



Master Thesis

Capability Configuration of Dutch High Tech SMEs and Startups for International Performance

Daniel M.D. Heering
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Supervisors:
Dr. R. Harms
Dr. R.P.A. Loohuis

Faculty of Behavioural, Management,
and Social Sciences
University of Twente
P.O. Box 217
7500 AE Enschede
The Netherlands

UNIVERSITY OF TWENTE.

Management Summary

Purpose - There has been an increase in research into the relationship between capabilities and firm (international) performance. Most of the results found in the current research show that there is a positive effect of capabilities on firm performance. Although this is the case a more extensive analysis is needed to uncover the effects of capabilities on firm performance, as well as the interaction between different capabilities. Therefore this research is on finding underlying configurations of capabilities that enable Dutch high tech startups and Small and Medium Enterprises (SMEs) to reach a high level of international performance.

Methodology - To gather the data different Dutch high tech SMEs and startups who have international revenue were contacted to fill out a survey. The survey consisted of six variables which were measured using a 5-point Likert scale. This survey was filled out by a manager of the firm and done during either a face to face meeting with the companies or through an online version of the survey. To analyse the data and to generate the configurations of capabilities the (fuzzy set) Qualitative Comparative Analysis (QCA) method was used. Lastly five semi-structured interviews were held with companies that are part of one of the found configurations to acquire further information about the firms capabilities.

Findings - Four different configuration of capabilities are presented that enable Dutch high tech SMEs and startups to achieve high international performance. As well as market characteristics for each configuration is described.

Theoretical Implications - This research has two main contributions to the existing literature. Introducing the fuzzy set QCA method to the literature of international entrepreneurship and supplying four configurations of capabilities that enable high tech startups and SMEs to generate international performance.

Practical Implications - The results can benefit high tech startups and SMEs to get an insight on which capabilities are important for them to gain international performance.

Keywords: Substantive Capabilities, Dynamic Capabilities, Marketing Capabilities, Technology Capabilities, Networking Capabilities, International Performance, High tech SMEs and Startups

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List of Abbreviations

SME	Small and Medium Enterprise
QCA	Qualitative Comparative Analysis
fsQCA	Fuzzy set Qualitative Comparative Analysis
SMC	Substantive Marketing Capabilities
DMC	Dynamic Marketing Capabilities
STC	Substantive Technology Capabilities
DTC	Dynamic Technology Capabilities
SNC	Substantive Network Capabilities
DNC	Dynamic Network Capabilities
CEO	Chief Executive Officer
CFO	Chief Financial Officer
KMO	Kaiser-Meyer-Olkin
VR	Virtual Reality

1. Introduction

1.1 Background Research

There has been an increase in globalisation accelerating around the world. This means that companies go abroad to do business compared to the country they originated from. At first only the larger companies did business internationally, however due to innovations in technology over the last couple of decades, it has become easier to communicate and travel around the world. These innovations in technology have given people more international business experiences. Because of the increase in international business experience and innovations in technology, doing business internationally is not only for larger firms but also becoming more popular for younger and smaller firms to internationalise (Oviatt & McDougall, 2005). Even though these smaller firms have limited financial, human, and other resources, these smaller global firms play a substantial role in international business (Weerawardena, Mort, Liesch, & Knight, 2007). This trend has also captured the eye of numerous scholars and researchers which has resulted in an increase in studies into the phenomenon of early and rapid internationalisation of startups and SMEs and how they manage to perform well (Knight & Cavusgil, 2004; Oviatt & McDougall, 2005; Zhou, Wu, & Luo, 2007). Most research on the performance of firms pertains to a central theme around the capabilities of the firm (Knight & Cavusgil, 2004). The kind of capabilities examined in the current literature varies, some examples being marketing capabilities (Dutta, Narasimhan, & Rajiv, 1999; Martin, Javalgi, & Cavusgil, 2017; Kotabe, Srinivasan, & Aulakh, 2002), innovation capabilities (Guan & Ma, 2003 and Ribau, Moreira, & Raposo, 2017), information technology capabilities (Zhang & Tansuhaj, 2007), networking capabilities (Kenny & Fahy, 2011 and Mort & Weerawardena, 2006) and dynamic capabilities (Arthurs & Busenitz, 2006 and Lin & Tsai, 2016).

Researchers have also found that some capabilities interact together to improve firm performance (Dutta et al., 1999). Other scholars have found that although there is a significant growth in studies on capabilities and performance, they lack consensus and robust empirical evidence. It is not clear in which conditions the positive effects of capabilities on performance are realised (Jantunen, Tarkiainen, Chari, & Oghazi, 2018). Although this is the case, the overall argument in capability research is that a firm will not automatically gain performance benefits from capabilities, but they should be able to positively influence the competitive advantage and the performance of a firm (Pezeshkan, Fainshmidt, Nair, Frazier, & Markowski, 2016).

