity role was linked to weak and intermediary ties in particular to the internet and tradeshows.

This study offers better explanations on three aspects. The first aspect includes the temporal dimension of internationalisation. In other words the time dimension was examined in early and late foreign market entries in order to understand the evolution of the three roles of social capital over time. It was found that initial market entries are related to the efficacious and serendipitous role of social capital; whereas the late foreign market entries are mainly associated with the efficacious role. The explanation that lies behind those results is that the examined firms operate in a niche market and the nature of those niche market INVs allows them to easily bridge possible structural holes in late foreign market entries. In other words the number of potential customers are limited, therefore the niche market INVs are well connected and can get introduced and get a reference from their existing network relationships and partners.

The second aspect encompasses the post entry operations that were captured in this study. As stated earlier very few studies have examined the post entry operations in relation to the three roles of social capital (e.g. Kontinen and Ojala, 2011a). It was found that post entry operations were dominated by the efficacious role of social capital and were triggered by the liability role because the observed

partnerships were decaying due to the low commitment of the focal firms partners. Additionally, post entry operations were mainly associated with higher commitment entry modes. For example some firms set up offices in foreign markets because they became more committed to those markets. The capture of post entry operations is a major contribution to the fields of International Business and International Entrepreneurship.

The third aspect includes the identification and observation of the essential nature of the examined INVs, the niche market INVs. Previous studies have mentioned that INVs operate in niche markets but have limitedly explained how their nature can influence the three roles of social capital. For example the mechanism of network closure and structure has not been examined in association with the three roles of social capital and their interrelation to niche market players' internationalisation. This study offers better insights and it was clearly found that niche market INVs use the efficacious role of social capital both in their initial and late foreign market entries and in their post entry foreign market entries due to their nature. In other words this type of firms can easily bridge structural holes based on their existing network relationships.

It was also verified that the internet is one of the most important facilitating and enabling factors for high technology INVs to internationalise. Through the internet the firms could access valuable knowledge on foreign markets and new market trends. It was argued that online associations were very important because they offered opportunities to new and old established firms for finding new customers. Additionally, firms were actively engaged to associations because those can shape and push the market where the firms want to.

All the examined INVs develop software and heavily rely on the digital economy; it was expected that virtual networks would have played a more important role. However, physical networks were more significant for the case firms. For example, LinkedIn and other forms of virtual networking and networks were critical for following and tracking the career of network members. All the interviewees highlighted the importance of LinkedIn as a tool to find potential new employees and contact people in target companies. Nonetheless, physical networks were more dominant in the case firms. One explanation may be that physical networks can be

better trusted from firms and their management teams. This study predicts that the face-to-face interaction with a person that can be trusted will be always preferred from all type of firms, traditional or high technology. On other hand, virtual networks' main advantage is that those can be accessible from around the world and being a member of virtual communities does not incur high costs. In the examined firms only case F heavily relied on virtual networks to get information on foreign markets and find new customers. It is supported that digital networks are mainly associated with weak and intermediary ties. However, the internet can evolve to a formal tie because through it monetary transactions take place between actors.

An emerging difference that it was not expected was the previous international work experience of Scottish and Greek entrepreneurs. The Greek entrepreneurs did not have previous international work experience, except the CEO of case C. On the other hand, their Scottish counterparts had previous international work experience, except the CEO of case I. This study demonstrates that previous international work experience is not necessary for a rapidly internationalising firm. One explanation is that the examined INVs operate in a niche and their industry is highly international so in order to survive they have to rapidly internationalise their operations. Another emerging difference is the different educational background between the Greek and Scottish entrepreneurs. The Greek entrepreneurs, except the CEO of firm C, hold PhD degrees; whereas the Scottish entrepreneurs hold a Bachelor's or a Master's degrees. It can be concluded that there is a relationship between the lack of previous international experience and educational background. The Greek entrepreneurs used the social capital that was created during their PhD studies to internationalise fast, whereas their Scottish counterparts used the social capital from their previous international work experience.

Finally, the findings of this study show that the examined firms focused on networks and network relationships that assisted them to prevail over the liability of newness and scarcity of resources. The current research's findings agree with those of Soderqvist and Chetty (2013) that stronger relationships helped INVs. Furthermore, this study supports the findings of Chandra et al. (2009:47) who argued that international opportunity identification is not related to the type or number of

ties but it is related to the right ties and their importance consists in “the right people and firms at the right time”.

Chapter 7 Conclusions

7.1 Introduction

The aim of this thesis is to answer and provide in-depth information on the importance of social capital and network relationships in the internationalisation process of high technology INVs.

This thesis develops a new research perspective into the mechanism of network closure, structural dimension and roles of social capital in the internationalisation of high technology INVs. There have been very few empirical studies in understanding how the three roles of social capital (i.e. efficacy, serendipity and liability) influence the internationalisation process of firms (e.g. Chetty and Agndal, 2007; Agndal et al., 2008) and the connection of these roles with network structure and closure (e.g. Kontinen and Ojala, 2011a). The current study develops a new framework based on the remaining unanswered questions in the extant literature and has been tested empirically. The developed model summarises how and why the different constructs such as social capital, structural dimension and network closure interact with each other and how those influence the three aspects of internationalisation (i.e. speed, scope, entry mode).

In terms of methodology this study follows the positivist approach and case study method as described by Eisenhardt (1988, 1989a,b, 1991) to build theory from the nine examined cases. Additionally, it uses an inductive approach in order to comprehend in-depth the examined internationalisation phenomena.

This chapter is divided in six sections. The first section gives an overview of all the chapters for this research. The second section summarises the theoretical contributions and presents the contributions to the fields of International Business, International Entrepreneurship and Social Capital. The third section focuses on managerial implications. The fourth section offers implications for public policy. The fifth section presents the validity and reliability of the findings while also discussing limitations of the study. Finally, the sixth section discusses aspects of future research.

7.2 Overview of the thesis chapters

Chapter One introduced the general background of the research referring to the key theories used in this study: International Business, International Entrepreneurship and Social Capital. The research questions were also introduced to highlight the new knowledge that this study attempts to offer to the fields of International Business and International Entrepreneurship. The research focus was also presented in order to highlight the aim of this study. The methodological choices of this study were presented to justify the design of this study and how the findings were interpreted in order to understand how the results of this study differ from previous studies. The core concepts used in this study were also introduced. It was important to use similar and compatible terminology with previous studies.

Chapter Two summarised the mainstream International Business theories, including the initial and revisited Uppsala model (Johanson and Vahlne, 1977, 2009) and the foundations of International Entrepreneurship. A review of the International Entrepreneurship field was conducted to identify the trends in the field. The criteria used in this review turned 136 papers, then the 136 papers were scanned again to shortlist those examining network theory, social capital and networks. This process led to 25 papers being closely reviewed. Four main themes emerged: i) knowledge deriving from networks; ii) network ties and the internationalisation of the firm; iii) networks and the international performance of the firm and the degree of internationalisation; and iv) networks and institutions. A comparison between the INVs approach and the initial and revisited Uppsala model was made in order to justify the theoretical choices of this study. Overall the outcome of the review assisted the researcher to identify what theories could contribute in answering the research questions of this thesis.

Chapter Three narrowed the focus even further. The network and social capital theories were reviewed. The literature review of the role of network relationships and social capital in the internationalisation process led to the identification of the existing gaps. As a consequence relevant research questions were defined. The design of the conceptual framework of this study was based on the seminal work of Granovetter (1973, 1985) on the strength of ties, of Burt (1992) on

structural holes, of Nahapiet and Ghoshal (1998) and Adler and Kwon (2002) on social capital and the work of Chetty and Agndal (2007) on the three roles of social capital in the internationalisation of firms.

Chapter Four analysed the research methodology. The research adopted the positivist tradition of Eisenhardt (1989a,b, 1991) to develop theory from case studies. The process approach (Welch and Paavilainen-Mantymaki, 2014) was also followed in order to capture the various internationalisation events in a temporal context. The rationale behind the choice of multiple case studies and the within case analysis and cross case analysis was also discussed. The data collection methods were also addressed in order to justify the choice of semi-structured interviews, and detailed information about the fieldwork of the selected firms was presented. Moreover, the different approaches to data analysis and deduction based on Miles and Huberman (1994) and Eisenhardt (1989a,b, 1991) suggestions were discussed. Finally, the chapter concluded with the validity, reliability, verification and limitations of the research.

Chapter Five showed the findings using the nine cases analysis methods discussed in chapter four. The within case analysis was presented in the following three themes based on the research questions: i) the role of social capital and network relationships in the internationalisation process of high technology INVs; ii) the interrelation of the different roles of social capital with the network closure and structural dimension; iii) the evolution of social capital diachronically.

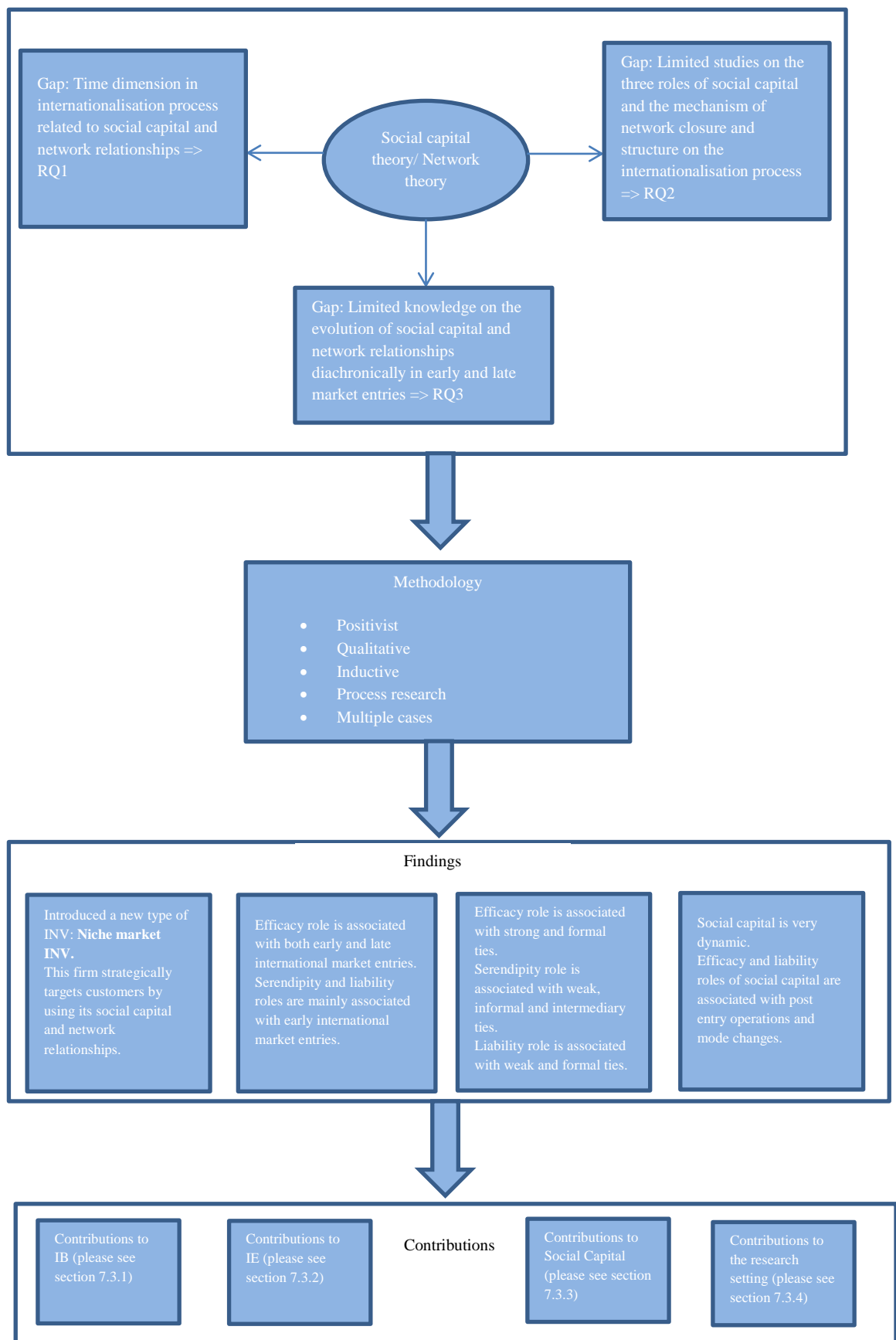
Chapter Six presented the cross-case analysis and discussed the findings of this study in line with the existing literature. A new type of INV emerged: the niche market INV, which focuses on a market niche and its strategy to internationalise is strongly associated with its market focus. In other words, this type of INV strategically targets and searches for new customers and partners. The conceptual framework was also tested empirically and redesigned based on the findings of this study.

