

TITLE

International new ventures in 'low tech' sectors:
A Dynamic Capabilities perspective

Author: Natasha Evers

Department of Marketing
J.E. Cairnes School of Business and Economics
National University of Ireland, Galway
Republic of Ireland

Email: natasha.evers@nuigalway.ie

Phone: 00353 91 492788

Abstract

Purpose – Drawing on the Dynamic Capabilities Perspective and the Resource Based View of the firm (RBV), this paper seeks to further our understanding of international new ventures operating in a traditional low technology sector - an understudied context in International entrepreneurship.

Design/methodology/approach – Exploratory research merited qualitative research as the chosen methodology. Multiple case study design and critical incident technique were the main qualitative techniques employed.

Findings – The case entrepreneurs' objective and subjective capabilities emerge as a critical key resource for strategically managing and developing the dynamic capabilities of the firm in areas of R&D, logistics and production. The firms' capability to adapt and renew themselves through product diversification strategies was also critical for sustainable competitive advantage in a highly turbulent and competitive sector of seafood.

Research limitations/implications – The study is sector specific and while the sample size is small, findings are consistent. The paper presents a conceptual research framework for exploring further dynamic capabilities theory across diverse empirical high and low-tech

industry contexts.

Practical implications – Low technology sectors are considered a ‘forgotten sector’ of innovation policies in small-developed economies (Hirsch-Kreisen, 2008). Findings from this study identify a number of important implications of relevance to policy-makers and managers.

Originality/value – This study contributes to the knowledge and understanding of how INVs in traditionally low-tech sectors develop competitive advantage on international markets. The study presents an entrepreneurial perspective to the dynamic capabilities theory of the firm and presents a conceptual research framework to further our understanding on INVs.

Key words: Keywords: International new ventures; dynamic capabilities; low technology sectors

Paper Classification: Research paper

1. INTRODUCTION

International entrepreneurship (IE) is described as ‘a process of creatively discovering and exploiting opportunities that lie outside a firm’s domestic markets in the pursuit of competitive advantage’ (Zahra and George, 2002, p. 11). International new ventures (INVs) constitute a form of international entrepreneurship. From inception, they ‘seek to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries’ (Oviatt and McDougall, 1994, p. 49). Many studies hold that for INVs to internationalise successfully much depends on the internal capabilities of the firm (Autio *et al.*, 2000; McDougall *et al.*, 1994; Zahra *et al.*, 2000). Faced with resource abundant, experienced multinationals enterprises, INVs need to develop their own unique and dynamic competencies – typically manifested through unique knowledge-intensive assets (technological offerings) and in the ability to utilise technology effectively (Eisenhardt and Martin, 2000; Hamel and Prahalad, 1990; Mathew, 2003; Teece *et al.*, 1997). Furthermore, INVs with superior technologies and internationally experienced entrepreneurial teams are more likely to acquire international competitive advantage early than those without (Aspelund *et al.*, 2007; Loane *et al.*, 2007; McDougall *et al.*, 2003; Rialp *et al.*, 2005; Weerawardena *et al.*, 2007).

However, international performance is also a function of an entrepreneur’s managerial competence (Chandler and Hanks, 1994). High-performing INVs can also show timely responsiveness, flexibility, and managerial capabilities such as the ability to innovate and develop knowledge and a network of resources for competitive advantage (Nooteboom, 2002; Teece, 2000; Weerawardena *et al.*, 2007). Zahra *et al.* (2003) also found that it was not the technology or the R&D per se that facilitated successful internationalisation processes, but rather the network linkages embedded in the INV’s entrepreneurial team.

Despite much sophisticated theoretical conceptualisations of the dynamic capabilities

perspective of the firm (Eisenhardt and Martin, 2000; Teece *et al.*, 1997; Weerawardena *et al.*, 2007) empirical studies have been limited in explaining how dynamic capabilities are actually developed and manifested in INVs. Although existing empirical studies suggest that firms develop dynamic capabilities through building, adapting and reconfiguring existing capabilities (Montealegre, 2002; Zucchella, 2005), case studies have been called for to effectively capture dynamic capability development in the present context of INVs (Montealegre, 2002). As IE has tended to focus on INVs in mainly high technology and knowledge intensive sectors of the economy, we know little about the resources, knowledge and capabilities that can underpin the competitiveness of INVs in traditional low technology sectors. In other words, where technologically embedded offerings are not a core component of competitive advantage, and where industry dynamics can differ greatly from each other.

According to the OECD industry classifications of high and low technology sectors¹, low-tech sectors mainly comprise “mature” industries such as food processing, publishing and furniture industries. These industries are typically more challenged by the globalization processes, such as rapid advancements in technology and ICT, and as their products can be easily imitable to a large extent they can ultimately fail under cost and competition pressures (Hirsch-Kreinsen, 2008).

With only a handful of INV studies in traditionally low-tech sectors (see McAuley, 1999; Belos-Martinez, 2006; Evers, 2010; Fillis, 2000; Knight *et al.*, 2001; Sullivan-Mort and Weerawardena, 2006; Wickramasekera and Bamberly, 2001), this study draws on the

¹ According to OECD a key determinant of industry classification is the level of R&D intensity within the sector. R&D intensity is a common indicator that is used internationally to measure the ratio of the R&D expenditure to the turnover of a company or a business sector. The OECD distinguished between industries in terms of R&D intensities, with those (such as ICT or pharmaceuticals) spending more than 4% of turnover being classified as high-technology, those spending between 1% and 4% of turnover (such as vehicles or chemicals) being classified as medium-tech, and those spending less than 1% (such as textiles or food) as 'low tech'. Hence 'low tech sectors comprise for the most part “mature” industries such as the manufacture of household appliances, the food industry, the paper, publishing and print industry, the wood and furniture industry'. (OECD, **OECD Science and Technology Indicators, No 2: R&D, Innovation and Competitiveness**, (OECD:Paris), pp. 58-61.

dynamic capabilities perspective (Teece *et al.*, 1997) and Resource Based View (RBV) (Barney, 1991) to investigate how INVs operating in the global seafood sector develop and sustain competitive advantage on international markets. Drawing on three in-depth cases of highly export-dependant Irish seafood ventures, this study seeks to explore two research questions:

1. How do new seafood export ventures firms develop and sustain competitive advantage on international markets?
2. What are the strategic attributes of new seafood export ventures firms that explain their international competitiveness?