In their review paper about dynamic capabilities Schilke, Hu, and Helfat (2018) have insisted that more research is needed into the complementary and substitution effects of the different capabilities as well as the effects between dynamic and substantive capabilities. They also suggest the use of more mixed-methods research when examining the role of capabilities on performance. Until now most studies have used either qualitative or quantitative approaches. Combining the two can provide deeper insights into the function and role of capabilities (Schilke et al., 2018). The research done by Jantunen et al., (2018) also agrees that more extensive analysis is needed to uncover the effects of capabilities on firm performance. More research is needed in to which conditions the capabilities have a positive effect on firm performance, as well as how substantive and dynamic capabilities work together (Jantunen et al., 2018).

The purpose therefore of this study is to find the underlying configuration of capabilities that enable Dutch High Tech start-ups to reach a high level of international performance. The objective of this research is to find out which configuration consisting of marketing, technology and networking capabilities (divided in dynamic and substantive) are important to have to allow a Dutch High Tech company to perform well in international markets.

This results in the research question:

What are the configurations of capabilities that enable Dutch high-tech based international startups and/or Small & Medium Enterprises (SMEs) to reach a high level of international performance?

To answer this research question, a sample of Dutch SMEs and start-ups in the high tech sector, that also have international sales was used. The high tech sector was utilised in this study because previous research has shown that high tech companies internationalise rather early (Tanev, 2012 and Kudina, Yip, & Barkema, 2008). The high tech sector is also known to be dynamic with rapid changes in the business environment. The data for this research was collected with the use of a(n) (online) survey, which was completed by a manager within the high tech firm. The data gathered was analysed with a QCA (Qualitative Comparative Analysis) method to generate the configurations. Four different configurations of capabilities were found to have a positive effect on international firm performance. The results of this research may be beneficial for companies as it provides an idea of the configuration of capabilities that may be important to have in different high tech markets. This study may also be beneficial to provide insights on how capabilities work together to increase international firm performance.

1.2 Thesis Outline

This paper is organised into 5 chapters and structured as follows:

In the chapter above, the study was introduced along with the formulated research question. Following this, the theoretical framework will be discussed, and current literature reviewed on the importance of international firm performance for SMEs and startups, how capabilities influence firm performance, what capabilities are, and the difference between dynamic and substantive capabilities, and lastly what marketing capabilities, technology capabilities, and network capabilities are. This will also present four propositions that will be used in this research. The third chapter will outline the research methodology used in this study to find high tech companies' capability configurations that have a positive influence on their international performance. The analysis of data and results can be found in chapter 4. In chapter 5, the results will be discussed and a conclusion presented. The theoretical and practical implications, directions for future research, and research limitations will also be found in this chapter.

2. Theoretical Framework

2.1 Importance of International Performance for (high tech) SMEs and Startups

The performance of a firm is vital for its existence. One important way for a startup or SME to generate firm growth is to expand their business into international markets (Lu & Beamish, 2001). By doing so, a firm is able to expand their customer base, enabling a firm to achieve higher production and eventually achieve growth. For high tech SMEs and startups expanding into international markets it is especially important, and according to a study done by Tanev (2012), is due to eleven important factors. These factors that could also be applicable to the Dutch high tech sector, are: 1) the market in the home country is not large enough for a company to operate in, 2) having the most technologically advanced product is key to the firm's competitive advantage, 3) the customers' needs are fairly standard in the different countries they spread to, 4) most of the potential customers are foreign firms, 5) most potential customers have overseas operations, where they will use the firm's product, 6) the firm operates in a knowledge-intensive or high-tech sector, 7) the firm's product or service faces few trade barriers, 8) the firm's product value is much higher than transportation and other logistical costs, 9) the firm's product or service has a significant firstmover advantage or network effects, 10) the firm's competitors have already internationalized or will do so soon, and 11) the key managers have experience in international business (Tanev, 2012 and Kudina et al., 2008).

Although international expansion of a firm is an important way to generate growth and eventually higher performance, there are a lot of implications for a company to go abroad. One of the implications is the differences between domestic and international markets (Lu & Beamish, 2001). These

differences are due to cultural differences, rules and regulations. Therefore it is important for a firm to be able to adapt to changes in the markets. An important way for companies to adapt to changing markets is the use of their knowledge, previous experience and capabilities (Knight & Cavusgil, 2004).

Current literature suggests younger firms are thought to have a better position for succeeding when entering foreign markets than older firms. The main reason for this is that it is thought that when a firm internationalises earlier, it is more effective in learning from its foreign activities and less focused on how it did business in the past or in domestic markets (Autio, Sapienza, & Almeida, 2000, Carr, Haggard, Hmieleski, & Zahra, 2010; Zhou & Wu, 2014). These younger companies are more flexible and able to adapt to foreign markets, with especially software startups showing more capabilities at an earlier stage than other startups in a different market. This seems to be the case because of shorter product cycle times in the software sector compared to other industries (Strehle, Katzy, & Davila, 2010).