Chapter Seven explains the contributions of this study to the fields of International Business, International Entrepreneurship and Social Capital, and directions for future research were also presented.

Figure 20 offers an overview of this thesis. The identified gaps in the

literature that led to the formulation of the research questions are presented along with the methodological choices used. The main findings and the contributions to the fields of IB, IE and Social Capital theory are depicted.

Figure 20 Overview of this thesis



7.3 Theoretical contributions of this research

This study sheds light on the paramount role of social capital in the internationalisation process of SMEs. Contributions of this study are applied both to the IB and IE fields. Firstly, Chapter 6 showed that the efficacious role of social capital occurred more frequently compared to the other roles used in the examined firms. Secondly, the findings on the role of serendipity contradict those of previous studies (Agndal et al., 2008; Kontinen and Ojala, 2011a) because the results derived, show that the serendipity role of social capital becomes less crucial in later foreign market entries. These differences are attributed to the type of firms examined. The examined case firms offer very specialised products and services so we called them niche market INVs. This type of INVs strategically target markets, customers and partners. Only one firm (case F) did not follow this pattern because its product has a wide application. In other words, the efficacy role of social capital dominates the internationalisation of niche market INVs both in early and later international market entries.

It can be concluded that niche market INVs bridge easily and rapidly their structural holes due to their ability to use strategically their social capital. In addition, early market entries offer to this type of firms the necessary network relationships to bridge possible structural holes in later foreign market entries. Strong ties were also associated with the ability of niche market INVs to bridge structural holes. The network closure of these firms changes in fast pace, for example weak ties become strong ties and intermediary ties become formal ties, due to their rapid internationalisation.

Previous studies have failed to offer plausible explanations in which countries social capital is shaped by serendipity. For example, Agndal et al. (2008) have not specifically explained in what countries serendipity occurred. Kontinen and Ojala's (2011a) study focused only on firms internationalised from Finland to France so the serendipity role occurred only in one foreign market. This research also showed that the serendipity role of social capital occurred more times in Asian markets. Partnerships initiated by the serendipity role were less successful. Those unsuccessful partnerships, especially in Asian markets, were terminated because the

serendipity role changed to a liability role. It can be concluded that the serendipity role of social capital becomes more important when firms have limited knowledge on foreign markets. This is in line with the work of Johanson and Vahlne (1977) and Leonidou (2004) who supported that lack of international knowledge can influence the speed of internationalisation and foreign market choice. Johanson and Vahlne (2009) highlighted that firms that do not belong to foreign networks face the liability of outsidership. In other words serendipity plays an important role especially for firms that lack foreign knowledge and do not belong to foreign networks. Agndal et al. (2008) argued that the serendipity role of social capital occurs mainly in countries with high psychic distance. However, the authors did not clearly connect the absence of foreign knowledge and networks in geographical distant countries with the importance of serendipity.

The extant literature has offered very limited answers to the mechanism of network closure and structure and their role in the internationalisation process of firms. This study also showed how their mechanism works in association with the different roles of social capital. Specifically, the efficacy role is strongly associated with strong and formal ties, the serendipity role with weak, intermediary and informal ties and finally the liability role is associated with weak and formal ties.

7.3.1 Contributions to the IB Theories

This research extends the realms of the IB field regarding the three aspects of the internationalisation process: a) entry mode, b) speed, and c) geographic scope. These aspects were examined in relation to the impact that social capital and network relationships have on the internationalisation process. Previous studies have limitedly examined the role of social capital and network relationships, while this study sheds light on this mechanism and explains how the internationalisation process is influenced. Previous studies have either focused on one dimension of the internationalisation process or they have only focused on how networks can influence the international performance and speed (e.g. Musteen et al., 2010; Manolova et al., 2010; Zhou et al., 2010; Yu et al., 2011; Lee et al., 2012), ignoring the aspects of geographic scope and entry mode. Kontinen and Ojala (2011a)

attempted to fill this gap but their mono-dimensional approach to focus on one country only offers limited explanations and ignores the geographic scope. The geographic scope is an important aspect for INVs because they operate in multiple countries simultaneously. This study offers a more holistic approach in the examination of the internationalisation process and the role of social capital and network relationships.

This study also extends the three roles of social capital in the IB field and the mechanism of network closure and structure in the three aspects of internationalisation process. This mechanism has been limitedly examined (e.g. Agnal et al., 2008; Kontinen and Ojala, 2011a). This research offers plausible explanations on the internationalisation process and the mechanism of network closure and structure. The interaction among different actors and the creation of social capital have been examined from previous studies. The importance of strong and weak ties has been also examined and plausible answers have been offered. However, these mechanisms and their association with the international process have not drawn the attention of many scholars.

The role of time and how it can influence the three aspects of internationalisation was examined in this study. The importance of time has been highlighted in previous studies but very few studies have explained its impact on the internationalisation of high technology niche market INVs. This study offers a better insight to the different temporal events by dividing the foreign market entries into initial and late ones. It was found in this study that the initial market entries are mainly associated with the efficacious and serendipitous role of social capital. On the other hand late foreign market entries are associated with the efficacious role of social capital.

The network internationalisation theory (Johanson and Mattsson, 1988) was also broadened by using a sample of high technology INVs were examined. Additionally, the different networks used in the internationalisation process were presented. The revisited Uppsala model (Johanson and Vahne, 2009) was also extended by examining the three aspects of the internationalisation process in association with the three roles of social capital and network relationships. The initial Uppsala model of internationalisation (Johanson and Vahne, 1977) does not reflect

the internationalisation patterns of this study's case firms. The examined firms entered initially countries with high psychic distance. For instance, the case firms preferred from their inception to enter geographical distant markets, such as the US and Japan; where the psychic distance between those countries and Greece and Scotland is high. The findings of this study are closer to Bell et al.'s (2003) and Ojala and Tyrvainen's (2007) findings who argued that INVs tend to enter markets that lead the industry. However, some firms faced cultural and other environmental challenges in foreign markets so the initial Uppsala model is partly validated. Some firms used high resource commitment entry modes, for example some case firms relocated their headquarters to a different country than the country of inception. Their adaptation to the environmental changes was very rapid and a number of them had to change their product focus. In other words the examined firms did not follow the establishment chain as described by the initial Uppsala model (Johanson and Wiedersheim-Paul, 1975; Johanson and Vahlne, 1977). An explanation is that this study's case firms operate in the high technology sector and more specifically in the software industry where the last stage (i.e. manufacturing) in the establishment chain is not related to INVs due to their size.

Knowledge is another aspect well studied in the field of IB. The initial Uppsala model (Johanson and Vahlne, 1977) stressed the role of knowledge in internationalisation. More recent studies found that INVs internationalise faster than traditional firms due to their superior capability to acquire knowledge (e.g. Autio et al., 2000). This study extends the role of network relationships as a source of knowledge and knowledge acquisition in the IB field by examining the mechanism of network closure and structure. This mechanism offers explanations to the knowledge that derives from network relationships in relation to the internationalisation process. The findings of this study corroborate those of Moen and Servais (2002), Sharma and Blostermo (2003) and Dib et al. (2010) who associated knowledge with speed of internationalisation.

This study extends the revisited Uppsala model (Johanson and Vahlne, 2009) in terms of the type of firms examined, namely high technology INVs. The revisited Uppsala model stressed the importance of networks in the internationalisation of firms and it argued that internationalisation moved from the 'liability of foreignness'

to the 'liability of outsidership'. The findings of this study support the revisited Uppsala model where firms inside a network can facilitate their internationalisation process. Namely the examined case firms that belong to a network could facilitate their internationalisation to multiple countries both psychically close and distant. Conversely firms that do not belong to networks especially in Asian countries such as China, Japan and South Korea confront issues and cannot enter to those countries easily. The contributions to the IB theories are generalist so the more specific contributions to the IE theories are presented in the following section.

7.3.2 Contributions to the IE Theories

This study attempts a better interpretation to various international phenomena in the field of IE by using the social capital theory. The role of the entrepreneur has been highlighted in the IE theory. The entrepreneur in the IE theory visions to expand the operations of his/her firm abroad rapidly (e.g. Oviatt and McDougall, 1994). Entrepreneurs of rapidly internationalising firms have unique capabilities to orchestrate their network relationships. Network relationships and the different roles of social capital were examined in order to produce more robust results and understand how and why small entrepreneurial ventures internationalise rapidly. Post entry foreign market entries were also captured adding a significant contribution to the IE field because previous studies have focused on initial market entries, ignoring the dynamic aspect of internationalisation. INVs are firms that operate in multiple countries so it is necessary to capture their post entry operations in order to understand how network relationships and social capital evolve over time.

According to the INVs theory new firms prefer alternative governance structures in order to preserve resources when they decide to internationalise (Oviatt and McDougall, 1994). The case firms of this study tend to establish partnerships with other actors using their existing social capital. The use of social capital here is paramount because it helps firms to enhance their trustworthiness and get valuable references from existing network relationships. The examined case firms focus on specific markets and the number of their potential customers is limited. The research defined a new type of INVs: the niche market INVs. These firms focus on specific

market segments and strategically target their customers. The researcher could not find any answers in the IE literature so he delved into the strategy literature to decipher the observed phenomena. Based on the strategy literature niche market players use well embedded networks to become more competitive (Echols and Tsai, 2005). This thesis contribution lies in the introduction of this aspect and literature in the IE context. INVs' essential nature is related to niche markets based on previous studies (e.g. Oviatt and McDougall, 1994), however, the mechanism of those firms and their connection with the three roles of social capital have been very limitedly examined. This study extends our knowledge on the behaviour of niche market INVs especially by examining the impact of time on internationalisation. Those niche market players are better embedded in networks and can easily use their existing network relationships in their advantage especially in late foreign market entries.

The important role of time in internationalisation is highlighted and this study responds to calls for research in identifying and examining the different temporal internationalisation events and how those are formed (Jones and Coviello, 2005). Additionally, by examining initial and later international market entries the evolution of INVs was captured, as stressed out by Zahra (2005) as a necessary future research. The examination of initial and later foreign market entries offers a deeper understanding on how time can affect internationalisation. As stated earlier initial market entries were associated with low commitment entry modes and late market entries with higher commitment entry modes.

Previous studies (e.g. Kontinen and Ojala, 2011a) have stressed the necessity to examine post entry operations in order to better comprehend the role of time and how internationalisation takes place after the initial entry in a foreign country. This study contributes to the field of IE by capturing post entry operations of high technology niche market INVs. Post entry operations were associated with high commitment entry modes and the efficacy role of social capital. Some of the internationalisation events were triggered by the liability role of social capital because the network relationship between the focal firm and the partner was decaying.

This study responds also to the call of Coviello and McAuley (1999) to use well established and predominant theories in the IE field in order to better

comprehend small firms' internationalisation. The social capital theory was used, which is an established theory in sociology and helped to understand how small firms internationalise rapidly.

The INVs theory has focused on three aspects: the entrepreneur, why and how firms go abroad (McDougall et al., 1994). Based on the literature, the founders of INVs possess unique knowledge and have previous international experience (Oviatt and McDougall, 1994). In the present research, the founders played a critical role in the internationalisation process of their firms because they had the ability to reconfigure, combine and adapt their resources to the different markets their firms operate in. However, only the founders in four out of nine case firms had previous international work experience. In other words, the findings of this study extend those of Oviatt and McDougall (1994) since previous international work experience was not necessary for all the examined rapidly internationalising firms. High technology INVs operate in a global market so the founders of those firms must enter foreign markets in order to survive. This study also extends the typology of four INVs (i.e. export/import start-ups, multinational trader, geographically focused start-ups, global start-ups) of Oviatt and McDougall (1994) by introducing, as mentioned earlier, another type of INV: the niche market INV. This type of firm strategically uses its network relationships and social capital. The niche market INV is presented in the following section.