A review of the literature is firstly presented, followed by the methodology. Case findings are analysed and discussed, leading to a conceptual research framework to guide future research. Finally, conclusions, limitations and implications from this study are identified.

2. LITERATURE REVIEW

2.1 Synthesis of key findings: strategic attributes of INVs

Rialp *et al.*'s (2005) work and more recently the work of Aspelund *et al.* (2007) and Keupp and Gassmann (2009) have provided comprehensive literature reviews on the body of published studies on INVs. Building on these works, this review is more specific in its scope, by identifying those attributes of INVs underpinning their international competitiveness. This study defines strategic attributes as those resources and capabilities that enable the firm to develop and sustain competitiveness on international markets at an early stage in its life-cycle. These are typically internal resources, and they provide the firm with a unique and sustainable advantage over competitors (Penrose, 1959).

Table I clusters the key strategic attributes most supported in the INV literature. A number of observations can be made in this regard.

INSERT TABLE I HERE

Firstly, by drawing on extant studies, a profile of key attributes can be created for INVs. Noting the high concentration of studies on INVs in high technology sector (see Jolly *et al.*, 1992; Jones, 1999; Knight and Cavusgil, 1996), one can assume that these attributes are not necessarily specific to traditional sectors of the economy. Secondly, a firm's unique knowledge-intensive assets (in the form of technological offerings) and their ability to utilise technology effectively (Oviatt and McDougall; 1994, 1997) create the basis for competitive advantage and accelerate early and successful internationalisation of new firms (Autio and Sapienza, 2000). Thirdly, studies also support the view that entrepreneur-specific capabilities are important for international performance (Bloodgood *et al.*, 1996; Dimitratos and Carter, 2004; Ibeh, 2003; Knight, 2001; Knight and Cavusgil, 1996; McDougall and Oviatt, 1996; Zucchella *et al.*, 2005), and can influence the strategic management and direction of the firm (Kuivalainen and Bell, 2004; Weerawardena *et al.*, 2007).

2.1.1 *Attributes of the INV Entrepreneur*

From this review, the attributes (Table I) can be examined at two levels: 1) The Entrepreneur and 2) the Firm. Drawing on Hutchinson *et al.*'s (2006), categorisation of managerial characteristics, the attributes associated with INV entrepreneurs can be categorised in to objective capabilities and subjective capabilities.

Objective capabilities are identified as the founder's possession of prior experiential international work experience, prior industry knowledge, and networks. In their comparison

of domestic new ventures and INVs, McDougall et al. (2003) found that INV founder's prior international experience was cited as a key factor that distinguished INVs other new ventures. McDougall et al.'s (2003) also identify the founder's prior generalist experience in the form of technical, commercial (marketing) and start-up were valuable types of experiential knowledge for the firm's internationalisation process. Such prior experiential knowledge and access to network ties represent a unique resource for the firm in the form of human capital embedded in the INV founder-manager(s) (Loane and Bell, 2006). However, the author conjectures that 'economic rents for the firm' will not be generated for the INV from such objective knowledge and capabilities if managerial effort and motivation are lacking or misdirected (Castanias and Helfat, 2001), hence we turn to subjective capabilities of the INV founder.

Subjective capabilities: In the context of entrepreneurial behaviour, Bateman and Crant (1993) refer to the construct of a proactive personality, which is defined as the extent to which individuals 'scan for opportunities, show initiative, take actions, and persevere until they reach closure by bringing about change' (p. 36). This can also be referred as *subjective capabilities* and are commonly displayed by the INV entrepreneurs' personal traits and capabilities. INV entrepreneurs are found to enact entrepreneurial oriented behaviours by engendering global vision, proactiveness, risk-taking and customer-orientation from inception (Moen 2002; Rialp *et al.*, 2005). Other subjective attributes were global mindset of the founder (Knight and Cavusgil, 2004). Global mindset refers to the INV founder's proactiveness and vision towards leading and managing their new ventures on international markets (Harveston *et al.*, 2000).

Similarly, in their theoretical paper, Weerawardena et al. (2007) posit that INV founder-managers possess certain dynamic attributes that drive the capability building process of the firm to develop knowledge intensive products for competitive advantage

(p.299). They propose that founder-managers possess ‘networking capabilities’ for knowledge and resource acquisition and international ‘market focused learning capabilities’ to better position their firm in niche markets. Market-focused learning capability is defined ‘as the capacity of the firm, relative to its competitors, to acquire, disseminate, learn and integrate market information to create value activities’ (Weerawardena *et al.*, 2007, p. 300).

2.1.2 *Attributes of INV firm*

At firm level, three key attributes (see Table I) emerge as the basis for competitive advantage for INVs. Firstly, studies agree that INVs position themselves on product differentiation through creation of unique intangible knowledge-intensive offerings, facilitated by technological innovations. Second, these firms target and deliver to global niche customer segments, and in doing so develop and maintain close working relationships with their international customers (Loane and Bell, 2006; Madsen and Servais, 1997; Oviatt and McDougall, 1994, 1997;).

From extant findings (See Table I), it can be argued that the development of competitive advantage is developed within the internal boundaries of the firm; in particular profitability and growth should be understood in terms of the firm’s possession and development of unique and idiosyncratic resources (Penrose, 1959). Such resources may include the firm’s ‘human resources, capabilities, competencies, orientations, stock of knowledge and technology, knowledge management procedures, and human capital’ (Etemed, 2004, p.18). Knowledge, and the capability to create and utilise it, is a prime source of sustainable competitive advantage for firms (Cyert *et al.*, 1993; Drucker, 1993; Nonaka and Takeuchi, 1995). Many researchers have drawn on the RBV (Bloodgood *et al.*, 1996), the Knowledge Based View (Autio and Burgel, 1999; Autio *et al.*, 2000; Kuivalainen and Bell, 2004; Sapienza and Autio, 2000) and more recently, the dynamic capabilities

perspective to explain competitive advantage of INVs (Weerawardena *et al.*, 2007; Zucchella, 2005).