2.2 Capabilities

Capabilities have been described in slightly different ways in the current literature (Schmid & Schurig, 2003). Capabilities are mostly described using two concepts, namely as a concept of routines and as a level of practices (Schmid & Schurig, 2003; Kenny & Fahy, 2011). Researchers that use the phrase routines to describe capabilities, define capabilities as routines that enable specific activities to be carried out in a firm (Grant, 1991; Teece, Pisano, & Shuen 1997; Fernhaber & McDougall, 2005). When describing capabilities as a level of practices there is a difference between the activities and practices of a firm, where activities are what the company does and practices are how the company executes these activities (Solvell & Birkinshaw, 1999, p. 6; Schmid & Schurig, 2003; Kenny & Fahy, 2011). This means that capabilities are seen as the way in which a firm carries out its activities. Although these two concepts are mostly used to describe capabilities in the literature, capabilities are also seen as the intangible resources of a company. This is because capabilities are a complex array of skills and knowledge, developed and used by the processes in a firm to coordinate and make their products (Day, 1994). A similar description of capabilities is that they are a firm's ability to achieve a desired end goal with the use of its resources and firm-specific processes (Fainshmidt, Pezeshkan, Frazier, Nair, & Markowski, 2016; Narasimhan, Rajiv, & Dutta, 2006). In his paper Makadok (2001) describes capabilities as firm-specific resources that are embedded in an organisation and are not transferable to other firms. The function of these resources are to improve productivity and the other resources that are present in the firm (Makadok, 2001). Sapienza, Autio, George, and Zahra (2006) use routines and resources to describe capabilities as they are a configuration of routines and resources that allow a firm to reach its determined goals (Sapienza et al., 2006). According to Krasnikov and Jayachandran (2008), capabilities are deeply embedded in an organisation and enable a firm to effectively perform important value-creating tasks that are difficult to replicate. Although the definition of what capabilities are varies slightly in the literature, it is clear that capabilities are special knowledge and skills that a company has, that work together with firm-specific resources and processes to achieve a firm's goals.

The current literature on capabilities applies a distinction between dynamic capabilities and substantive capabilities, also referred to as ordinary or operational capabilities. Substantive capabilities are seen as capabilities that facilitate firms with explicit tasks for their core business. Some examples of core business tasks are: administration, operations, and governance (Teece, 2014a). Other researchers describe these core business tasks as best practices (Eisenhardt & Martin, 2000). Dynamic capabilities on the other hand facilitate a firm's long-term growth. This is because dynamic capabilities allow firms to keep up with the market and technological developments. Dynamic capabilities are used to keep improving and developing substantive capabilities. Teece describes the difference between substantive and dynamic capabilities as "substantive capabilities are about doing things right, dynamic capabilities are about doing the right things, at the right time" (Teece, 2014b p331). This difference between dynamic capabilities and substantive capabilities has also been defined by other researchers. For example Helfat and Winter (2011) describe in their research substantive capabilities as capabilities that enable a firm to carry out constant activity using the same techniques on their existing products

and services for the same customer population. In other words substantive capabilities facilitate a firm's ability to make a living in the present, while dynamic capabilities allow a firm to alter ways of how a company makes a living (Helfat & Winter, 2011). With dynamic capabilities, a firm can change its substantive capabilities, resource base, and initiate changes in a firm's external environment (Barrales-Molina, Martinez-Lopez, & Gazquez-Abad, 2014). Zahra, Sapienza, and Davidsson (2006) stated that a new routine to develop a certain product is an example of a new substantive capability but the ability to change this routine or substantive capability is a dynamic capability.

Although most research on capabilities is focused on substantive and dynamic capabilities there are also some researchers that state there are two types of dynamic capabilities (Collis, 1994; Schilke, 2014). The first type of dynamic capabilities is referred to as first-order dynamic capabilities or lower-order dynamic capabilities. This first-order dynamic capability is similar to the dynamic capabilities described above, which are used to keep improving substantive capabilities. The second type of dynamic capabilities are those that can be used to further develop first-order dynamic capabilities and are referred to as second-order dynamic capabilities or higher-order dynamic capabilities (Schilke, 2014; Fainshmidt et al., 2016). In a way, second-order dynamic capabilities can be seen as a learning to learn capability (Collis, 1994; Schilke, 2014; Fainshmidt et al., 2016).

Although research in the field of dynamic capabilities is one of the most central and influential in strategic management at the moment (Jantunen et al., 2018), it still lacks conceptual consensus and empirical evidence. The construct has been criticised for being mysterious and confusing, vague and elusive, abstract and intractable, obscure and tautological (Barreto, 2010). A part of this discussion in the current literature is due to differences in the two most cited articles, from Teece et al. (1997) and Eisenhardt & Martin (2000). The main difference between these articles is whether dynamic capabilities are able to provide a sustainable and competitive advantage to firms and especially for companies in a highly volatile market. Various authors have made efforts to harmonise the dynamic capability framework. In an effort to compute one framework, different suggestions have been made to come to a unified definition, including clarity around the nature of dynamic capabilities, common antecedents, and shared outcomes (e.g. Barreto, 2010; Helfat et al., 2007; Zahra et al., 2006). Despite these efforts none of these papers have been widely accepted. Scholars do agree however, that a company that has superior dynamic capabilities can strengthen and eventually improve its performance (e.g., Eisenhardt & Martin, 2000; Krasnikov & Jayachandran, 2008; Teece et al., 1997). To overcome the debate whether dynamic capabilities are able to provide a sustainable and competitive advantage to firms and especially companies in a highly volatile market Peteraf, Di Stefano, and Verona (2013) has proposed the use of capability bundles or dynamic bundles.