7.3.3 Contributions to the Social Capital Theory

Social capital theory has been applied to a wide spectrum of studies and its explanatory power has proved applicable in providing convincing answers. In this study the social capital theory (e.g. Nahapiet and Ghoshal, 1998; Adler and Kwon, 2002) was used in relation to the notions of structural holes (Burt, 1992, 1997) and network closure (e.g. Granovetter, 1973, 1985; Coleman, 1988). Previous studies have mainly focused on its role in domestic operations; few studies have examined the effect of the social capital in the internationalisation process and more specifically the three aspects of speed, entry mode and geographic scope, which are

introduced in the present thesis, and are used in the context of internationalisation process of high technology INVs. The majority of the examined cases were able to bridge structural holes by using their existing network relationships.

Additionally, niche market INVs are well connected, because they operate in markets where the number of potential customers and partners is limited. In other words, network relationships are valuable sources of social capital which allow firms to internationalise faster and minimise the internationalisation risks. Furthermore, this study contributes to the structural holes and network closure literature by introducing the new type of INVs, which bridge structural holes by orchestrating strategically their international social capital in multiple foreign markets. The definitions on social capital, internationalisation, network closure and structure adopted, culminate the background for analysis of the ways social capital and the mechanism of network closure and structure are utilised by high technology INVs. This thesis is one of very few studies discussing the different roles of social capital in internationalisation and their interrelation with network closure and structure. The different roles of social capital were examined in different temporal events in order to emphasise which role was more important in initial and later foreign market entries. One of the main benefits of social capital is that it gives access to valuable resources available in networks. Adler and Kwon (2002) described social capital as a form of capital. In this study it was proved that social capital is a form of capital because it gave access to financial resources such as venture capitals and business Angels. It also offered access to important information on international opportunities, feedback on products and new market needs.

This study validates and extends the work of Chetty and Agndal (2007), Agndal et al. (2008) and Kontinen and Ojala (2011a) by explaining the three roles of social capital in the internationalisation of high technology INVs and how those roles are associated with network closure and structure. The findings of the research produced specific answers regarding the efficacy, serendipity and liability roles of social capital. The efficacy role was found to be crucial for both early and later international market entries. The serendipity role played an important role mainly in initial foreign market entries and psychically distant countries. The liability role of social capital was captured only three times mainly in Asian markets. The results of

this study offer a better explanation of the three roles in the context of high technology INVs that operate in a niche. Previous studies (e.g. Agndal et al., 2008; Kontinen and Ojala, 2011a) have failed to offer evidence regarding the frequency occurrence of each role in specific geographic location. For instance Kontinen and Ojala (2011a) examined foreign market entries only in France, so their results are difficult to be replicated in other contexts. The aspect of speed was also ignored in the work of Chetty and Agndal (2007), Agndal et al. (2008) and Kontinen and Ojala (2011a). In this study the speed factor has been included because speed is critical for INVs. The findings also show that social capital acts as a catalyst for high technology INVs because it increases the speed of internationalisation, growth of international operations and success to foreign markets. INVs also prefer to enter markets where social capital can minimise the risks, and markets easily accessible by customers.

In addition to the above, the social capital theory is extended because this study introduces IB and IE in this field. IE extends social capital because INVs have been examined. Aspects regarding small entrepreneurial ventures were introduced to the social capital theory, such as the role of the entrepreneur's network relationships. This study responds to the call for research on social capital and its multiple resources within a firm (Stam et al., 2014). It also examined the social capital deriving from the founders of the firm, its employees and the firm level. IB extends social capital theory because the internationalisation process was tested through the lens of the different roles of social capital and network closure and structure. The results of this study show, for example, that the 'liability of outsidership' (Johanson and Vahlne, 2009) may also be decreased by social capital.

7.3.4 Contributions to the research setting

The selected research setting extends our understanding in two aspects: i) high technology INVs; ii) countries. This study contributed by offering a unique setting, Scotland and Greece, where very few studies have studied the role of social capital and network relationships especially in the context of high technology INVs. Scotland and Greece are two small countries in the two extremes of Europe. The cultural context between those two countries is different and offers opportunities to

draw more interesting conclusions. The research setting of this study comes in alignment with the suggestions of Chetty and Agndal (2007) who proposed the examination of firms in countries with different cultural background. Furthermore, Greece and Scotland belong to the same Union of countries (i.e. European Union), however, the level of development amongst the member countries is unequal which may impact the internationalisation process of the firms.

7.4 Managerial Implications

In this section it is addressed how the generated ideas can be applicable to managers. It was justified that social capital facilitates INVs to internationalise their operations in foreign markets. It is paramount for managers to understand how to maximise the benefits that derive from the three different roles of social capital. In particular the efficacious role of social capital should be sought by managers because it enhances the trustworthiness of a firm and minimises the internationalisation risks especially those related to cultural and regulative differences amongst countries. Additionally, the serendipity role of social capital facilitates the internationalisation of INVs when firms do not belong in networks. On the one hand, the serendipity role may be intriguing for managers because they can enter new markets. On the other hand, partnerships formed by the serendipity role might fail in the long run. In other words, managers should be very cautious and conserved to form partnerships with actors that cannot be checked for their trustworthiness by their existing network relationships. The liability role of social capital should be perceived as an opportunity and triggering force for managers and not as a business failure. Managers should get more involved in the markets where the liability role occurs in order to identify other actors that could assist them to find new customers. The liability role acts as a feedback source for firms to improve their strategy in the future.

Strong and weak ties can offer managers access to knowledge and new market opportunities. However, managers should not fall in the trap to trust only strong ties and ignore weak ties because new business opportunities may be missed.

Furthermore, the high technology industry is very dynamic and changes take place frequently so managers should be very adaptive and exploit the mechanism of strong, weak, formal, informal and intermediary ties. In other words, managers should not rely on only one source of information but they should orchestrate their network relationships and social capital to the best of their advantage.

Attendance of tradeshows can be proved very beneficial for INVs especially in their initial phases of internationalisation. These events may unlock a big number of business opportunities in foreign markets where the firms plan to penetrate. Managers should be patient to build strong relationships and trust with potential customers introduced in tradeshows. On the contrary these introductions may fail and the liability role of social capital might occur.

In terms of specific countries recommendations, managers should use their social capital in order to minimise cultural differences. In particular managers should consult and get references from their existing network relationships in order to enter foreign markets. The Asian countries are the most distant markets for western firms, managers should actively seek network relationships and use their social capital to overcome possible obstacles. Additionally, partnerships in Asian countries are based on trust and mutual respect so managers should use their social capital to enhance their trustworthiness.

INVs that focus on a market niche select specific partners and the number of potential customers is limited. A market can become mature and needs may change rapidly especially in the volatile environment that high technology firms operate. Firms should be adaptive and alter their product focus when the market becomes mature. Managers should get information from their social capital in order to capture market changes and reconfigure their strategies.

Firms should enter countries initially where they have international social capital. Therefore, social capital may play a role in market and entry mode selections. Social capital in new markets can be very beneficial as a source of foreign market knowledge to find new customers, establish new partnerships and to minimise the opportunist behaviour of other actors.

Another source of social capital is associations where firms can access information on new regulations and standards in the market. High technology firms

follow standards when they develop their products. Therefore, managers should actively participate in these associations for two reasons. Firstly, managers can push markets and standards closer to their products. Secondly, managers have access to a big pool of potential customers that in the future may give them a reference to enter foreign markets. Furthermore, associations can be international so managers can create international social capital.

7.5 Policy Implications

The internationalisation of young and rapidly internationalising firms should be supported by policy makers. There are various organisations that promote and encourage firms to expand their operations in the international arena. However, those programmes are not tailored to the needs of high technology firms that enter both geographically close and distant countries. In particular, the governmental support in Greece is very limited in high technology companies; whereas in Scotland organisations such as Scottish Enterprise and Scottish Development International offer tailored programmes for high technology firms. Additionally, expats in foreign markets should be approached by policy makers in order to assist firms to get access to new customers and gatekeepers to big multinationals.

Policy makers need to organise networking events both domestically and in foreign countries, for example to embassies, in order to help managers and entrepreneurs to build their social capital. In addition, embassies should create specialised services for firms that decide to invest in foreign markets. A very good strategy would be embassies to organise events that managers and venture capitalists and business Angels could attend. This would assist young firms to create international social capital and to get access to funds from international sources. Furthermore, embassies and other organisations should recruit specialised consultants with the necessary skills, experience and knowledge to promote and support young internationalising firms.

Finally, policy makers should create flexible financial tools for export orientated firms. In particular young firms face the problem of scarcity of resources

and cannot access international markets. By offering subsidies or loans at very low interest rates would help young firms to embark their international strategic plans. Policy makers should also offer incentives to Universities to establish links with small entrepreneurial firms. Those links may assist firms to develop new products and use the extent network of Universities in foreign markets through research projects. Governmental organisations need to encourage firms to maintain the international links because those are sources of rich social capital.

7.6 Validity and Reliability of the findings

The threat of validity and reliability in qualitative research was stressed by Miles and Huberman (1994). Construct validity is described as “a procedure which refers to the quality of conceptualisation or operationalization of the relevant concept” (Gibbert, 2008:1466). Construct validity was ensured in this study by using multiple sources of evidence and having interviewees review drafts of the case study reports. Reliability describes the minimisation or elimination of random error, in other words the researchers should come to the same conclusions if they conduct the study following the same steps (Denzin and Lincoln, 1994). In this study, reliability was sought by using a very clear case study protocol and following Welch and Paavilainen-Mantymaki’s (2014) propositions for doing a process research.

Data were collected during interviews, websites, brochures and annual reports in order to ensure data triangulation. To be more precise, the main instrument for data collection was semi-structured interviews with business elite (i.e. founders and CEOs) from the case firms.

7.6.1 Limitations of this study

Like any other research, there are limitations that need to be acknowledged. The main limitation relates to the qualitative approach. A major issue in doing solely qualitative research is that there is little basis for statistical generalisation that case studies provide. Also, replicability of the data results cannot be achieved as easily

qualitatively. Thus, the research tried to overcome this issue by adapting multiple case studies in the attempt to obtain analytical generalisation following the guidelines of Eisenhardt (1989,a,b) and Miles and Huberman (1994).

The research was limited to firms that were associated within the software sector. The general aspects of the findings was not the main goal of this research; however, there is value in knowing if the findings of this research would be similar to the full breadth of firms in the high technology sector. The qualitative research relied on data collected from interviews and documental data from a limited population. As a consequence, the findings may not be representative of the software firms as a whole, although the firms interviewed were diverse in terms of product and service focus. In addition, not all segments of the sector were adequately represented in both countries.

Data collection mainly involved 25 semi-structured interviews with founders and CEOs of high technology INVs. In order to provide greater richness to the research, more data could have been collected, but financial limitations, limited resources and time constraints were major restrictions. Consequently, maximum caution was exercised in order to limit travel in both countries as well as contact a practical, feasible number of respondents. A longitudinal research can be carried out in the future in order to better capture the evolution of social capital and network relationships and the mechanism of network closure and structure in relation to the internationalisation process.

7.7 Suggestions for future research

The purpose of the current study aims to expand our knowledge in the different roles of social capital and their association with network closure and structure in the internationalisation process of high technology INVs. The conceptual framework developed, offers opportunities for further research in the fields of IE and IB and can be also tested in other empirical studies in order to be verified. Furthermore, hypotheses can be developed based on the framework and can be tested in quantitative studies using different contexts.

Suggestions for the IE field

The origin of the examined firms is Greece and Scotland. Future research could examine the same factors but in different cultural contexts. For example, the findings of the present study can be tested during a comparison between developed and emerging economies, as suggested by a number of scholars in the IE field (e.g. Ghauri et al., 2003; Rialp et al., 2005; Kuivalainen, 2007; Keupp and Gassmann, 2009; Jones et al., 2011; Zahra and Wright, 2011). Future research could also test if companies, based in Asian markets, rely on social capital and network relationships when they enter Western countries and investigate whether they face the same challenges and issues.

The effectuation theory (Sarasvathy, 2001) offers answers to the way entrepreneurs control their resources. It would be important to introduce the effectuation theory in the context of International Entrepreneurship field and understand how entrepreneurs of high technology INVs control their resources especially in the rapidly changing environments they operate in. Furthermore, another area of interest would be to combine the effectuation theory with the three roles of social capital to comprehend the internationalisation process in relation to entrepreneurs' control of their resources.