2.2 Dynamic Capabilities and Resource based view of the firm

The RBV suggests that firms in the same industry perform differently because they differ in their resources and capabilities (Wernerfelt, 1984). As much of the RBV literature focuses on static firm-specific resources, the Knowledge based view (KBV) extends the RBV to examine those resources that are non-stationary and more dynamic (Kuivalainen and Bell, 2004). The KBV overlaps with the dynamic capabilities view (Teece *et al.*, 1997). The KBV and dynamic capabilities perspective have been used interchangeably in the literature, since both approaches focus on knowledge inventories, capabilities and resources as sources of competitive advantage and firm growth. However, the dynamic capabilities view, whilst implicitly suggesting the need to distinguish capabilities from resources, stresses the importance of the dynamic processes of capability building in gaining competitive advantage (Weerawardena *et al.*, 2007). In contrast to the RBV, the dynamic capabilities theory posits that the firm needs to develop new capabilities to identify opportunities and to respond quickly to them (Jarvenpaa and Leidner, 1998). The dynamic capabilities view considers firms as active generators of competitive resources by which managers ‘integrate, build, and reconfigure internal and external competencies to address rapidly changing environments’ (Teece, 1997, p. 380).

2.2.1 *The role of the entrepreneur in dynamic capabilities perspective of firm*

The dynamic capabilities view assigns a prominent role to the entrepreneurial decision-makers in the formulation and implementation of competitive strategy (Weerawardena *et al.*, 2007). Dynamic capabilities are also developed consciously and

systematically by the willful choices and actions of the firm's strategic leaders (Grant, 1991; Teece *et al.*, 1997; Weerawdeena *et al.*, 2007). Following the logic of the RBV (Barney, 1991), Castanias and Helfat (2001) suggest that managerial resources, defined as the skills and abilities of managers, can be difficult to replicate quickly. Managerial skill sets (combined with other firm assets and capabilities jointly have the potential to generate rents and can be 'key contributors to the entire bundle of firm's resources that enable some firm's to generate rents more than others (Castanias and Helfat, 2001, p. 662).

New firms can internationalise successfully due the entrepreneurs' specific capabilities (Knight and Cavusgil, 1996; Oviatt and McDougall, 1994). Entrepreneurial orientated firms display capabilities like innovation, and proactively seeking opportunities to recognise opportunities (Lumpkin and Dess, 1996). What one conceives of entrepreneurship is a process, not just a status, and as such it requires dynamic attributes (Zucchella *et al.*, 2005). It requires the entrepreneur to develop the organisation through capabilities reconfiguration (Montealegre, 2002) - the capacity of the founder-manager to mobilise resources and develop and reconfigure dynamic capabilities in changing business environments for firm performance (Weerawardena *et al.*, 2007; Zucchella *et al.*, 2005). Weerawardena *et al.*'s (2007) positioned the owner-manager central to the development of dynamic capability for knowledge-intensive firms.

Building on the above arguments, this paper argues that the dynamic capability perspective and the RBV can explain how INVs in a low technology sector develop competitive advantage and also underpin those strategic attributes that enable them to do so. Incorporating the dynamic capabilities view enables us to capture the development of capabilities that facilitates the INVs to acquire competitive advantage. While the dynamic capabilities enables us to capture the role of knowledge in creating competitive advantage,

this research examines the entrepreneur's prior knowledge and capabilities (objective and subjective) in building firm capabilities in terms of accessing, developing, combining and integrating resources inside and outside the firm for competitive advantage.

3. METHODOLOGY

As the aim of the present study was to examine generating mechanisms and dynamic capability building processes, case study method was the chosen strategy (Eisenhardt, 1989; Yin, 1994; See also Sullivan-Mort and Weerawardena, 2006) with the Critical Incident Technique (CIT) as the main tool for data analysis (Chell, 2004; Flanagan, 1954). One way of capturing process is through case studies of firms, as they are useful ways of understanding why things are as they are (Spender, 1996). Many authors (Chetty, 1996; Fletcher, 2009; Ghauri, 2004) have advocated the use of the cases in research on international SME research. One key advantage of case over survey research is the former's role in facilitating the study of the internationalisation process from several perspectives and therefore facilitating a more thorough analysis of each firm. Multiple case design was adopted as a more robust alternative than a single case study (Yin, 1994). Should the research problem demand rich, deep information, then a small number of case studies are appropriate; and, as long as generalisability is not assumed, meaningful findings can still result (Coveillo and Jones, 2004).

4.1 Critical Incident Technique

For case data analysis, critical incident technique (Flanagan, 1954) was used to develop and extend the narrative quality of the data, and to ensure a more formalise approach for the analysis and interpretation of qualitative interview case data was adopted (Ghauri and Firth, 2009; Sinkocvis *et al.*, 2008). CIT refers to "a set of procedures for collecting direct

observations of human behaviour in such a way as to facilitate their potential usefulness in solving practical problems” (Flanagan, 1954, p. 327). CIT focuses on capturing process through a series of discrete events and has been effective for exploring the dynamics of processes, the delivery of and acting on that information and the outcome of the event. Modified by Chell (2004) CIT has been the main procedure for gathering qualitative data for CIT. Using critical incidents provide a better understanding of how dynamic capabilities develop and manifested in the case firms. Where possible, CIT enabled the study to generate rich data and help visualise the empirical evidence extending the narrative quality, rather than simply relying on quotations. Further, CIT lends itself to small sample sizes (Neupart *et al.*, 2006; Scharf *et al.*, 2001), which also suits the number of case samples used in the study as discussed below.