Dynamic bundles are described as a bundle of resources and capabilities that can work together to make a more stable element for a company necessary to gain a competitive advantage (Peteraf et al., 2013). An example of a bundle of capabilities that researchers found a firm needs in order to optimise the processes of the dynamic capabilities is a good and stable base of substantive capabilities (Karna, Richter, & Riesenkampff, 2016; Waleczek, Von den Driesch, Flatten, & Brettel, 2019; Zahra et al., 2006). These dynamic bundles are important for a firm to cope with changes in a high velocity market and also with more complex routines of a company (Peteraf et al., 2013). Some examples of these complex routines are product development, alliancing, knowledge brokering, and resource allocations. The rules and routines in the bundle can change in order to adapt to changes in the environment.

2.3 Capabilities and Firm Performance

As mentioned earlier, even though the capabilities research field has grown significantly there are still different views on whether or not capabilities provide a firm with a competitive advantage and performance success (Jantunen et al., 2018). The overall view in the literature is that capabilities are positively associated with a firm's competitive advantage and performance (Barreto, 2010). In some studies researchers found that it is more important to have capabilities than it is to have resources as company (Liao, Kickul, & Ma, 2009; Merrilees, Rundle-Thiele, & Lye, 2011). Although this is the case,

the relationship between capabilities and firm performance is a complex one and a lot remains unclear about conditions that enable capabilities to be effective, and in which configuration the most positive effects are realised (Fainshmidt et al., 2016; Pezeshkan et al., 2016; Jantunen et al., 2018), and whether capabilities are more effective in producing a competitive advantage or performance in a stable or dynamic and rapidly changing environment (Teece et al., 1997; Eisenhardt & Martin, 2000).

Some researchers have examined the relationship between capabilities and firm performance. For instance, a meta-analysis done by Fainshmidt et al. (2016) found a positive correlation between dynamic capabilities and firm performance. A similar result was found by Pezeshkan et al. (2016), who in their assessment of empirical studies on the relationship between dynamic capabilities and firm performance over nearly 20 years, found an overall positive and significant contribution of dynamic capabilities on firm performance. Although this is the case, their study showed contradicting results when comparing dynamic capability and performance relationship in a dynamic and changing environment. Some researchers found that dynamic capabilities allowed a firm to perform better during a financial crisis, while others did not find significant support for this relationship in a dynamic and changing environment (Pezeshkan et al., 2016). While Pezeshkan et al. (2016) found contradicting results, Jantunen et al. (2018) dynamic capabilities are more effective on a firm's performance in changing business environments. Other researchers such as Karna et al. (2016), found in their research that substantive capabilities and dynamic capabilities are closely related and they both increase the performance of a company. Their study also shows that substantive capabilities and dynamic capabilities have a larger effect on firm performance in a changing market environment rather than a stable environment. In a market with a changing environment there is no evidence found that dynamic capabilities are of more importance to firm performance than substantive capabilities (Karna et al., 2016). This is in line with the research of Collis (1994) who states that capabilities can provide a competitive advantage but the importance of the capability can vary for the type of industry and period in time. Other research results did not find a direct effect of capabilities on sales growth and financial solvency (Wilden, Gudergan, Nielsen, & Lings, 2013).

There are also researchers that examined the relationship capabilities have on internationalisation and/or international performance. In their paper Sapienza et al. (2006) discuss a firm in an early stage of internationalisation develops its capabilities to benefit growth first, while possible long term survival is of secondary importance. Contradicting researchers argue that capabilities are important for international expansion and gain competitive advantages in new markets (Luo, 2000; George, Zahra, Autio, & Sapienza, 2004). An example of the importance of capabilities is when a young and small firm such as a startup or SME wants to internationalise and perform well in foreign markets. In this case these smaller firms normally have less resources than competitors and need to overcome this lack of resources in order to be successful in international markets. This is when the capabilities of a company can make sure that the firm keeps innovating and developing their current knowledge and activities (Luo, 2000; Knight & Cavusgil, 2004), which can result in new innovations in product and service development, and production (Waleczek et al., 2019). This new and innovative product can lead to a competitive advantage over competitors.