The findings of the current research should be tested in the four types of INVs as described in Oviatt and McDougall's (1994) study. It would be interesting to know if the four firm types use the same roles of social capital and if network closure and structure affect these firms in similar way they did in this study's examined cases. Finally, temporal or longitudinal studies are necessary as suggested by previous scholars (e.g. Jones and Coviello, 2005; Zahra, 2005; Jones et al., 2011) in order to better capture the evolution of social capital during the various internationalisation events in the context of International Entrepreneurship. Moreover, network closure and structure could be better captured in longitudinal studies because their structure and mechanism would be clearly examined and

understood. The evolution of social capital would offer explanations on how structural holes are bridged in different international markets.

Suggestions for the IB field

Quantitative studies could test this study's findings adaptability and suitability on bigger samples. Additionally, a big survey could allow a statistical generalisation of the findings. Furthermore, this study showed that social capital is positively associated with the performance of the firm. Further empirical research is needed to examine each role of social capital in the international performance of the firm. Performance is critical for firms and future research should better capture it (Stam et al., 2014). Quantitative research could examine each role of social capital in different industries and regions. For example traditional manufacturing firms or incremental internationalisers could be examined to verify if the different roles of social capital affect their international performance the same way they affect high technology INVs.

Further research needs to examine the association between the findings of this research and the revisited Uppsala model (Johanson and Vahne, 2009). It would be very interesting to shed light on the different roles of social capital and how those can affect the network position and knowledge that derives from network partners.

Future research could test if domestic social capital can have the same characteristics that Chetty and Agndal (2007) and Agndal et al. (2008) found in the internationalisation of firms. In particular, future research could investigate the efficacious, serendipitous and liability roles of social capital in domestic operations and compare them to international operations. This type of research could extend the work of Adler and Kwon (2002) who conceptually clarified social capital.

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Appendix one: Questionnaire

Questionnaire: International New Ventures and the role of social capital and network relationships

Q..... General Information.....

- 1.1 Could you please describe your business?
- 1.2 What is your sector of activities?
- 1.3 When did you establish your company?
- 1.4 Did you set up the company on your own?
- 1.5 What is the number of employees in your company?
- 1.6 What is the percentage of total sales coming from foreign operations?

Q..... Entrepreneurial Characteristics.....

- 2.1 Do you have any previous international working experience?
- 2.2 Do you speak any foreign languages?
- 2.3 Where did you study?
- 2.4 Did you have a vision going abroad when you set up your company?

Q..... Foreign operations and reasons.....

- 3.1 In how many countries do you operate?
- 3.2 Why did you decide to go abroad?
 - 3.2.1 Was it a personal choice?
 - 3.2.2 Was it the nature of your product that pushed you to go abroad?
 - 3.2.3 Was it a choice made in accordance with your business partners/ customers?
- 3.3 Could you please tell me the first country that you entered?
- 3.4 Why did you decide to invest in X country first?
- 3.5 What entry mode choices have you followed to enter country X?
- 3.6 Were those choices influenced by your family or business environment (personal relationship, business partners)?

Q..... Decisions and internationalisation.....

- 4.1 Why did you decide to go abroad in an early stage?
- 4.2 What were the factors that drove you?

4.3 Did you face any cultural issues or any other issues when you went to X country?

4.4 Did your network/partner help you to overcome those problems?

Q..... Network relationships and resources

5.1 Do you believe that networks act or acted at some point as complementary to your resources scarcity?

5.2 If yes in what way?

With some indications such as knowledge scarcity of foreign markets, knowledge scarcity of products, financial scarcity, etc.

5.3 Would you perceive the existence of networks as a strategic asset of your company?

5.4 Do you use a big number of networks?

5.5 Do you feel that you have to depend on your networks when you take strategic decisions?

5.6 What kind of resources do your networks offer you, if any?

5.7 Where did you find your international partners?

5.8 Did you meet up with some potential partners that you did not start to cooperate with?

Q..... Network relationships and knowledge

6.1 What kind of knowledge do your networks offer you on foreign markets, if any?

6.2 If yes, does this knowledge influence your decision to go abroad?

Q..... Network relationships and internationalisation events

7.1 When? (time)

7.2 Where? (place)

7.3 How? (network relationships, were the same actors involved? etc.)

7.4 How do you take care of your international cooperators?

Q..... Network relationships and speed

8.1 How do networks assist you company to go abroad, if at all?

8.2 Do you believe that networks helped you to go faster abroad?

8.3 What kind of networks (business and social) have you used to invest in X country, if any?

Q..... Network relationships and market entry

9.1 Were there any important events that influenced the market entry in X country?

9.2 Were any persons/firms or organizations influenced the market entry in X country?

9.3 What were the factors that you took into consideration when you entered country X (size, production).

Q..... Network relationships and entry mode

10.1 What were the factors that had an impact on the entry mode choices in X country? Y country? Z country?

10.2 You said that for X country you used entry mode. Why did you decide to follow this entry mode? How about country Y, Z, etc?

Q..... External factors and internationalisation

11.1 Do you believe that different institutional environments may have an impact on your internationalization decisions and process? Might be helpful if examples are given regarding institutional environments

11.2 Did you confront any problems with the current economic crisis?

11.3 If yes what have you done to overcome any possible hindrances?

11.4 Has your home country supported your plans to go abroad?

11.5 Has the host country supported your plans to go abroad?

Appendix two: Direct Quotes from interviews

Case A

Table: Various dimensions and background information

Various factors	Various dimensions and background information
2000/ US entry	<p>“The first reason (that we entered first in the US) is the size of the US market, imagine the US as a large lake where you can catch many fish. The second reason was the cultural barrier that was much lower in the US, namely what we did as researchers (during our studies) was related to the US, all the people we knew were Americans so it was clearly easier. If I knew what I know today I may have started from somewhere else. But at that time any network relationships I had were in Silicon Valley I didn’t have anywhere else network relationships. In 2000 there was a very small penetration of mobile phones. LinkedIn wasn’t available, we had very limited information coming from our network relationships, although enough to do our job... The US is so big, the US market is enough to keep you in business in the rest of your life without having to go anywhere else...” (Interviewee 1) – Quote 1</p> <p>“In the US they’re pioneers in new technologies; companies that are on the cutting edge of technology and that develop new technologies operate there... Another reason was that the number of companies in the US is very big. Hence, there were more chances to be approached by a potential customer/company in the US”. (Interviewee 2) – Quote 2</p>
2004/ Japanese entry	<p>“We attended Japanese language courses. We drank countless liters of sake to be able to understand each other, but even today it’s very difficult to understand what really lies behind a Japanese phrase. The cultural barrier in Japan was very high, we had two teachers to interpret us the cultural differences and be able to understand what our partners were saying.” (Interviewee 1) – Quote 3</p>
2005/ US entry	<p>“In the last years the situation has been difficult. Everything changed when we established the US mother company. The mother company used to be based in Greece; hence all contracts had to be signed by Greek law that made things even more complicated. Not only it was signing agreements and contracts, but also issues such as liquidity, access to VCs. Nobody wanted to come to put money in a Greek company. What made things much easier was the establishment of the US mother company. So people no longer ask us questions regarding the status of the company, people see an American company that follows California law. No one has questioned us anywhere in the world about our company. It became easier to attract funds and all transactions were easier, double taxation treaties no longer exist.” (Interviewee 2) – Quote 4</p>

Table: Roles of social capital

Year/ Country	Roles of social capital
2000/US	<p>“...they were fellow PhD students, professors who I had known them while I was a researcher, people who were interested in my work, for example I published papers and people used to approach me to ask me questions on my research. I was trying to stay in contact with them, of course we’re not talking about hundreds, they were few people. I knew someone at Lucent who knew someone else and using all the contacts I could achieve my goal...” (Interviewee 1) – (efficacy role/ Quote 5)</p> <p>“...During the business activity network relationships have more value than the money which will bring you, because network relationships can have multiplier effects on the business. For example, I met an angel investor who put money into our company through another CEO, the CEO whom I met through my CEO friend with whom we’re now best friends. The introduced CEO I met him one evening when we were drinking wine in Los Gatos in California. I met that man and had a great friendship and he eventually told me OK I would help you and introduce you to a very good friend of mine (CEO). We then pitched the second CEO and he decided to put money in our company and introduce me to the great guru, we certainly spent three to four years to achieve all these. With three network relationships I managed to get to the top...” (Interviewee 1) – (efficacy role/ Quote 6)</p>
2004/Japan	<p>“We went to Japan because we found a very good partner who knew the market and who actually found us on the internet and helped us to expand in the Japanese market. Without him we wouldn’t have done anything... Now I remember that we had a representative in Japan that did almost nothing.” (Interviewee 2) – (serendipity role/ Quote 7)</p>

2007/Japan	<p>“At first we just went to Japan to an exhibition and we started gradually meeting people, but eventually through friends of our friends we found a man with whom we collaborated and we’re still working with, he’s still our sales manager there and through him our network has expanded.” (Interviewee 1) – (efficacy role/ Quote 8)</p> <p>“The same happened in Japan (like in the US), I came in contact with 3 friends and I managed to start talking with the number two in the Fujitsu group, who could have been a prime minister of a country. Network relationships play a far more important role than the money these people bring. One of their phone calls can unlock a multi-million thread. When people see you talking with them it’s enough to convince them that you are trustworthy.” (Interviewee 1) – (efficacy role/ Quote 9)</p>
2005/Israel	<p>“We’ve always been using references to enter a market, for example a company that runs a subsidiary in Israel gave us a reference to start working with a new company/customer. For example Intel has a big subsidiary in Israel and some employees may move to a start-up. If we approach that start-up, Intel’s previous employees remember us, so they may say: we were satisfied with their work so we can work with them again.” (Interviewee 1) – (efficacy role/ Quote 10)</p>
2011/China	<p>“In China we started working with giants like Huawei and Spectrum a state-controlled firm. It’s both good and bad working with state-controlled firms. The cultural barrier is very high when doing business with state-controlled companies because the government controls them tightly. However, the way the Chinese state does business is totally different from the Greek reality. In China the state is like an active businessman... We aren’t influenced by the fact that large Chinese companies have a different organisational structure...” (Interviewee 1) – (efficacy role/ Quote 11)</p> <p>“We started our collaboration with Huawei because this company bought a big number of companies that operate in wireless chip design. Huawei recruited many R&D employees from Ericsson and Motorola. So the first reference came from one of Ericsson’s former teams. Thus, we were introduced to Huawei’s teams in Shenzhen and Shanghai.” (Interviewee 1) – (efficacy role/ Quote 12)</p> <p>“I think we haven’t had a great success in the Chinese market partly due to our current partner who hasn’t helped us very much. Another reason might be the huge differences in culture and language.” (Interviewee 2) – (liability role/ Quote 13)</p>
2011/Russia	<p>“...one of our contacts introduced us to a software company that operates in our sector in Russia. Our contact had a client that was experiencing a problem and they proposed to their client to come and speak to us in order to analyse and solve their problem. This client was based in Russia, that period we weren’t operating there and we didn’t have a sales rep, in general we weren’t familiar with the Russian market. So our contact recommended us to their client, actually it wasn’t a direct recommendation; our contact just mentioned the name of our company. Hence, this client discussed with us their problem and asked us if we could help them out. The whole process made things work faster and we got a customer in Russia. If we had tried with our own efforts we would probably not have succeeded. It would have been impossible to find that customer in Russia without the help of our contact.” (Interviewee 2) – (efficacy role/ Quote 14)</p>
2011/South Korea	<p>“One of our network relationships (a lady) who is originally from South Korea and is based in the US had gone to South Korea to meet her family. In that trip she came in contact with a company that later became our representative in South Korea. This rep has been very successful. If this lady hadn’t visited her family in South Korea we wouldn’t have met that representative. Of course this lady had in mind that we were looking for a rep in South Korea...” (Interviewee 2) – (efficacy and serendipity roles/ Quote 15)</p>

Case B

Table: Various dimensions and background information

Various factors/dimensions	Various dimensions and background information
Reasons for going abroad	<p>“Going abroad was basically a one way road. The founding team of the company and all the engineers did a doctorate in the Technical University of Athens during a period where European funded projects were very common. For 3-4 years we had big exposure abroad to MNEs. We collaborated with big names of the European market like Lucent, Siemens, France Telecom and Telefonica. Thus we gained experience in international activities in order to become extrovert, so it was a one way road to go abroad. When we founded the company our main focus was not on the domestic market but on the global market. The first business focus of the company was related to gateways and broadband gates so we couldn’t focus on the Greek market.” (Interviewee 1)</p> <p>“...it was the nature of the product, the previous collaboration experience and the previous exposure, the Greek market was too restrictive for our plans. The business focus and the target market were mostly outside Greece.” (Interviewee 2) – (Quote 1)</p>