4.2 Case sampling technique

The approach to case sampling was guided by Coviello and Jones’s paper on methodological issues in IE research (2004), which supports the use of judgment sampling provided the sample criteria are well-specified and appropriate approaches are undertaken to ensure validity and reliability. The aim was to identify meaningful venture knowledge; capabilities and other emergent attributes that could help explain how three selected Irish case seafood firms’ developed international competitiveness. This sampling strategy used in this study followed literal replication technique and theoretical replication logic as recommended by Yin (1989). The key factor underpinning the selection of three cases was conceptual relevance rather than representative grounds so theoretical sampling was used (Miles and Huberman, 1994; Perry, 2001; Stake, 1994). Theoretical sampling occurs when cases chosen are likely to replicate or extend the emergent theory (Eisenhardt, 1989, p. 537). This sampling technique ensured that cases fit into conceptual categories and seen to enhance

their explanatory power of case data (Eisenhardt, 1989; Smith, 1991). The operational definition of the INV used in this study was each firm:

- started exporting within the first three years of operation, and
- had at least 25 per cent of sales income derived from exporting (Knight and Cavusgil 1996, Oviatt and McDougall, 1994,1996).

Sampling proceeded until theoretical saturation was achieved (See Sullivan-Mort and Weerawardena, 2006), and where “incremental learning is minimal” (Eisenhardt, 1989, p. 545). The criteria define the setting of the study and trace a framework that states the conditions under which the particular phenomenon is likely to be found (literal replication), as well as the conditions under which it is not likely to be found (theoretical replication). The characteristics of the studied case firms are shown in Table II. This sample was chosen to fulfil theoretical sampling criteria as discussed above.

4.3 Data collection and analysis

In preparing for data collection, archival data of the selected case firms, industry reports, secondary documentation, and the web sites of Irish seafood firms and of support/research associations were reviewed. For each case company five to seven on-site 60-90 minute interviews were conducted with the managing directors/owners of the case firms and marketing manager of one. The interviews were semi-structured and open-ended so the respondent MDs could reply freely in his/her own words in stream of thought without any limitation being forced on them (Churchill, 1992). The founding MDs were involved in all aspects of the business and consequently had first-hand knowledge of the firm’s strategy, operations and administration from start-up. The data collection was carried out over a sustained period of time (April 2004 to December 2004), which allowed the study to go far beyond a cross-sectional snapshot of a process and to delve into how and why things happen

as they do and even assess causality as it actually plays out in a particular setting (Miles & Huberman, 1994). The data analysis proceeded from analysing within-case data to searching for cross-case patterns (Eisenhardt, 1989). This allows the unique patterns of each case to emerge, which in turn are generalised across cases. Emergent findings were linked to the extant literature, thereby enhancing internal validity, generalizability and theoretical level (Eisenhardt, 1989).

4.3.1 *Explication interviewing in CIT*

Critical incident technique was used to analyse case findings and, to capture empirically the capability building processes of the case firms. A sample of critical incidents was selected to demonstrate capabilities critical for developing the firms' competitiveness through the experiences of the case founders/MDs. When respondents identified specific events relating to the research questions they were asked to recount of the 'critical incident' and to help to understand its nature and consequences (Chell, 2004; Cope and Watts, 2000). Explication interviewing was employed to overcome bias problems (Urquart et al., 2003). Explication is a 'thorough and specific set of guidelines...which, in emphasizing how data can be gathered and in providing theoretical grounding for why this should be so, also offers an interesting tool for examining purposes in gathering qualitative data' (Urquart *et al.*, 2003, p. 66). The explication-based interviewing protocol was developed to collect retrospective data. The interviewee was required to enter a state of evocation and to relive the experience, experience anew rather than just narrate the event. Hence, a non-directive approach of explicative interviewing was used in the interview technique of this research (Urquart *et al.*, 2003). Industry officials who worked with the case firms were also interviewed to minimise retrospective bias of main interviewees (case founders/MDs).

5. CASE FINDINGS AND DISCUSSION

This research seeks to gain exploratory insights into how traditional low-technology INVs develop competitive advantage and their strategic attributes underpinning successful and rapid internationalisation. In accordance with the literature review, the case findings are organised and discussed under the following headings: 1) the founder-manager's prior knowledge base and capabilities and 2) the unique resources and capabilities of the firm. Building on case findings and extant studies, a conceptual framework (Figure I) is proposed as a basis for future research for exploring dynamic capabilities in INVs in both high- and low-tech sectors.

5.1 The Founder-Manager's prior knowledge and capabilities

5.1.1 Objective capabilities: Generalist experience

None of the case entrepreneurs possessed prior international experience when forming their export ventures. The motivation for starting the new venture was primarily market conditions coupled with large foreign demand. Prior to forming the INV, two of the three founders possessed a broad range of technical, start-up and marketing experience from managing previous local ventures. In relation to technical knowledge, an understanding of the development and production of the product was critical for the founders at start-up. Prior to starting-up, Case B founder was the commercial director of an R&D venture in the breeding and production of shellfish products. He says:

'I have worked in it from the breeding point of view to the farming point of view to the marketing point of view ... and am one of the few people in the country that has the experience of breeding shellfish, I take it from sperm and egg to the table literally ... That has been a help to me as well.'

Case A and C had both several years' technical experience from working in the sector with seafood products. Prior to start up, Case A founder was already an experienced businessman, owning a retail clothing business. He had been involved in setting up salmon

hatcheries a few years previously. This was a sideline venture to his main clothing business at the time, but he still had a passion for seafood, he says ‘I have also wanted to farm the sea since a young lad’.

Notwithstanding the importance of international work experience for INVs, none of the founder-managers worked abroad prior to start-up; however, they possessed certain types of experiential knowledge at start-up that was useful to their internationalisation process. Two out of the three case firm founders at start up were typically generalists (Oviatt and McDougall, 1994; McDougall *et al.*, 2003), with a broad range of technical, marketing and start-up experience. As Case C withdrew from internationalisation after its first year of start-up, the findings suggest that the absence of such generalist experiential knowledge in terms of marketing and start-up experience contributed to its initial failure. The founder says ‘we were simple fishermen; we were naive: new to the game’.

When the firm re-internationalised several years later, the founders having acquired generalist experience of operating a domestic venture, it proved to be extremely successful. The contrasting stages of internationalisation in this one case reinforce the argument that case founders are required to be generalists rather than specialists for successful internationalisation.