Some researchers find that capabilities are important for companies to gain a competitive advantage because capabilities meet the VRIN (Valuable, Rare, Inimitable and Non-substitutable) (Barney, 1991) criteria of his framework very well (Waleczek et al., 2019). This is because with capabilities a company can distinguish themselves from the competition and it is not easy for the competition to imitate these capabilities. Having capabilities can also improve the implementation of the strategy of a firm (Guan & Ma, 2003).

2.4 Marketing Capability

Marketing capability according to the current literature is the ability of a firm to exploit its knowledge, technology and its resources to fulfill market or customer needs (Day, 1994). Other descriptions on marketing capabilities that are similar, describe marketing capability as the ability of a firm to be able to make its products and services stand out from its competitor's products and services

and using this to make the company successful (Kotabe et al., 2002; and Weerawardena 2003a; 2007). In some cases this is also called the brand of a firm (Kotabe et al., 2002). For a firm to become successful it should be able to sell its products or services. This is done by developing products or services that add value to customers and having marketing methods to sell the products or services. To do this a firm should be able to adapt to new challenges in a market by having an integrative process to gather market information, improving marketing technologies and improving its marketing skills (Lee & Hsieh, 2010; Day, 1994; Weerawardena et al., 2007). According to Day (1994), the capabilities of a company are closely related to its processes and especially with the development of new products and services distributions (Lee & Hsieh, 2010). To make the products and services of the company stand out, it can use different methods to make the brand more appealing to the market, some of these methods are using advertising and promoting products with sales (Kotabe et al., 2002).

2.4.1 Marketing Capability and Performance

There are a couple of studies on the importance of marketing capability for the performance of a firm. The first example of this is the research of Dutta et al. (1999) who suggest that marketing and technology capabilities, and the interaction between these capabilities are important factors for determining the financial performance of companies in high technology markets. This is supported by the research of Lee and Hsieh (2010), although they found marketing capabilities do not have a direct influence on a firm's competitive advantage. Marketing capabilities do have an indirect effect on a firm's competitive advantage by interacting with technology capabilities (Lee & Hsieh, 2010). Kotabe et al. (2002) also found that the relationship between marketing capabilities and technology capabilities are important factors for the performance of a firm. They found that these capabilities are also important for a successful international expansion (Kotabe et al., 2002). Marketing capabilities and network capabilities are also important factors in the capability model for born global firms as proposed by Weerawardena to accelerate their internationalisation activities (Weerawardena et al., 2007).

There are a couple of reasons why marketing capabilities are important for young firms to achieve international performance. One reason is that young firms with a strong marketing capability are able to formulate an effective marketing strategy mix with which they can identify and access international opportunities. Also these firms are able to target customers and identify their needs, and provide a good quality product (Weerawardena, 2003b). A SME or startup company can do this because they have a smaller distance to their customers than larger firms, which means that they have a better relationship with their customers and are therefore able to acquire feedback from customers (Cavusgil & Zou., 1994). These companies can therefore foresee changes in the market and respond to these changes in the market, which means they can generally benefit from a competitive advantage that provides more profit when compared to other companies (Day, 1994; Lee & Hsieh, 2010). Another way of identifying a market's needs is through the monitoring of the market environment (Deshpande et al., 1993). A high tech SME or startup also has the ability to customise their products quickly to fit the market's needs. This allows these high tech SMEs or startups to effectively and rapidly access and penetrate multiple markets with their leading-edge innovative products (Weerawardena et al., 2007).

Another advantage good marketing capabilities provide is that a firm is better able to target and position their brand or company better than its competitors. This include skills to price, promote and distribute the product or service to customers in domestic and foreign markets. This could eventually lead to better product differentiation, which can lead to better profit margins and thus better performance (Kohli & Jaworski, 1993; Day, 1994; Dutta et al., 1999).

Substantive Marketing Capability

The concept of Substantive Marketing Capabilities in this study is based on the research of Vorhies and Morgan (2005). Part of their dimensional conceptualisation of substantive marketing capabilities is used in this research. In this research the dimension of product development is not considered to be a dimension in marketing capabilities as it will be addressed under the topic of Substantive Technology Capabilities. The construct of Substantive Marketing Capabilities consists of four dimensions which are

investigated in this research and are: pricing, marketing communication, marketing planning, and marketing implementation. *Substantive Marketing Capabilities* in this paper are described as activities that the venture uses for efficient and effective execution of its marketing strategies to create value.

Dynamic Marketing Capability

For the Dynamic Marketing Capability the paper by Barrales-Milina et al. (2014) is used as a concept. This was done because in the current literature there are a limited number of articles on Dynamic Marketing Capabilities, and those that were found had a limited number of citations. In this paper *Dynamic Marketing Capability* is the ability to absorb market knowledge in order to integrate this knowledge into the rest of the organisation. This is in line with the description of Barrales-Milina et al. (2014).

In this research it is expected that as described above the bundle of marketing capabilities are an important factor of a firm's international performance. Although this is the case, the expectation is that a firm that only has a marketing capability bundle will not achieve international firm performance. Therefore this research paper proposes that the dynamic bundle of marketing capabilities can be an element of Dutch high tech startups' or SMEs' international performance, but not a sufficient component on its own. This will be referred to as proposition 1.