<p>Cultural differences</p> <p>2000/ Spanish entry</p>	<p>“We basically used the European programmes as a means for business development and networking. So it happened to have a common European project with Telefonica, which we have known since our doctoral studies, having worked with them on a common R&D project it was easy to develop that research relationship into a commercial relationship. Telefonica’s R&D team recommended us to the business development department of Telefonica. The initial project/products were focused on smart home applications. Despite being a great technical success it was commercially unsuccessful due to the real estate bubble in Spain in 1996. Therefore, all this activity stopped even though Telefonica invested heavily in this project. Through this project we developed a relationship from scratch; we successfully competed with Siemens and other big names.” (Interviewee 1) – (Quote 2)</p> <p>“We didn’t face any serious cultural issues in Europe (especially in Southern Europe) and Spain. We faced cultural problems in India and now we face some in the US. In India there are huge cultural problems, people there have a different mentality and another way of thinking. Europeans when they agree to collaborate with someone they usually mean it. When Indians agree to collaborate with you, you should ask them many times if they really mean it, it’s an endless process. For example if you’ve got a contract from an Indian this doesn’t mean that s/he’ll follow through with it. In Europe or the US we don’t have these problems.</p> <p>We’ve cultural issues in Germany. It seems inconceivable to the Germans, in the high-tech sector to buy high tech products from Greece. It’s also a matter of prestige for the Germans. Indians see us as equals to the other European countries, they might watch the news about Greece and the current crisis, but in their eyes we’re a European country with European products, so they trust us.</p> <p>For the Germans being a Greek company is the worst thing. Something similar happens with the Americans because they prefer American products... Americans speak American English, they dislike Oxford English. All these problems are related to cultural differences. It’s easier to work with Southern Europeans (Italians, Spanish and people in the Balkans). It’s also difficult to do business with the French if you aren’t a French company.” (Interviewee 1) – (Quote 3)</p> <p>“The first market we entered was Spain in collaboration with Telefonica. When we initially started in Greece there wasn’t a developed VC market and the ecosystem wasn’t so developed. Therefore, when we started the only way to get financial support was via European funds for developing innovative products. European funds and projects were used at the initial stage of our company; our products were also very innovative. So we cannot consider EU grants and the EU as a customer. Those research activities were developed into products and our first customer was Telefonica in Spain.” (Interviewee 1) – (Quote 4)</p>
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Table: Roles of social capital

Year/ Country	Roles of social capital
2000/ Spain	<p>“...they’ve (Telefonica) known us and trusted us. Actually all our activities and market entries followed the same pattern after our entry in the Spanish market. 2005 was a big step for us. Since then (2005), the next wave of exports had started... For example, we’ve a customer in Greece and we’ve been following him to various parts of the world. We normally have a contact in the markets we enter either from previous projects in Greece or other foreign markets. We were trying to follow our customers in recent years, especially when they expand their operations internationally.” (Interviewee 1) – (efficacy role – Quote 5)</p> <p>“When we founded the company in 2000, we knew people in various companies mainly abroad (mainly telecommunications companies) such as Telefonica, France Telecom, BT, Telecom Italia and then companies like Siemens, AT & T (Alcatel Lucent today) and several other smaller ones in other countries... Our first sales took place in Spain, we sold our product to Telefonica. Telefonica tested our prototypes and after a year asked us to start collaborating with them...” (Interviewee 2) – (efficacy role – Quote 6)</p>
France/ 2001	<p>“We’ve had collaborations in France since 2001 with French companies such as France Telecom and a company that made Linux software. We knew these companies from common European projects while we were doing our PhD studies. Now we work with a French company that promotes our solution for solar parks which had been implemented in one or two solar parks in France. We were introduced and got a reference from an existing customer and we started our current collaboration with the French company.” (Interviewee 2) – (efficacy role – Quote 7)</p>
Italy/ 2002	<p>“We went to Italy because we had been working with a Greek company based in Greece; an American firm was interested in our products and asked us to bid for a project in Italy. In 2010 we went to Italy with our current activities but we’ve been present in the Italian market since 2002. We had partnerships with Italian companies like Telecom Italia...” (Interviewee 2) – (efficacy role – Quote 8)</p>
US/ 2010	<p>“The local presence in the US is necessary; we cannot sell our products there without having local people, salesperson, etc. The salesperson and technical sales person in the US are important to</p>

	<p><i>approach new customers, follow up, etc. These people have many contacts and know all the leads that can help us in the future. The Greek community in the US, especially in Silicon Valley is well accepted. The members of the Greek community in Silicon Valley work in high positions. So we used the Greek community as much as we could to give us leads to target companies. Generally we used the networking of the Greek community... We followed two paths to invest in the US. The first path is related to the Corralia cluster in Athens, which has helped us as a facilitator in creating a networking channel with Greeks in the US. The other that we followed consists of our network relationships in California and more specifically in the renewable energy sector. We used those network relationships as advisors; they also introduced us to future customers. Networking has been very beneficial especially with Greeks in Silicon Valley. Greeks are well respected in Silicon Valley because they're successful managers." (Interviewee 1) – (efficacy role – Quote 9)</i></p> <p><i>"We invested in the US in 2011 using our business network, to be more precise we were introduced to other companies through a US customer in Greece and Italy... Project contractors from other countries recommended us to US companies; we also found projects and new customers in the US through our local salespeople. Finally, we were recommended by project investors that we had already collaboration with in European countries to US customers..." (Interviewee 2) – (efficacy role – Quote 10)</i></p>
India/ 2012	<p><i>"In every country local partners and local contacts are very important. Even in India, one can go to tradeshows, and find some leads. People might express their interest in your product but it's different from signing a contract, it's harder to start collaboration in India. Indians prefer working with personal contacts and relationships, you must find a friend or a friend of a friend who can introduce you and create a communication channel, and then it's possible to sign a contract. The structure of the Indian society with the different castes makes people follow these types of contacts. The first job we got in India came actually through a recommendation from a company that operates in India and we were working with them in different countries. The common partner helped us to increase our credibility and make the Indian company trust us...In India one of our employee's sister had a contact, so through her we found a consultant in India who still works for us and he's a door opener...For example, in India we've a partnership with a consultant who has a high position in a consulting company so through him we find leads in India. So we're basically becoming more credible using his face, people know him and not us in India. After our initial success in India, using the Greek company as a vehicle to enter that market, it was important to work with someone who knows the local market and you can gradually build your local portfolio of projects. Those things didn't happen from one day to another, we spent more than 1 ½ years and lots of money in India..." (Interviewee 1) – (efficacy role – Quote 11)</i></p>
Japan/ 2012	<p><i>"In Japan we went in 2012, we had a contact there through our business network. Apart from the business network there is a Greek-Japanese in Tokyo where the relationship is more direct. He's helping us a lot because he speaks Japanese fluently. He grew up in Greece and moved to Japan when he was 18 years old. He has been in Japan over 20 years...We met this person in Japan through a company that has competitive activities...There are some business activities/projects that are subsidised by the EU, the so-called EU gateway. These projects help EU countries to establish networks and partnerships in Japan and South Korea. We used this EU programme last February to assist our entrance into Japan..." (Interviewee 2) – (efficacy role – Quote 12)</i></p>

Case C

Table: Various dimensions and background information

Various factors/dimensions	Various dimensions and background information
Reasons for going abroad	<p><i>"...the first reason for going abroad was related to the lack of infrastructure and clear business processes in Greece. There weren't investors in Greece to help us with funding. Therefore, we decided to go to the US. None of the investors would have agreed to put their money in a Greek company knowing that there are many issues with the fiscal and legal framework in Greece...The most influential reason for having a vision to go abroad was my previous international working experience in the US and the two the other founders' ..." (Interviewee 1) – (Quote 1)</i></p>
Cultural differences	<p><i>"...It was last year that we decided to open a subsidiary in Athens. We started the process in July 2013 and managed to finish all the paperwork in February 2014. We had to deal with all the bureaucracy in Greece and a specific department of a ministry... The public servants weren't familiar with the process of a US based company to open a subsidiary in Greece... We had to search online all the regulations and laws in order to tell the public servants what the process was... However, we couldn't provide them with some documents because those aren't issued from the US authorities. So instead of skipping some documents the public servants were asking us many questions in order to cover their backs. They even asked us to go to the US embassy in Athens to swear before a US embassy notary because breaking an oath is a more serious offense in the US... All in all, the situation was tragicomic and we had to postpone our plans for 7 months... We had secured funds</i></p>

2011/ US entry	<p>from a VC and we wanted to hire people in Greece and start paying them, it was essential for our presence in Greece...” (Interviewee 1)</p> <p>“...San Francisco is one of the most multicultural cities in the world, for example if you visit Google’s headquarters the Americans are a minority... There are many Asians, Chinese, Koreans, Japanese, Arabs, Jews, Germans and of course many Greeks. I haven’t met many Greeks in San Francisco who work in junior positions, they’re all in senior management positions and in key positions. Investors don’t take into account if you’re Greek, Russian, Japanese or American, they’re only interested in what you can offer them, your product, its potential and how good your team is in order to successfully deliver your product/idea. They aren’t interested in nationalities, these things are very outdated...” (Interviewee 1) – (Quote 2)</p> <p>“... It was a conscious choice because the major market for our business is in the US. Greeks aren’t used to sending e-cards/ greeting cards; whereas the average American sends almost 20 e-cards/ greeting cards a year. All in all, our target market and priority were the US and Canada... Our product is virtual and it’s more of a service, people subscribe and pay to use our applications. Our customers can end their subscription whenever they want. In other words, we don’t do direct sales, we aren’t a B2B company but B2C. So we operate as a retail store... Our marketing consists of attracting more customers; we’re trying to optimise the process so s/he will become a paid customer. We aren’t concerned if a customer is from Greece or Swaziland, we do treat all our customers the same... 90% of our marketing strategy targets the US...” (Interviewee 1) – (Quote 3)</p>
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Table: Roles of social capital

Year/ Country	Roles of social capital
2011/ US	<p>“...The case of Apple is quite interesting. There is a guy a friend of mine happened to know, he’s Greek and works for Apple. During a conversation with my friend I told him that we were looking to start a collaboration with Apple, he then told me that he knew a person who was working for Apple and he would be more than happy to introduce us to him. After the introduction, we explained to him what our plans were and he was very interested in our product and ideas. As a result he searched in Apple to find the right person who could help us, when he found the right person he introduced us to him and we started our collaboration with Apple. This was something completely random...” (Interviewee 1) – (efficacy role – Quote 4)</p> <p>“...We’ve been working with a company in the US and it happened to know one of their investors. I knew the investor because we had made some initial discussions for a potential collaboration. One company in the US had been searching for a technology that was similar to ours, the investor remembered from our discussions our products. Therefore, he called us and asked us if we would be interested in working with that company that he had also invested in. He also said that there was a very good match between our company and the other company. He introduced us and after discussions and meetings we started collaboration with them...” (Interviewee 1) – (efficacy role – Quote 5)</p> <p>“...The contacts with mobile operators in the US were made through our advisors. One of our advisors had worked for AT&T for almost 10 years. He kept in touch with his former colleagues and his introduction was credible. He sent emails and called his former colleagues in AT&T to let them know that he has been working as an advisor in our company. He managed to come in contact with the person who was in charge of business development and we were then introduced to that person. Our collaboration has been successful...” (Interviewee 1) – (efficacy role – Quote 6)</p> <p>“...One of our advisors has helped us to come in contact with VCs, investors and he had also helped us to establish new collaborations. He introduced us to several companies to start discussing possible partnerships. We had come in contact with the director of marketing of Expedia who helped us immensely to set up some campaigns, based on her experience with people who she had worked with...” (Interviewee 1) – (efficacy role – Quote 7)</p>
2012/ UK	<p>“...We’ve several contacts in companies in Europe, which are more indirect we didn’t approach O2 directly. We work with a company whose job is precisely this to find added value services and propose them to mobile operators. They’ve been working with 50 mobile operators across Europe. They’re trying to find services that will attract new customers to the mobile operators, services that need more data to be downloaded. So this company shortlists from the 50 operators, for the sake of the argument 5 operators that make sense to start negotiations and discussions with them. It’s impossible to start negotiating with 50 mobile operators because it takes a lot of time. If you want to sign a contract with one of them you need to negotiate a lot, there is bureaucracy and a lot of paperwork. It’s also necessary to have the resources and integration something that we’re lacking. So in the shortlisted companies O2 was included. The firm approached O2 and told them that they had a new business proposition to make to them, but all these are in an early stage...This company found us through the internet, because it’s their job to find companies like us. We had arranged to meet them in a tradeshow that we attended; they were very interested in what we do. They visited us</p>