The findings here conclude that possession of generalist experience of the INV founder at start-up is of strategic benefit (a critical success factor) to the internationalisation of the new venture (McDougall *et al.*, 2003). Figure I depicts that the ‘generalist’ experience of the founder emerges as an important objective capability to build the international competitiveness of the new venture.

5.1.2 *Subjective capabilities: Internationally proactive networkers and market-focused learners*

As shown in Figure I, two subjective capabilities emerge across the case evidence: proactive networking capabilities and market-focused learning capabilities. Table III presents interview quotations from case founders, displaying their highly focused on learning about foreign markets. A seafood industry executive who worked with the three case firms says:

‘The product, you need the drive to develop, work and travel a lot, and they need to be out there. It’s a small family network of firms, it’s very high contact business ... it’s just seafood; it’s the passion with seafood.’

A sample of incidents (Table IV) illustrates their capacity of the case founders to be highly proactive networkers across borders. The incidents demonstrate how the founders built, leveraged and mobilised their international networks to acquire the foreign market knowledge, know-how, technological capabilities, finance and resources that they did not possess.

INSERT TABLE III and IV HERE

Proactive networking capability: the findings suggest that a key factor is the founders’ capability to exploit network ties for accessing and developing critical resources. The evidence supports the founders’ high use of networks to compensate for a lack of financial and knowledge capabilities as well as leverage resources for knowledge of opportunities (Loane and Bell, 2006). The founders of INVs have utilised these network relationships to obtain information, resources, capabilities and the access to exchange partners for market entry required for rapid internationalisation (Dana *et al.*, 1999). The case findings support Westhead *et al.* (2001), suggesting that the external resources and capabilities mobilised by an entrepreneur have an important impact on the ability to enter export markets. Thus, to some degree, the findings support Coviello and McAuley’s (1999) assertion that internationalisation depends not only on an organisation’s set of network

relationships but also on the entrepreneurs' capabilities to exploit such networks (Zucchella *et al.*, 2005).

The unique ability of the founder to mobilise and use networks for advantage constitutes a strategic capability (Teece and Pisano, 1998; Sullivan-Mort and Weerawardena, 2006). This research supports the assertion that leveraging these capabilities and building a strategy through knowledge-based assets can explain the international growth for the firm (Kuivalainen and Bell, 2004). This capability cannot be boxed; nor is it static. The ability to exploit networks is a dynamic one: if done well, it constitutes a strategic dynamic capability for these firms (Sullivan *et al.*, 2006). Given the limited resource base and highly competitive market, these firms see it as essential to mobilise networks for information, knowledge and resources and, where there is potential, a strategic collaboration (Welch, 1992) – as witnessed in the case findings.

This research suggests that the extent to which these network resources are mobilised very much depends on the entrepreneur's ability to exploit and pursue them. This finding supports and builds on Oviatt and McDougall's (1994) assumption that the founder possesses a 'constellation of skills and competencies' (p.476). This finding is important, as entrepreneurs use their networks as a means to overcome resource and knowledge deficiencies (Young *et al.*, 1999). This study concludes that INV entrepreneurs can possess the dynamic capability to progressively seek resources and build capabilities using their external ties, as their limited resource base necessitates (See Figure I).

Market-focused learning capability: Similarly, as proactive networkers for resources and knowledge, the case owner-managers emerge as highly market-focused learners who actively acquire and respond to market information on new markets and customers. Market focused-learners also follow a market-orientated path, defined as the acquisition, dissemination and responsiveness of market intelligence to serve customer needs for value

creation another source of competitiveness (Cadogan *et al.*, 1996; Kwon and Hu, 2000). Market-orientated behaviour displayed by the case founders renders their ventures more conducive to sustaining competitive advantage for foreign market entry and growth. Through their shift in focus from low value to high value end products (via product diversification) the case firms were capable of unlearning and relearning in responding to market opportunities. These findings concur with the view that a market-focused learning capability of the INV founders is important for developing competitive advantage on international markets (Weerawardena *et al.*, 2007).

5.2 Firm resources and capabilities

The findings show that the resources and capabilities enabled the case firms to deliver a value-added product and enabled them to respond to and adapt quickly to changes and developments in their market environments.

First, findings show that the case firms possess unique tangible resources such as location and physical location where raw materials are sourced and produced. Secondly, the intangible assets such as knowledge acquired by the founders' commitment to actively researching and developing new products and developing R&D capabilities in logistics and production enabled product diversification and the ability to deliver to distant markets. The case firms embraced strong customer orientation and relationship-building strategies, which led to more competitive and sustainable market offering. The findings on each of these core activities is presented and analysed below.

Unique marine resources: For the three case firms, unique coastal location emerges as is a firm-specific advantage, given the necessity to be located near the raw material and in a suitable marine environment from which the product is sourced. When discussing his competitiveness abroad and ability to win clients, Case B founder says:

‘My grade is the top ... I have Grade A waters certified by the Union (EU) and that is a very important selling point for me. Anywhere in the world ... so I am green, organic ... that makes it easier for me to say in Kualalumpar wherever it is to say, “I can guarantee you top class Grade A” ... Whatever it is.’

For Case B, the waters in his Bay can add value to his products. He says:

‘My waters would act as purifier ... I might buy in stuff from grade B waters and then upgrade them to grade A with my waters.’

Also in terms of supply of raw material, all firms have unlimited supply via possession of, and close proximity to, locational-based resources. This unique physical resource has also been a key selling point and indicator of the quality and freshness of their product as perceived by foreign clients; it is vital to their brand reputation.

According to the Case C founder, the firm needs to be located close to fishing grounds; otherwise, he says:

‘What reason would we have to be here, located in an extremely remote rural, coastal area inaccessible to [the] main commercial centres?’

He emphasises that location and access to raw material is a key selling point on international markets:

‘Quality is a big one ... We have a quite a resource here, which is very important... And further emphasises the criticality of this resource, by saying: ‘If we lose our raw material source, we are finished.’

The case findings suggest that the case firms possess unique tangible resources (physical location) that allow them to acquire competitiveness abroad (Barney, 1991). This resource is unique and difficult to imitate, and it provides them not only with access to raw materials but also with a clean, green image of producing their products in their natural marine environment. For these INV seafood firms, the fact that the founders strategically manage the unique physical marine location is shown throughout the empirical findings.