2.5 Technology Capability

Different phrases are used in the literature when describing technology capabilities. Some researchers use the phrase research and development (R&D) capabilities (Danneels, 2008; Dutta et al., 1999; Krasnikov & Jayachandran, 2008), while others use the term innovation capabilities (Guan & Ma, 2003, Ribau et al., 2017), and some researchers refer to technology or technological capabilities (Zhou & Wu, 2010; Waleczek et al., 2019). Although there are different phrases used to describe technology capabilities the definitions are similar. Krasnikov and Jayachandran (2008) describe technology capabilities as the ability to develop new products and services from existing technologies and the ability to invent new technologies. Therefore important factors of technology capabilities are the firms technical knowledge and design skills (Krasnikov & Jayachandran, 2008). Researchers with a similar view on technology capabilities describe technology capabilities as a firm's ability to use various technologies, technical knowledge and production skills. This also includes the technical resources of a firm, part of these technical resources are process skills, quality control programs and the skills to design and produce products and services (Yi, He, Ndofor, & Wei, 2015). Guan and Ma (2003) describe technology capabilities as the ability to develop and produce new products for a market's current and future needs. Other researchers describe technology capability as the ability to innovate and developmental capacity of new products and necessary production processes (Ribau et al., 2017). Technological capability is composed of different resources in a firm such as: skills, knowledge and experience, and internal structure to manage technical changes (Cho & Lee, 2003).

2.5.1 Technology Capability and Performance

The relationship between technology capabilities and firm performance has been examined in the literature. As mentioned before, Dutta et al. (1999) found that technology and marketing capabilities need to interact with one another to gain financial performance in high technology markets. This is confirmed by Song, Droge, Hanvanich, and Calantone (2005), whose research also found that technology and marketing capabilities positively relate to the performance of joint ventures. Similar results were found by Lee and Hsieh (2010), who found that innovations in processes and products has a direct effect on a firm's competitive advantage. In their research Waleczek et al. (2019) found that technological capabilities have a positive and significant influence on firm performance. The results of this research also showed that dynamic technological capabilities have a positive effect on substantive technological capabilities. Other researchers also found an overall positive relationship between technology capabilities and firm performance, but the impact of technology capabilities on firm performance can vary in different market conditions (Chen & Lein, 2013). This is confirmed by other

researchers who also found that technology capabilities are of greater importance in a high tech industry than in a lower tech industry (Covin, Slevin, & Covin, 1990; Fernhaber & McDougall, 2005). This is because with technology capabilities a firm can develop their current or new products and services, which companies in a high tech industry need to do more frequently because of shorter product cycle times in high tech industries compared to other industries (Strehle et al., 2010). The result that technology capabilities are important in a high tech industry is not confirmed by Song et al. (2005), who in their research found a positive effect of technology and marketing capabilities on firm performance regardless of technological turbulence in the markets. While a lot of researchers found a direct effect of technology capabilities on firm performance, Yi et al. (2015) found that technology capabilities have an indirect effect on firm performance. This is similar to the research of Yu, Hao, Ahlstrom, Si, and Liang (2014), who found that technology capabilities have a significant and positive effect on performance of new product development, which leads to firm growth and a competitive advantage.

The effect of technology capabilities on the internationalisation of a firm has also been researched. Kotabe et al. (2002) found that the interaction between technology and marketing is necessary to successfully expand internationally as well as increasing firm performance. These results are similar to the research done by Guan and Ma (2003), who also found that technology capabilities and marketing capabilities have a positive correlation with (international) export growth. In the research done by Ribau et al. (2017), it was found that innovation has a direct and positive relationship with export performance when a firm is proactive in a market. The results show a different result with firms that are reactive in a market. With these firms the relationship between innovation and export performance is negative. Although this is the case innovation does have a positive indirect relationship to export performance (Ribau et al., 2017).

There are other important advantages of having technology capabilities. Firms with a good technology capability have the ability to continuously improve their technological knowledge and their products, making these firms able to adapt to market changes and also make their current product fit the market and their customer's needs better (Zahra & Gravis, 2000; Zahra, 1996; 2000). This high level of technological capabilities and adaptability makes it easier for firms to operate in different countries (You et al., 2007) and therefore these firms can be expected to go abroad sooner (Dunning, 1993; Hennart & Park, 1993). A key characteristics of a high tech SME or start-up is normally that they use advanced technology, develop new products and are able to quickly respond to changing market demands. Some researchers also found that companies with good technological capabilities have improved learning skills leading to incremental innovations of a product. This makes these companies more appealing for other companies to work with. With this partnership companies can gain access to assets and resources to sell more of their new product (Zhou, Barnes, & Lu, 2010). Researchers also found that compared to larger companies, SME's and start-ups rely more on the effect of innovation and internationalisation in order to grow and be successful. (Ribau et al., 2017). SMEs and startups therefore generally use their technology capabilities better than larger firms because they must introduce better products to position themselves in the global market (Rhee, 2008).