<p>Future entries/ Brazil – Japan or China, Singapore</p>	<p><i>in our booth in the tradeshow and we then realised that there was fertile ground for collaboration...” (Interviewee 1) – (serendipity and efficacy role – Quote 8)</i></p> <p><i>“...We’ve targeted a number of mobile operators that would attend the World Congress so we had arranged to meet them in person there. They passed by our booth and we discussed about potential collaborations. Some mobile operators from Brazil and Saudi Arabia also passed by our booth without arranging a meeting beforehand, they were very interested in our products and ideas and asked us if we would like to work with them in their countries. I’m pretty sure that we’ll sign contracts with some of them quite soon. We didn’t know any companies in Brazil but now we’re very close to start collaborating with 2 companies there...We plan to enter the Asian market this summer; however, the Asian market is currently a black box for us. The market there is massive, we’ve done very limited market research and we only know in what countries the application will be successful. On the other hand, we aren’t familiar with the consumers’ differences and behaviour, for example we don’t know what the difference between a Chinese and Japanese customer is. We want to get this information from our future partner there, so it’s very important for us to choose a partner that knows the local market, this will also influence our choice. I don’t know yet from where we’ll start, it could be China or Japan and then South Korea I suspect because I do not know whether to start first from China or Japan and then in Korea. Of course it could be a double-edged sword because the partner may lead you to a successful entry. On the other hand, if the partner isn’t good enough and knowledgeable then s/he may give you wrong advice and your market entry would be unsuccessful. The latter is a big disadvantage because you can waste a lot of time, energy and resources...” (Interviewee 1) – (serendipity and efficacy role – Quote 9)</i></p>
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Case D

Table: Various dimensions and background information

Various factors/dimensions	Various dimensions and background information
Cultural differences	<p><i>“... We don’t face problems because we’re a Greek company. The problem is that we’re a small company in a geographically distant country. The problem in the US is that we don’t have a strong local presence. This can make your clients worry about your legitimacy, your finances; they’ve concerns about how viable a small company can be. If we had a stronger local presence, it would have been easier to get more jobs and find more clients. Our products are very expensive, therefore customers demand support. The only thing our customers about is to be able to contact us and get support. They worry about all these when you’re not geographically close to them...” (Interviewee 1) – (Quote 1)</i></p>
Reasons for going abroad	<p><i>“The first market we entered was the Netherlands collaborating with a Dutch company, the choice of the Dutch market was based on existing contacts and the size of the market... The entry in the US market came 2 years after our entry in the US by establishing an office in California. The US market is the biggest in our sector, it’s very important for a company like us to have a physical presence there... The Taiwanese market was immediately followed after the US market entry... Tradeshows helped us to find new customers and partners in geographically distant countries...” (Interviewee 1) – (Quote 2)</i></p>

Table: Roles of social capital

Year/ Country	Roles of social capital
2009/ Netherlands	<p><i>“...We went to the Netherlands initially because we found our first customer there. The Dutch company we’ve been working with has a department in Greece; some of our former colleagues from our previous job knew some people in this department. Therefore, our former colleagues who trusted us from our previous collaboration recommended us to their current colleagues. The employees from the Greek department recommended us to the headquarters in the Netherlands and our collaboration has been very fruitful...” (Interviewee 1) – (efficacy role – Quote 3)</i></p>
2011/ US	<p><i>“...In the US we found our customers by ourselves through tradeshows and online portals/associations... We also used promotional help offered by the cluster we operate in Greece... Their assistance was very important and beneficial for our company, because we don’t have the resources, mainly financial, to attend all the tradeshows that are related to our industry. The cluster actually funded our expenses to participate in the tradeshow in the US...” (Interviewee 1) – (efficacy role – Quote 4)</i></p> <p><i>“...The Greek community in the US and more specifically in California helped us out with finding key</i></p>

2011/ Taiwan	<p>contacts in American companies... They also helped us out with cultural differences and in general when problems arose..." (Interviewee 1) – (efficacy role – Quote 5)</p> <p>"...We entered the Taiwanese market in 2011, we attended a tradeshow there and found our current partner... We had arranged a meeting with our current partner beforehand and we were discussing for more than 2 months Our partner passed by our booth and was interested in our work and products so he asked us to collaborate with his company... Our partner is a Taiwanese company that has many contacts in the country. It was in our plan to find a partner that has a big number of contacts there in order to penetrate the market and introduce us to new customers... We decided to enter the Taiwanese market because there is a big concentration of companies that could be potential customers..." (Interviewee 1) – (serendipity role – Quote 6)</p> <p>"... We attended a tradeshow in the US and we were able to find our current partner in India. We had arranged a meeting with them beforehand and during the tradeshow we met and discussed about a potential collaboration... Doing business in India is challenging due to taxation issues, because our product is software and taxes can change every fortnight... The choice of our current partner was based on his existing contacts and how well connected he was in the Indian market. Finding a partner with many contacts can be very handy because we don't have to spend so much time trying to find with our efforts and financial resources new customers... It would have been impossible to attend the tradeshow without getting a subsidy from the cluster..." (Interviewee 1) – (serendipity role – Quote 7)</p>
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Case E

Table: Roles of social capital

Year/ Country	Roles of social capital
2010/ Israel	<p>"...We went to Israel first because we attended a tradeshow where we found our customer. We had arranged a meeting with them some weeks before the tradeshow... The customer was very interested in our products, there was a very good match between them and us... The customer helped us to find new customers in other countries and successfully enter the Israeli market where many of potential customers operate there... This partnership has been very fruitful especially for our initial steps in the international arena..." (Interviewee 1) – (efficacy role – Quote 1)</p> <p>"...The Israeli customer assisted us to find new customers, there was a snowball effect using them. We're a small company so it's very important for us to get credits and references from established players in our sector. In other words the partnership enhanced our reputation in our industry..." (Interviewee 1) – (efficacy role – Quote 2)</p>
2011/ US	<p>"... We went to a tradeshow in Israel, during our presentation to a current customer other people were there listening to our presentation. Amongst those people was the representative of a US company in Israel. He was very interested in our products and was asking many questions... We had never met him before and we had not arranged to meet him in the tradeshow, he just passed by our booth... We were discussing with them for months and agreed to sign a contract. We helped them out with the development of a product because our technology was a perfect fit for their product... Our partnership was very successful and helped us to find new customers and strengthen our presence in our industry..." (Interviewee 2) – (efficacy and serendipity role – Quote 3)</p>
2012/ Germany	<p>"...In Germany we found one of our customers by getting a reference from our US partner. The reference was essential in order to successfully establish links with the German customer... We don't have the financial means to do everything on our own so we've to rely on our current customers and partners..." (Interviewee 1) – (efficacy role – Quote 4)</p>
2012/ Japan	<p>"...The case of Japan is interesting as we used three different ways to enter the market, which is important for us because a big number of high tech companies operate there. The first Japanese customer was found from a reference that came from our US customer... The second Japanese customer found us online through a Google search, they approached us and expressed an interest in our technology..." (Interviewee 1) – (efficacy and serendipity role – Quote 5)</p>
2012/ South Korea	<p>"...There are many high technology companies in South Korea so we were motivated to enter this market. We're members of an online association of semiconductor IP firms, potential customers can find us there. We can also find potential partners on this association... We received an email from our current partner in South Korea expressing their interest in a potential collaboration. After many meetings this company became our partner in South Korea..." (Interviewee 1) – (efficacy role – Quote 6)</p> <p>"... We were discussing with our partner in the US and expressed our interest in the Chinese market</p>

2013/ China	<i>because in our sector the country offers many opportunities. They introduced us to our Chinese customer and gave us a reference. It was very important to get a reference because the Chinese company trusts our US partner... The partnership is in its initial stages and there is still a lot of steps that we've to take...</i> (Interviewee 2) – (efficacy role – Quote 7)
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Case F

Table: Various dimensions and background information

Various factors/dimensions	Various dimensions and background information
Cultural differences	<p><i>"... We didn't face cultural problems in Singapore and Hong Kong, business culture is very like here actually. The only difference has been that they pay much quicker than here in the UK do. In India it was very different I think and it seems to be different from a lot of other countries. I think that was because they score really badly in the doing business index they're near the bottom and that's just an impression I guess just how hard is doing anything there I don't know why that is. You're making 100 dollars there and it takes 10 hours compared to 2 hours somewhere else. If you do a cost benefit analysis, would it be better spending 10 hours there or 10 hours in other countries... The Indian problems are still on-going, I don't think that will be easily overcome till the government there manages to overcome uncertainty and the tax situation. The huge amount of uncertainty comes from tax, changing the rules backdating the rules. My feeling there is actually it might be better just withdrawing from the country completely, until the situation looks clearer. We don't advertise there, but people come to us and want to buy our product but we don't really spend any effort there. As a way of trying to figure out the cultural stuff there we're employing someone for about a year who was brought up in India. And that is just to figure out what the cultural differences are and we concluded that tax issues won't get sorted out any time soon and all this could be chaotic. Just kind of knowing this information we'll be more focused. There were two reasons for employing this Indian, the first reason was for customer support here but also to figure out is there something we're doing culturally wrong, that she would be able to help with. And we figured out she had exactly the same problems dealing with folks over there that I did so I kind of figured out it isn't a cultural mismatch, the culture there makes things difficult..."</i> (Interviewee 1) – (Quote 1)</p> <p><i>"I know that communicating with countries where we don't have the same language can be a problem. For example, one Polish customer told me to speed up an order and I understood to stop the order. Stuff like that makes it difficult. So that's why we're focusing on English speaking languages. I tried once to learn Japanese and it was very very hard."</i> (Interviewee 1) – (Quote 2)</p>
Reasons for going abroad	<p><i>"...There a few areas in the UK that you could do business like games and that but it wasn't what we were doing, it was more utility software. The market for that was mostly in the US at that time. It was the best and most developed market, internet connectivity back in the '90's people weren't connected to the internet. The internet was just starting to take off most of this was happening in the US so it was a classic thing to go out to the market that grows the fastest which was the US at that time..."</i> (Interviewee 1) – (Quote 3)</p>

Table: Roles of social capital

Year/ Country	Roles of social capital
1997/ US	<p><i>"... Mostly except from company A, people came to us. Company B is a big reseller and had been a reseller of our product for probably 15 years. We do a lot of business through them and they're based in New York, they do a lot of US government business. People who don't necessarily want to pay with a credit card go through them. Company B came to us because one of the customers had asked can you get the software. That's usually the pattern with resellers, they are really driven by what their customers want. Company B deals with niche market needs and speciality software, this is how we'd got there originally..."</i> (Interviewee 1) – (efficacy role – Quote 4)</p> <p><i>"We went to company B because they process our online transactions, they handle the credit cards basically and deal with all the foreign currency stuff. We've used them since 2006/2007 but we'd used a few other similar companies that did exactly the same thing, 2 out of 3 of them went out of business with our money but these guys had been in business for about 10 years or so..."</i></p> <p><i>...We approached company B because at the time we were with another company that processed credit cards, their fees were going up (had increased them by about 600%), so we decided to go and look somewhere else, this time these guys were new in the block and went with them. It was an online community actually for software companies which no longer exists. It was basically a place where software companies could go and meet and ask business questions. They gave us a reference and recommendation for company B. Very very good at the time, I've learnt a lot from asking questions, it was based in the US so you got a sense of how business was conducted in the US. I've met a few of</i></p>