R&D in logistics and NDP: The case firms show a commitment to adding value to the core tangible product through their own knowledge and skills and leading and developing the R&D capabilities across three operational areas: 1) R&D in technology for

international logistics 2) R&D in new product development and 3) advanced production technologies which will be discussed in next section in the context on the firms' product diversification strategies.

Firstly, case B delivers fresh and live product and must ensure that the product is intact on arrival. Case B founder had been collaborating with Trinity College, Dublin on two R&D projects related to the technology for the transportation of live animals over long distances to places such as Hong Kong, China and Dubai (see Table IV also). That research has benefited Case B significantly by enabling product to be delivered to China, Dubai, etc., live and intact to the client. He says:

‘So technology has played a role ... and I am currently involved in a (second) R&D project with TCD...China is an extremely difficult market to penetrate in terms of logistics ... I know China very well having researched and worked over there’.

Case B founder says:

‘I was able to land live produce from the bay to Beijing, which hadn't been done before ‘Having worked on research I am able to ensure that stuff can get out there. Some of it has come from R&D innovation.’

Second, despite the traditional low-tech nature of these firms, the firms have recognised the criticality of ensuring they are hands-on in R&D on food quality and new product development. In terms of product development, it is important that Case A and C have had in their own R&D units. The changing and evolving nature of the seafood processing market has meant that these firms have had to be very active in product innovation and improvement. They continue to look for new ways to maintain product quality and freshness over long distances and also developing new variations of their product. Case A founder says:

‘commodity or not, quality and reputation for it is critical to surviving for exporting’

Case C had acquired substantial technical product and production know-how, which allowed them to develop a market in Ireland for their product where none previously existed. They invested in an R&D unit for developing new products and improving current ones.

Expertise and specialised product knowledge have allowed them to gain competitive edge in the area of product shelf life. He says:

‘pasteurisation is a trade secret. And I asked people about it and then worked back in R&D department ... trial and error, and picking people’s brains. People are wondering how am I getting thirty days shelf life on crab at the moment, that’s a trade secret ... so going to trade shows has increased the technical and product knowledge’.

Therefore, case firms all offer a product in which unique knowledge resources are developed and embedded to provide added value. They have added value to their product by proactively engaging in R&D activities to improve the quality of their product (Buckley & Casson, 1976; Bonaccorsi, 1993; Kimuara, 1989). This research supports extant research asserting that INVs compete on products differentiated with regard to quality and value created through innovative technology and product design (Knight, 1997; Rennie, 1993;). Such resources and capabilities are manifested in the value-added products and supports the idea that quality is a source of competitive advantage in INVs (McKinsey and Co, 1993; Rennie, 1993). Product quality and product uniqueness can be positively related to international competitiveness (Kaynak *et al.*, 1987; Rennie, 1993). In addition to unique physical location, the core resources of the case firm are also intangible with competitive advantage is derived from unique knowledge possessed by the intellectual and human capital of the firm (Oviatt and McDougall, 1994). This underlines the importance of the dynamic capabilities view of the firm (Grant, 1996; Kogut and Zander, 1992) for these INVs, despite their traditional low-tech nature.

5.3 Adaptability via Product diversification

All three firms have engaged in product diversification through extending product lines, adding new ones, and developing new customer markets by targeting the downstream client in retail. Product diversification has enabled international market growth and has added value to the firms as a whole and has enabled them to penetrate and expand into new foreign markets. Identification and acquisition of advanced production technologies by founders enabled the firm to diversify the product portfolio to capture lucrative and more value added retail markets for growth. Case A was able to develop to new products and move into new global customer segments by using production technologies in food processing with the result of an increased turnover from 1 million Euros in 1995 to 4 million Euros in 2003. The founder says:

‘Our whole business has shifted from fresh ... since then and our growth from 1 million up has been with these added value products.’

One seafood industry support agency executive says :

‘(through) Product diversification and constant work, they have moved away from what they started with ... by diversifying.’

Case C also diversified into offering a more value-added product to retailers abroad. New machinery facilitated the production of the wider variety of product that has enabled them to become more effective abroad. The founder realised that extending the product to offer a greater variety of quality shellfish would make it more attractive on foreign markets. It extended its product lines to be able to enter foreign markets such as France, Spain and Greece.

What has emerged across the case material is that product diversification is a core part of their internationalisation strategy. The product diversification strategies impacted market expansion and penetration through extending product lines, adding new ones, and

developing new customer markets by targeting the downstream client of the retail chains. Product diversification demonstrates a strategic response to market intelligence acquired for new market development and new customer channels (Nooteboom, 2002; Teece, 2000). Product diversification into more value-added products has led it to extend its foreign customer base and hence grow internationally. Knight et al. (2000) found that advanced production in technologies enabled rapid internationalisation to their larger seafood exporters.

The findings support Sharma and Blomstermo (2003), concluding that INVs improvise, adapt and show a willingness to learn the needs of the individual buyers and the local distribution channels. Adaptability is of strategic importance, as these firms can be hampered by constraints and thus may require adaptable routines to serve diverse and rigid foreign markets (Sharma and Blomstermo, 2003). This research concludes that international small firms have flexibility to adapt to rapidly external market conditions and circumstances (Sharma and Blomstermo, 2003; Rialp *et al.*, 2005). That these firms can adapt and renew themselves in international markets and for survival renders adaptability as a dynamic capability (Teece *et al.*, 1996) and a strategic attribute of the case firms (See Figure 1).

5.4 Customer orientation

The findings show that customer orientation and relationship building are part of their core competency and competitive strategy in all three case firms. Customer-orientated strategy emphasising customer needs, satisfaction and service is a competitive attribute and adds value to the firm's market offering in the eyes of its customers. All the case firms have developed close relationships and, for two of the case firms (Case A and Case C), strategic international buyer-supplier partnerships have been an important part of relationship building.

Case B founder sums up what it means to be a customer-oriented business and says that it is a critical success factor for his business. He says:

‘Your success or failure in sales depends on the relationship you build with your customers, can you deliver, can you deliver what he wants, can you deliver on time, and can you deliver to the standard?’