Substantive Technology Capability

Substantive technological capabilities according to Waleczek et al. (2019) refers to the ability of a firm to acquire the right technological knowledge and apply this knowledge to improve or develop products and services to sell in a market (Waleczek et al., 2019). This and other literature was used in the literature research of Jie & Harms (2018), which eventually described *Substantive Technology Capability* as the usage of existing technology with existing innovation processes to engage in incremental innovation. When comparing this to the above described literature on technology capabilities and (substantive) capabilities, this is an accurate description of what substantive technology capabilities are.

Dynamic Technology Capability

Research into the topic of dynamic technological capabilities has increased in the last couple of years (Chen & Lein, 2013; Danneels, 2008; 2012; Yi et al., 2015). Dynamic technological capabilities are related to the behaviour of an organisation to identify and implement new technologies in a firm. This firm behaviour consists of the adoption of new technologies, while at the same time evaluating the usefulness of this new technology for the company (Danneels, 2008; Chen & Lein, 2013; Yi et al., 2015). It also relates to the usage of the newly acquired technological knowledge within the firm (Danneels, 2008). Finally, dynamic technological capabilities force a company to make sure that qualified and skilled engineers are found and hired for the company (Danneels, 2008; 2012; Waleczek et al., 2019) in order to respond to changing market conditions. All these behaviours allow a firm to understand, foresee and respond to changes in the market environment through its dynamic technological capabilities (Yi et al., 2015; Teece, 2014b).

The difference between technological capabilities and dynamic technological capabilities according to the literature is that the first, as mentioned above, relates to the capabilities of a firm that enable it to innovate and create new products, services or processes, while the second tries to improve their performance and gain a greater advantage over competitors by using strategic flexibility (Chen & Lein, 2013; Danneels, 2011; Yi et al., 2015). Following the current literature, in this paper *Dynamic Technology Capability* refers to an ability to acquire new technologies and make innovations to update existing technologies and develop new products and/or services.

This research expects, that as described above, the bundle of technology capabilities are an important factor of a firm's international performance. Although this is the case, the expectation is that a firm that only has a bundle of technology capability will not achieve international firm performance. Therefore this research paper makes the proposition that the dynamic bundle of technology capabilities could be an element of Dutch high tech startups' or SMEs' international performance, but not a sufficient component on its own. In this paper this will be referred to as proposition 2.

2.6 Network Capability

The literature describes different approaches that are pretty similar to each other. These approaches are alliance capabilities, network capabilities, relational capabilities and network competence (Walter, Auer, & Ritter, 2006). The literature defines alliance capabilities as a combination of experiences of the alliance and the commitment of the different parties in the alliance to function well; the success of this alliance depends very much on the structure of a firm (Kale et al., 2002). This definition has been extended by Heimeriks and Duijster (2017), who describe alliance capabilities as a mechanism that enables the capture, sharing, and application of knowledge in an alliance. Network competences are described as the ability of a company to handle, use and exploit relationships between two or more companies (Human & Naude, 2009; Yu et al., 2014). This is similar to the description of network capabilities by Walter et al. (2006), who describe network capabilities as a firm's ability to start, maintain and take advantage of relationships with external partners. According to the research from Ziggers and Henseler (2009) network capabilities are constructed of three parts. These parts are the ability to develop an effective network structure, to focus on limited important companies and the ability to develop a long term orientation. Other researchers define network capabilities as interorganisational relations that are needed particularly for accessing resources (Kenny & Fahy, 2011).

2.6.1 Network Capability and Performance

The importance of networking capabilities on a firm's performance has been researched in previous literature. The results show an overall positive effect of network capabilities on firm performance. Mort and Weerawardena (2006) found that networking capabilities play a central role for firms to internationalise rapidly, but that it is also important to gain firm performance in international markets.

In a different research paper they propose a model on how born global firms can accelerate their internationalisation. Marketing and networking capabilities are key parts in this model (Weerawardena et al., 2007). These results are similar to those of Kenny and Fahy (2011), who in their in depth research on the effects of networks on firms' international performance, also found that network has a mostly positive relationship with the international performance of SMEs. In another study, networking capabilities were found to have a positive effect on sales growth, sales per employee, profit attainment, customer relationship quality, competitive advantage and long-term survival of university spin-off companies (Walter et al., 2006). The research from Human and Naude (2009) also found a positive and significant relationship between network capabilities and firm performance. The results in this research also found that 23% of the variance in firm performance was caused by networking capabilities. A different result was found by Yu et al. (2014), who also found that network capabilities have a direct and significant effect on performance, but the explained variance in firm performance due to network capabilities was only 11%.