	<p><i>the people there since using the forum but that was a few years after. There are a lot of online resources where you can find out an awful lot of information that used to be quite hard because in the past it was just you and the network, but now you can often find a community doing research on Google and there is a lot of kind of active communities where you can find great information. There are often people that have started companies, sold out, made millions or billions still answering questions there...” (Interviewee 1) – (efficacy role – Quote 5)</i></p> <p><i>“NASA came to us. A lot of that happens because (people are coming to us) often when people are looking for a new product first thing they do is they type something into Google and what you want to do is to be able to be found at the top of Google and when you can do that then people are going to naturally search the top items and will eventually come talk to you and that’s quite powerful because you get them coming to you, so they are already prequalified they’re interested and if you do it right you don’t have to pay much money, it’s much cheaper paying a sales or marketing guy to go out there.” (Interviewee 1) – (serendipity role – Quote 6)</i></p>
1997/ Canada	<p><i>“I knew people in Canada and the US (Seattle). The sales office from my previous work is just across the borders of Canada, it was probably 15 miles from the Canadian border, it was also very close to Microsoft that’s the reason for being there. Yes so kind of met people there and just learnt how things are sold in those markets... My previous contacts helped me out to find a customer in Canada, our US partner has also found us many customers in Canada... My network relationships haven’t helped me so much financially but in terms of resources and knowing that there is somebody who can either help you or put you in touch with somebody that can help you it’s kind of useful. I’ve got friends in Vancouver that can help out there, there are people that can help out in those markets...” (Interviewee 1) – (efficacy role – Quote 7)</i></p>
1997/ Australia	<p><i>“... Yes there is kind of one network that we do use. One of these is the software check board it’s called accessibility and it’s for websites used by disabled people and there is a very small global community. There are maybe 30 to 40 people, if you know them then you know all the important people in that network. We spent a bit of effort to meet all these people, so you know getting on a plane to go to Australia and to go and meet people, at a conference for example to help build that network. But that’s a new network forming I’m not so sure the last 2 or 3 years it’s not one that was pre-existing. Or sorry, it was pre-existing but I wasn’t a member of it, that’s a better way of putting it... This community is important because the software checks stuff in that area, the people in that network are quite important for recommending products and using products, they act as consultants to big companies, governments and stuff like that. So you got them recommending your product, or at least using it, knowing about it then they will go talking to people they’re working with products to buy. It’s very word of mouth based quite small community and lots of them meet in conferences or online because people are scattered all over the world...” (Interviewee 1) – (efficacy role – Quote 8)</i></p> <p><i>“...So there are some partners like digital accessibility centre, they are kind of a consultancy they do test websites for disabled people so they check websites (e.g. Channel 4, Olympics website), they’re users of our tool. They came to us, they were looking initially for somebody who could help them out and we were friendly we went down to visit them and then we’ve gone (because we gave them a lot of help) to talk about our tool to their customers, they’ve a pile of our brochures to hand out in a tradeshow this week...” (Interviewee 1) – (serendipity role – Quote 9)</i></p> <p><i>“The most important tradeshows and conferences are where you meet other people running businesses or where we speak at conferences. Recently I’ve spoken at a conference in Australia, we don’t go to visit customers directly internationally because it’s pretty expensive to do this, but going to speak to a conference you might be speaking to a 100 customers at a time. When I was in Australia I spoke to quite a lot of people from different parts of the Australian government who I wouldn’t be able to approach in any other way but they actually came up to speak to me...” (Interviewee 1) – (serendipity role – Quote 10)</i></p>
1998/ Hong Kong – 2000/ Singapore	<p><i>“... I mean we seem to have built up a big market in Hong Kong and Singapore without any conscious decision to enter into or even any effort to expand into that particular market it just sort of happened and it’s the usual pattern for a market entry, it was a product which is spotted by one or two people and a country or a company and then we talked to their colleagues or the company, people move between companies and organisations and then go to buy the product in your organisation so there is a slow kind of viral networking effect. The network doesn’t really decide what countries we enter that’s really the market that decides whether our product suits their needs or not...” (Interviewee 1) – (serendipity role – Quote 11)</i></p> <p><i>“... The same pattern has been true with other resellers, people from Hong Kong and Singapore wanted to be resellers, because one of their customers had asked them how can we buy the software through you?...” (Interviewee 1) – (Quote 12)</i></p> <p><i>“We’ve retailers there although I think people are less inclined to buy online there because of the tax situation. They get buy it through a reseller, the reseller pays the tax. So there is a company there that pushes the risk onto the third parties. It’s often companies based in the US and the UK that have development operations in India, outsourcing type of things that are kind of buying a software from a UK company operating in India or website sales in the UK...The resellers found us online because</i></p>

2001/ Japan	<p><i>some of their customers were very interested in our products. They approached us by a cold email and the match was very good...</i> (Interviewee 1) – (serendipity role – Quote 13)</p> <p><i>“...I was learning Japanese because I used to work for a company that was taken over by Panasonic so we had a lot of dealings with people in Japan. We do have customers in Japan... I approached a reseller in Japan but most of them found us through the internet... We’ve resellers in Japan that sell our products. People who are ordering our product want to speak to somebody who speaks the same language. It’s easier doing things by email and online, when you aren’t a native speaker and you’re trying to do it on real time it’s really hard but when you’ve time typing it, it’s easier. The resellers lose the interest when they sell the product and have been paid; we do most of the customer support... They don’t actually care what they’re selling as long as they get paid.”</i> (Interviewee 1) – (efficacy and serendipity role – Quote 14)</p>
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Case G

Table: Various dimensions and background information

Various factors/dimensions	Various dimensions and background information
Cultural differences	<p><i>“... We certainly needed to have a local language support. Our products are engineering products so that means that local engineering support is needed. In those countries where we have people that work there, it is mainly for technical support. So in Japan it was important to have local language support... We’ve done business in China without language support and it has been very tough... To hire local people is a big financial investment commitment, but it definitely increases your ability to do business... We made the investment in Japan and the US and it has paid off, we’ve hesitated in China and probably it was a mistake... If you go in different countries you can be more efficient if you hire local people, but for small companies that’s a big investment. You can find local representatives but there aren’t so effective as local people.</i></p> <p><i>...I guess you should know what you’re doing before you make that decision. Japanese aren’t so open to new things however when they say that they will do something they’ll do it. They’re also very loyal customers so we try to keep them. You’ve to take cultural differences into consideration but I don’t think they would have changed my decision to go to the Japanese market. On the other hand in the Chinese market you have got much more flexible interpretation compared to what they agreed to, lets put it that way. It’s very possible to get angry and upset with Chinese customers. You’ve to adapt your business culture to get closer to theirs. These issues wouldn’t change my decision regarding what countries I would go into...”</i> (Interviewee 1) – (Quote 1)</p>

Table: Roles of social capital

Year/ Country	Roles of social capital
2003/ France	<p><i>“...The first country that we had sales in was France ST Microelectronics it was in 2003. It had to be the first place that we were successful. We were pursuing customers in the US but at that point we were successful in France. We had a contact there that introduced us...The network and direct contacts with sales divisions of ST Microelectronics came directly from my co-founder’s past, network and experience. They had a division in Edinburgh and we knew some people there...”</i> (Interviewee 2) – (efficacy role – Quote 2)</p>
2004/ US	<p><i>“... In the US I did use some of my existing contacts to enter the market and find new customers, in Japan not so much. So the people that we found in Japan and the US were references, I put an enquiry to my network, I am looking for someone in the US, I am looking for someone in Japan and I have got some recommendations. So the people that we hired were recommended to me but I didn’t know them personally. Obviously it’s a big risk, the first person we hired in the US didn’t last very long, he was good actually but he wanted to do something else... It was a mutual decision to terminate our collaboration with the person in the US. The US guy found it very difficult to work with a small company far away; he wanted to work in a bigger organisation. He was a very good engineer but in Silicon Valley there are so many opportunities, people change work very often...”</i> (Interviewee 1) – (efficacy and liability role – Quote 3)</p> <p><i>“... In a big US company that we do business at the moment, the contact that I got was from one of my other contacts. My contact told me don’t mention my name just contact this person in the US directly because he would be interested in what you’re doing. I found his email address on the internet and I sent him a cold email... My friend of course had told me that this person should be interested...”</i> (Interviewee 1) – (efficacy role – Quote 4)</p> <p><i>“...one of our board members suggested that she had contacts in a company that might be interested in what we’re doing, and she offered to introduce me. She gave me the name of the person and I</i></p>

2005/ Japan	<p><i>realised that I knew this person but I hadn't talked to him for many years. Our board member told me that I'm doing business with him currently so I said then maybe you could reintroduce me to him. I was already connected through LinkedIn with him but the connection was kind of old because I haven't spoken to him for many years. So the board member introduced me again when I was in the US and we started doing business. It was a good example of someone introducing me..." (Interviewee 1) – (efficacy role – Quote 5)</i></p> <p><i>"... The first person that we interviewed was very good and he still works for us so that worked very well actually. This person was introduced to me from my contacts because I told them that we were searching for someone in Japan. So he came from a bigger company doing similar things to us, it was an American company and he was used to working remotely. He's American but he has been living there for ages so he's fluent in Japanese, which it's very helpful in terms of language... He introduced us to some customers in Japan..." (Interviewee 1) – (efficacy role – Quote 6)</i></p> <p><i>"... Working for a Japanese company was very useful not only for understanding their business culture but also to create a network... One of our customers there was found through my network in my previous job, some of my previous colleagues introduced me to a Japanese company..." (Interviewee 1) – (efficacy role – Quote 7)</i></p>
2011/ China	<p><i>"... We've succeeded in China. We succeeded first in 2011. We picked one big customer over there actually they contacted us first. They contacted us about our products and we went to visit them and we did some business, we still do some business. They found us on the internet..." (Interviewee 1) – (serendipity role – Quote 8)</i></p> <p><i>"... We're dealing with Huawei in China, which is the biggest telecommunications company there, and we know quite a few people there at engineering level. We were recommended and introduced by someone in my personal network..." (Interviewee 1)</i></p> <p><i>"... We found that China is a very difficult market without local people and without people speaking Mandarin. It was the Japanese sales person that had contacts in China and eventually established a relationship with a big telecommunications company in China..." (Interviewee 2) – (efficacy role – Quote 9)</i></p>
Future entry/ South Korea	<p><i>"... We haven't succeeded in South Korea yet... We've only started visiting South Korea in 2012, we've a customer there but we don't have the yes. When you're approaching these companies and entering these countries you focus on big companies where their English standard is high. Their business culture is also more westernised so you've possibilities to succeed. I wouldn't like to try to sell to a small Chinese or small Korean company, I think you would be wasting your time. Samsung for example in Korea is a huge corporation, making a lot of things so they're used to doing business with small companies, they all speak English well. So we could do business with them without having a local representative..." (Interviewee 1) – (efficacy role – Quote 10)</i></p> <p><i>"... I know some people who are international sales VPs for big companies so they might know someone in Samsung. It makes a big difference that, and you definitely need this. You don't need contacts in the country but you need contacts that have contacts over there. Some of these people can introduce you..." (Interviewee 1) – (efficacy role – Quote 11)</i></p>

Case H

Table: Various dimensions and background information

Various factors/dimensions	Various dimensions and background information
Market focus	<p><i>"... All of our customers are multinationals. We do consultancy and we sell the product I've mentioned. The product has been sold to only one customer, which is based in London but now is in Hong Kong. There is an American investment bank, there is a Swiss one, a British one and a German one. They've their HQs in other countries other than the UK. We've generally started in London and we get references from them. We've to talk to people even if they're elsewhere. Typically this would be somebody who is in the home country of the bank but they're extremely international ones. It's really consultancy in helping to use the technology that we have..." (Interviewee 1) – (Quote 1)</i></p> <p><i>"... We believe that we've a very niche product so I guess for two reasons we look for collaborations. Multinationals offers us a bigger geographical scope and because it's a niche product we believe that the international market is very important for us. Being a small company, it's difficult to reach international markets without strategic partnerships. We're really using them as a vehicle to increase our scope. Clients will be also willing to buy from a big multinational..." (Interviewee 2) – (Quote 2)</i></p>
Cultural differences	<p><i>"... I personally went to the US and London so I can compare those two. The Americans are more straight forward at doing business, this is what I've noticed so although I haven't completed a sale there I had the impression it's a more straight forward process, you talk to somebody and come</i></p>

	<p>quickly to a short decision and then continue to a sale. Whereas in the UK it's less direct...I visited a British bank in New York, a German bank in New York and an American bank in New York so it was the same in all of those places... The staffs in these places are very international, so we can go to London and meet any kind of nationality. It's very diverse to any country I've been to..." (Interviewee 1) – (Quote 3)</p>
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Table: Roles of social capital