Case A founder has developed long-term relationships with his agents, but at the same time, he says:

‘I always try to meet the customer ...I take ownership of the market. I can’t rely on agents. I want to know the user of my product ... If they don’t like it, I ring them and ask what was bad about my product ... I’ve a very personal relationship with the customer’.

Customer relationship-building and orientation is a well-founded capability in the INV literature (Jolly *et al.*, 1992; Larimo, 2001; Aspelund and Moen, 2001; Zucchella, 2002). Customer service is also identified as a source of differentiation for the case firms (Beamish *et al.*, 1993). This research concludes that the INVs’ customer orientation, promoted by the founders’ close relationship-building and commitment to client satisfaction, is part of the overall market offering. This research also concludes that the theoretical foundations of these firms lie in the RBV and KBV, given the intangible nature of the founders’ relationship- building capabilities (See Figure I).

INSERT FIGURE I HERE

5.5 Conceptual Research Framework

The dynamic capabilities theory provides interesting insights into how low technology export ventures develop and sustain competitiveness in foreign markets. This study proposes a conceptual research framework (Figure 1) for further testing on INVs from both high- and low-technology sectors.

As shown in Figure I, the key personal attributes of the entrepreneur are identified as core individual ingredients for successful development and management of unique tangible and intangible resources for a new venture's international competitiveness. The founders' objective and subjective capabilities emerge as a key source of competitive advantage through the strategic management, development and reconfiguration of a new firm's resources capabilities for sustainable competitive advantage in very turbulent, demanding and competitive global sector. This research suggests that INV entrepreneurs-managers are central to this process irrespective of sector. They can appropriately adapt, integrate, and re-configure internal and external organisational skills, resources, and functional competencies to develop competitive advantage and respond to changing environments (Pierce *et al.*, 2001).

For the studied case firms, the INV founder/MD's strategic management of their unique marine resources (physical location) and their intangible resources and capabilities (R&D, operational capabilities and customer orientated strategies) allowed the firm to acquire competitiveness abroad (Barney, 1991; Grant, 1996). The internationalising firms investigated in this research were found to mobilise unique, interdependent resource stocks (Reid, 1983); however this study shows such mobilisation occurred through the INV founder/MD in case firms (Harveston and Davis, 2001; Harveston *et al.*, 2000; Weerawardena *et al.*, 2007). As depicted in Figure I competitive value-added offerings can stem from the INV founders' management of unique tangible and intangible resources of the firm. In terms of the case firms, they possessed unique tangible resources such as location and physical environment where raw materials and product are sourced and produced. Secondly, the intangible assets such as knowledge acquired by the founders' commitment to actively researching and developing new products, logistics and production technologies as well as the aggressive adoption of strong customer orientation and relationship-building

strategies with exchange partners render a more competitive and sustainable international market offering.

The case firms have also demonstrated their high capability to adapt to foreign markets for competitive advantage. Adaptability is shown by the founders' capabilities to innovate via adoption of product diversification strategies for growth and expansion and also to quickly adapt to rigid customer requirements in foreign markets. The dynamic capabilities view of the firm can also help explain an INV's adaptability and flexibility in managing changing and diverse markets, under the leadership and management of their founder-managers.

6. CONCLUSIONS

This study set out to explore how INVs in a traditional low technology sector developed competitive advantage, and to identify their strategic attributes for attaining this competitiveness on international markets. This research supports both the perspectives of dynamic capabilities and the RBV for explaining competitive advantage in INV. In support of Castanias and Helfat (2001) view that managerial resources are critical for acquiring economic rents from firm resources, this research posits that objective and subjective capabilities of the INV founder/managers are even more central to our understanding and explaining how INVs in traditional low-tech sectors acquire international competitiveness.

The case entrepreneurs' objective and subjective capabilities embedded within the firm helped mobilise external networks for market, operational capabilities and finance. The greater the founder's capability to mobilise networks, the greater the access to resources and capabilities. This study supports the dynamic capabilities perspective (Teece *et al.*, 1997) in an entrepreneurship-networking context. This also further strengthens the idea that international entrepreneurship is concerned with dynamic pursuit for resources and using networks for international development irrespective of sector.

6.1 Implications

A number of implications have emerged for policy makers and managers from this study. Knowledge has always been considered as more relevant to high-tech sectors of the economy, and to science-based activities, especially in respect of ICT and biotechnology (Kreinsen *et al.*, 2003). Recent debate has shifted to how knowledge is an increasingly important resource for low- and medium-technology sectors (LMTs), to gain competitive advantage (as illustrated by the case firms) (Hirsch-Kreinsen, 2008). Similarly, researchers have argued that the most basic mistake in high-tech models is the tendency to identify R&D activities with technology based industries, and hence to see high-level R&D activities as the sole standard bearers of the knowledge economy. Promoting 'low tech INVs is therefore a major challenge for national government policies aimed at driving innovation and enterprise research targeted at rural and peripherally located internationalising enterprises. Policy makers should give greater priority to the role of knowledge creation and development as competitive resources for LMT sectors.

Finally, this study would encourage small firms to draw up a capabilities portfolio of the business; and group their intangible assets into codifiable categories; and assess their current and potential use, especially in terms of their capacity to add value to the business. A capabilities management framework would facilitate the creation and development of new knowledge and capabilities in relevant areas of the business, and would also facilitate the changing and modifying of knowledge. Such an organising framework would also provide a co-ordinated approach to managing these strategic resources. This framework would also require managers to recognise the dynamic and evolutionary nature of knowledge and capabilities as a means of responding effectively to their international markets.

6.2 Limitations and further research

The nature of the research merits qualitative research as the chosen methodology. However, this study is not without its limitations. This study has been limited to a single industry sector, and to respondent companies from just one country and one sector – Ireland and seafood respectively. Drawing on the dynamic capabilities and RBV theories the proposed conceptual framework in this study offers a basis for future studies to explore INVs operating across diverse empirical high and low-tech industry contexts.