Year/ Country	Roles of social capital
Future entry/ Hungary - US	<p>"... We started negotiating in Hungary in 2012, we were referred from London. The US, I was there one year ago in 2012 visiting people some of them were from a global Scots network and some of them were people who we were referred from London. We had emails and phone calls for a long time. Switzerland since 2012 are again people we were referred via London, working with a Swiss bank in London and they talked to some people in Zurich. We went to Hong Kong in 2013 and we were referred from London... In general the situation is that we're trying to sell into these multinational companies we started in London and we get referred as necessary to other parts of the world. And we follow up without paying attention to any geographical boundaries..." (Interviewee 1) – (efficacy role – Quote 4)</p> <p>"...A lot of our targets are overseas and we're about to sign two distribution agreements with international partners. One is in the US and one is in Hungary. These are both multinational organisations to develop international operations... The Hungarian partner was working for one of our clients. We were introduced through that client relationship. That was a straightforward discovery of a partner. The second one is the US based organisation and that really was by a combination of analysing the static analysis market and the technology that we have and we identified a number of candidate partners from that market and we then analysed the strength of relationship that we had from each of these candidates and through that process we decided on the partner that we chose who had a good technical fit and good geographical fit..." (Interviewee 2) – (efficacy role – Quote 5)</p> <p>"...Hungary is a special case. The investment banks have enormous IT functions so a typical size of an IT department of an investment bank is 10,000 people with budgets of multiple billions. They do a lot of outsourcing and contracting of such work as well. The reason we went to Hungary was to shorten the decision making process that we're tempting to use, one of their trusting contractors happened to be Eastern European and doing work with the contractor for the bank. The actual customer is the bank but we're using this route for sale channel into the bank..." (Interviewee 1) – (efficacy role – Quote 6)</p>
Future entry/ Switzerland	<p>"...We found contacts in other countries like in the US, Hungary, etc. mainly through the UK. For example one of my former students works in London and he said you should be talking to this guy in Zurich who makes decision in these kind of things..." (Interviewee 1) – (efficacy role – Quote 7)</p>

Case I

Table: Various dimensions and background information

Various factors/dimensions	Various dimensions and background information
Cultural differences	<p>"...We didn't overcome those (cultural) problems. That's why we don't have any Japanese customers now. It's really difficult in engineering. We found the Americans the easiest to deal with. We employ a lot of Europeans in a way as a company we're very European, in terms of customers we think much more like the Americans. The thing with the Americans is that if something goes wrong they tell you and you try to fix it and we can cope with that because we don't mind fixing things. The Japanese won't tell you, if something is going wrong and they won't admit it. I've spoken to other Westerners who have been working in Japan and this is a real problem. You've to put a lot of effort into working it out when something is going wrong, for a small company over here we don't have the resources and money to put lots of people to talk to them (Japanese), it's far too frustrating. It also increases the pressure. If something goes wrong no one says it's all over. This is very difficult in engineering..." (Interviewee 1) – (Quote 1)</p>
Sales patterns	<p>"...I've analysed our sales process and the things we have done and we were successful and the things we've done and we were unsuccessful. It's very clear that all our successful sales processes there is a common thread and this is completely random, always complete random and it makes no sense. You cannot for us follow a system other than to be around when random things happen. We've</p>

	<p>to maintain a presence and we're known in our field. There is very little point in us chasing very specific opportunities; it doesn't work for us. The main reason for that is the point where someone is going to decide to engage with us to bring the technology from us, it's about a product they've been developing internally that it's extremely secret so there is no way of knowing which company is doing this, there is no way of predicting this. What is more important is to make sure that we're in the right networks because somebody is going to open the door for us. There are certain places that they're going to be on a small scale, two or three people in certain event and then you wait for them to come to you. We go to conferences a lot, we used to exhibit at conferences but we don't intend to do this anymore. We get very involved in standardisation processes it is quite useful. If you're making a phone or an app you can buy a chip that goes into this, it's going to do process graphics. There are standards defined, open standards within the industry so lots of companies can make different graphic processors and they all work together. So the ones you know it's the iPhone, you don't know who makes the Wi-Fi inside your device, the standard is the Wi-Fi so different companies can make those chips. We work on the process of defining these standards. That's quite useful in terms of being part of what is happening in the industry. If you're part of the standard definition discussions, it's difficult for them to get off and design a chip without at least using these standards. It isn't public, it's behind closed doors but it's behind those doors that a lot of the decision making takes place..." (Interviewee 1) – (Quote 9)</p>
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Table: Roles of social capital

Year/ Country	Roles of social capital
2002/ Japan	<p>"...Our first customer was in Japan. If you're doing something very high tech there is no nation notion... They found us through the internet, it was a very small customer it wasn't enough to keep the business going, it was in 2002. We had to terminate our collaboration with them due to cultural differences and because they weren't so engaged... There was a second Japanese customer in 2007. We had approached them. It was through networking. It was a long process. We were dealing with a large company so it wasn't a single introduction; we needed to meet a lot of people. You have to build it up every time..." (Interviewee 1) – (serendipity, liability and efficacy role – Quote 2)</p>
2004/ US	<p>"...Our first big profitable customer was an American customer that I met in Japan... We were trying to sell a product that we had at that time to Japanese customers. The Japanese customers were quite interested, we had the Japanese customer but it wasn't enough to keep the business going. We were working with a partner company that didn't do very well so the guy in the partner company left and went to a start-up and when he went to the start-up that needed the technology, so he said oh yes I know these people. The American company is now based in Austin Texas..." (Interviewee 1) – (efficacy role – Quote 3)</p>
2006/ Canada	<p>"...Our customer in Canada was found through my network. I knew someone in a Canadian company who introduced me to the Canadian customer. It's important to get introduced by a person through trust to a potential customer because it's enhancing the chances of signing a contract..." (Interviewee 1) – (efficacy role – Quote 4)</p> <p>"...We've one guy in Ontario, Canada. He's a very good engineer and his network will help us to find more customers there in the future. We're trying to recruit more there... We had a competitor in Waterloo Ontario and a big company bought them and then they were shut down and they contacted us and said we're looking for jobs and I got one of them. We're hoping to hire more; today or tomorrow we're hoping to hear back from another one." (Interviewee 1) – (Quote 5)</p>
2007/ Ireland	<p>"...We entered the Irish market in 2007. We don't have many customers there because the US, Japan and South Korea offer more opportunities. We found the first customer through my network in one of the associations where we're a member. Through the association we got an introduction to the Irish customer and it has been a successful collaboration. They needed our technology to develop their product. I knew the person who introduced me from the association for many years and he trusted me..." (Interviewee 1) – (efficacy role – Quote 6)</p>
2011/ European project	<p>"...For the next project that we did, it was only with small companies and universities, at a conference in Edinburgh I was on a panel with a Greek academic, he was at the University of Patras but he was actually moving to Sweden but he knew firm X in Greece very well. We got together another group to do a European funding project, so firm X has done one or two of these projects, it was in 2011. Firm X liked it because they got funded, you build up a network of small companies. The European Union has to find partners but they're really awful..." (Interviewee 1) – (efficacy role – Quote 7)</p>
Future entry/ South	<p>"...I think when talking to the right people the opportunity is there, people who would be willing to</p>

Korea	<i>buy from us. Saying the right things to the right people then they would come to us. The Asians are far far more secretive, Apple is secretive but not like Asians... Currently we would sell to other UK based companies. The question is when does this change? Just because it's a South Korean company doesn't necessarily mean that the design team in that technology is in South Korea. It just means that their head office is there. Maybe the project would be managed from the UK or California or may not be...". (Interviewee 1) – (efficacy role – Quote 8)</i>
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Appendix three: Self-Audit Checklist for Level 1 Ethical Review



University of Edinburgh,

School of Social and Political Studies

RESEARCH AND RESEARCH ETHICS COMMITTEE

Self-Audit Checklist for Level 1 Ethical Review

The audit is to be conducted by the **Principal Investigator**, except in the following cases:

- **Postdoctoral research fellowships** – the applicant in collaboration with the proposed mentor.
- **Postgraduate research** (PhD and Masters by Research) – the student together with the supervisor. Note: All research postgraduates should conduct ethical self-audit of their proposed research as part of the proposal process. The audit should be integrated with the student's Review Board.
- **Taught Masters dissertation work and Undergraduate dissertation/project work** – in many cases this would not require ethical audit, but if it does (for example, if it involves original fieldwork), the student conducts the audit together with the dissertation/project supervisor, who keeps it on file.

Potential risks to participants and researchers

- 1 Is it likely that the research will induce any psychological stress or discomfort? YES NO
- 2 Does the research require any physically invasive or potentially physically harmful procedures? YES NO
- 3 Does the research involve sensitive topics, such as participants' sexual behaviour or illegal activities, their abuse or exploitation, or their mental health? YES NO
- 4 Is it likely that this research will lead to the disclosure of information about child abuse or neglect, or other information that would require the researchers to breach confidentiality conditions agreed with participants? YES NO
- 5 Is it likely that participation in this research could adversely affect participants? YES NO
- 6 Is it likely that the research findings could be used in a way that would adversely affect participants or particular groups of people? YES NO

- 7 Will the true purpose of the research be concealed from the participants? YES NO
- 8 Is the research likely to involve any psychological or physical risks to the researcher, and/or research assistants, including those recruited locally? YES NO

Participants

- 9 Are any of the participants likely to:
- be under 18 years of age? YES NO
- be physically or mentally ill? YES NO
- have a disability? YES NO
- be members of a vulnerable or stigmatized minority? YES NO
- be in a dependent relationship with the researchers? YES NO
- have difficulty in reading and/or comprehending any printed material distributed as part of the research process? YES NO
- be vulnerable in other ways? YES NO
- 10 Will it be difficult to ascertain whether participants are vulnerable in any of the ways listed above (e.g. where participants are recruited via the internet)? YES NO
- 11 Will participants receive any financial or other material benefits because of participation, beyond standard practice for research in your field? YES NO

Before completing the next sections, please refer to the University Data Protection Policy to ensure that the relevant conditions relating to the processing of personal data under Schedule 2 and 3 are satisfied. Details are Available at: www.recordsmanagement.ed.ac.uk

Confidentiality and handling of data

- 12 Will the research require the collection of personal information about individuals (including via other organisations such as schools or employers) without their direct consent? YES NO
- 13 Will individual responses be attributed or will participants be identifiable, without the direct consent of participants? YES NO
- 14 Will datafiles/audio/video tapes, etc. be retained after the completion of the study (or beyond a reasonable time period for publication of the results of the study)? YES NO
- 15 Will the data be made available for secondary use, without obtaining the consent of participants? YES NO

Informed consent

- 16 Will it be difficult to obtain direct consent from participants? YES NO

Conflict of interest

The University has a 'Policy on the Conflict of Interest', which states that a conflict of interest would arise in cases where an employee of the University might be "compromising research objectivity or independence in return for financial or non-financial benefit for him/herself or for a relative or friend." See: http://www.docs.csg.ed.ac.uk/HumanResources/Policy/Conflict_of_Interest.pdf

Conflict of interest may also include cases where the source of funding raises ethical issues, either because of concerns about the moral standing or activities of the funder, or concerns about the funder's motivation for commissioning the research and the uses to which the research might be put.

The University policy also states that the responsibility for avoiding a conflict of interest, in the first instance, lies with the individual, but that potential conflicts of interest should always be disclosed, normally to the line manager or Head of Department. Failure to disclose a conflict of interest or to cease involvement until the conflict has been resolved may result in disciplinary action and in serious cases could result in dismissal.

17 Does your research involve a conflict of interest as outlined above? YES NO

Overall assessment

If all the answers are NO, the self audit has been conducted and confirms the ABSENCE OF REASONABLY FORESEEABLE ETHICAL RISKS. The following text should be emailed to the relevant person, as set out below:

"I confirm that I have carried out the School Ethics self-audit in relation to [my / name of researcher] proposed research project [name of project and funding body] and that no reasonably foreseeable ethical risks have been identified."

- Research grants– the Principal Investigator should send this email to the SSPS Research Office (ssps.research@ed.ac.uk) where it will be kept on file with the application.
- Postdoctoral research fellowships – the Mentor should email the SSPS Research Office (ssps.research@ed.ac.uk) where it will be kept on file with the application.
- Postgraduate research (PhD and Masters by Research) – there is no need to send the Level 1 email. The ethical statement should be included in the student's Review Board report.
- Taught Masters dissertation work and Undergraduate dissertation/project work – there is no need to send the level 1 email. The dissertation supervisor should retain the ethical statement with the student's dissertation/project papers.

If one or more answers are YES, risks have been identified and level 2 audit is required. See the School Research Ethics Policy and Procedures webpage http://www.sps.ed.ac.uk/admin/info_research/ethics for full details.