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Table I Key strategic attributes of International new ventures

Entrepreneurial attribute	Author	Firm attribute	Author
Global orientation of founder international work experience	Ganitsky, 1989; Jolly et al., 1992; Knight & Cavusgil, 1996; Knight, 1997; McKinsey, 1990; Eriksson, Makjgard & Sharma, 1997; Servais & Rasmussen, 2000; McDougall & Oviatt, 1995, 1994, 2003; Harveston et al., 2000; Larimo, 2001; Pulkkinen & Larimo, 2002; Saarenkeeto et al., 2003; Moen, 2000, 2001; Rialp et al., 2002; Aspelund & Moen, 2001; Fletcher, 2000; Knight 2001. Andersson & Evangelista, 2006	Superior technology & high knowledge intensity	McKinsey & Co., 1993; Bloodgood & Sapienza, 1996; Oviatt & McDougall, 1994; Larimo, 2001; Jolly et al., 1992; Rialp et al., 2002; Bloodgood et al., 1996; McDougall et al., 1994; Larimo, 2001; Rialp et al., 2002; Sapienza, Autio & Almeida, 2000; Zahra et al., 2001; McKinsey, 1993; Bloodgood & Sapienza, 1996; Jolly et al., 1992; Johnson, 2004. Keeble, 1999
Strong international business networks prior to inception	Larimo, 2001; Madsen & Servais, 1997; Oviatt & McDougall, 1994; Loane & Bell, 2006; Andersson & Evangelista, 2006	Global niche market strategy	Larimo, 2001; Jolly et al., 1992; Madsen, Rasmussen & Servais, 2000; Zuchella, 2002; Moen, 2002; Aspelund & Moen, 2001. Madsen & Servais, 1997; Bloodgood et al., 1996; Oviatt & McDougall, 1994; Knight & Cavusgil, 1996; Knight, Bell & McNaughton, 2001; Servais & Rasmussen, 2000. Rennie (1993); Keeble et al., 1999;
Experiential industry knowledge	Larimo, 2001; Wickramasekera & Bamberry, 2001; Rasmussen et al., 2001.	Customer orientation	Jolly et al., 1992; Larimo, 2001; Aspelund & Moen, 2001.

Table II: Characteristics of Case companies

Case	Respondant(s)	Activity	Turnover	year established	year 1 st export	% of export sales	Export Markets	Number Employed	Mode of entry
A	Founder/MD Marketing Mgr	Seafood processor	4 Million E	1985	1985	99%	Europe, US Japan.	40	export via agents
B	Founder/MD	Live seafood	2 Million E	1998	1998	100%	Europe, China	3	export to Hotels, caterers.
C	Founder/MD	Seafood Processor	10 Million E	1988	1988	50%	Europe, US	90	export via agents

Source: Fieldwork from 2004-2005.

Table III: Subjective capability: Market-focused learners

Case A	Case B	Case C
<p>‘I want to be one step ahead of the market, anticipating customer needs’</p> <p>You see somebody and you say “I can work with that person”, and you chase them.’</p> <p>‘For instance I am trying to develop four markets; I am working with Japan, as a development one.’</p>	<p>‘If I see a market I want to get into, I will get my head around it and I’ll find the information.’</p> <p>‘Every day you are faced with a challenge. If there is an end user out there I will make as many calls as I have to...’</p> <p>‘Anything that works, you make it work yourself ...’</p>	<p>‘Now they are hungry to learn hungry to get out there.’</p> <p>‘If you don’t have vision, if you don’t know where you’re going ... you’ll never get there.’</p> <p>‘At the moment turnover is 30% our export sales ... I can tell you now our focus now is through probably getting our turnover to least half foreign sales in two or three years’</p>

Table IV: Subjective capability: Sample of events illustrating the Case founders' mobilisation of network ties for knowledge and resources.

CASE A

Year	Event	Description of event	Outcome
1992-1995	Product development and customer involvement in product development	Via a business contact of Founder, latter developed partnership with French company in final stages of new product development.	Knowledge resources via product collaboration; foreign market knowledge
2000	Global fact finding mission:	Faced with imminent closure due to toxins in raw material, case personally visited his international contacts in New Zealand, Canada, Chile, and Denmark in search of new product ideas to get him out of imminent firm closure.	foreign market knowledge;
2000	International Retail Product Partnership-informal business tie	In 2000, founder approached French industry tie of his to collaborate in retail product agreement to supply him retail product for French market under the French client's brand name.	New market segment
2002	Acquisition of knowledge capability in NPD via business tie	In 2002, while visiting a supplier in Canada, founder was referred to new product development contact from Scotland, Bob. He worked with founder for year to develop a new product range. Bob now works as agent for Case A in UK.	NPD knowledge capabilities
2003/04	Acquire knowledge capability via Norwegian collaboration	Founder pursued business partnership for technological transfer with Norwegian salmon manufacturer met at a trade show in 2001.	Technological capabilities in production

CASE B

2000	R&D Collaboration	Case B founder collaborated in two R&D project with Irish university & Industry rep for lowering mortality of product and improving transportation of live animals for the industry	R&D leading to successful long distance transport; financed and managed by Irish seafood agency
2000	Foreign market knowledge in Chinese markets	Garvey pursued opportunities in China when alerted by industry newsletter he proceeded to contact his Irish ties working in catering sector in Beijing for knowledge of the Chinese seafood market China	Foreign market knowledge

CASE C

1999	Canadian crab machine via local exporter	Through a local exporting firm and friend of founder's, Firm sourced machinery in Canada, which would allow Firm enter new product markets.	Technological capabilities
2001-2001	Entry into France via Irish Industry rep Paris	Case C contacted Seafood agency to facilitate sales acquisition with a large French client and to subsequently assist with operational market knowledge for French client.	Exchange partner; knowledge capabilities
2004	Identification of Spanish clients	The founder contacted the Spanish Industry executive he met at the Brussels trade show in 2004. Within a few weeks the executive in Madrid lined up three big customers.	foreign market knowledge and capabilities

FIGURE I: CONCEPTUAL RESEARCH FRAMEWORK

‘DEVELOPING DYNAMIC CAPABILITIES FOR COMPETITIVE ADVANTAGE IN INTERNATIONAL NEW VENTURES’