The influence of networking capabilities on the internationalisation of a firm has also been researched in previous literature. For example Fernhaber and McDougall (2005) found that extensive networking can influence international performance and international growth of firms directly. Other researchers found that networking capabilities had a positive effect on the speed and shaping internationalisation efforts of high tech firms (Coviello & Munro, 1995). This is in line with other research that also found a relevant, superior and effective network is a vital part of companies in order to have a successful internationalisation process, and this network is especially used to gather important resources that advance the speed of internationalisation (Liesch et al., 2002). In the study of Zhou et al. (2010), they found a direct linkage between network capability and international performance. At the same time their research also found an indirect and positive contribution of network capability on international performance.

According to the literature network capabilities are also important for firms in other ways. An example is that network capabilities are important for expanding internationally. This is because these networks and relationships enable a firm to connect their activities and combine resources with other firms (Chetty, 2003; Andersson & Wictor, 2003). It is suggested that for startups with restrictions on their resources, their network is particularly important when going international (Coviello & Munro, 1995; Mort & Weerawardena, 2006). SMEs and startups are more vulnerable compared to bigger firms in the market and this is because SMEs and startups have less resources and finances for internationalisation efforts. An example of these internationalisation efforts is the selection of a new market as well as prior investigations into this new market. Because most of these companies are small, many are dependent on one market and a single product (Weerawardena et al., 2007; Mort & Weerawardena, 2006). Second, network capabilities can be important for a new venture to discover new international opportunities through this network by acquiring knowledge about the different markets they would like to enter (Coviello & Munro, 1995). Third, a network allows testing of new markets and product ideas with companies in their network (Weerawardena et al., 2007). Fourth, a firm's network is also important for finding partners in new markets with which to collaborate and cooperate. SMEs and startups often search for a partner that is in a position to enhance their own expertise in a new market (Oviatt & McDougall, 1994; Weerawardena et al., 2007; Mort & Weerawardena, 2006). Last, networks can be important in reducing the risk and uncertainty of internationalisation by providing relevant information about the markets, and these networks can help a firm to obtain specific knowledge and corresponding resources (Nerkar & Paruchuri, 2005; Weerawardena et al., 2007).

Substantive Network Capability

In this paper *Substantive Network Capability* is seen as a company's ability to maintain the relationships with its network partners and gain resources from these partners. This is based on the study from Jie & Harms (2018), into the current literature on substantive capabilities and network capabilities. When comparing this to the current literature on network capabilities used in this paper this description seems accurate.

Dynamic Network Capability

The definition used for dynamic network capabilities in this paper is based on the study from Jie & Harms (2018) and current literature on dynamic capabilities and network capabilities. The *Dynamic Network Capability* is described as the ability to develop new networks and gain knowledge from these network relationships to support innovations and identify new opportunities.

In this research it is expected that as described above, the bundle of networking capabilities are an important factor of a firm's international performance. Although this is the case, the expectation is that a firm that only has a bundle of networking capability will not achieve international firm performance. Therefore this research proposes the dynamic bundle of networking capabilities can be an element of Dutch high tech startups' or SMEs' international performance, but not a sufficient component on its own. This will be referred to as proposition 3.

Last, from reading current literature about capabilities and their influence on a firms international performance, this research proposes that the dynamic bundles of marketing, technology and network capabilities can be elements of Dutch high tech startups or SMEs international performance, but are not sufficient components on their own. This means that the bundles of capabilities have to collaborate to achieve international performance for Dutch high tech startups or SMEs. This will be referred to as proposition 4.

3. Methodology

3.1 Survey

The survey was designed and also used as part of the PhD thesis of Shuijing Jie. His research started off by making a categorisation model with the use of a systematic literature review into the capabilities of international startups and international performance (Jie & Harms, 2018). This research resulted in the use of the three main capabilities for this research, namely marketing, technology and network capabilities. The research also resulted in the separation of the three capabilities into substantive and dynamic. The survey was developed by enlisting current literature's concepts of what skills are part of each of the six main capabilities found in the paper of Jie and Harms (2018) and how to measure them. This resulted in different components or dimensions of each capability and eventually the questions to analyse each component of each capability. This resulted in a survey that investigated the international performance of the firms with the use of six different independent variables, which were measured with the use of different items. These six variables are: Substantive Marketing Capabilities (sixteen items), Dynamic Marketing Capabilities (sixteen items), Substantive Technology Capabilities (thirteen items), Dynamic Technology Capabilities (twelve items), Substantive Network Capabilities (fourteen items), Dynamic Network Capabilities (sixteen items). All multi-item measures were applied as a 5-point Likert scale from strongly disagree (1) to strongly agree (5). For firms' international performance indications, international sales figures are really important, as recommended by Gerschewski and Xiao (2015). The different objectives that have been measured for international performance are ventures international revenue, respondents' satisfaction on international revenue and international revenue compared to competitors with a time frame of the last three years, to minimise bias (Gerschewski and Xiao, 2015).

The already developed survey was improved and adjusted with regards to English language. This survey was also created in Qualtrics, which is a program for making online surveys. Furthermore, a Dutch translation was prepared as a background document to be used during survey interviews, which were mainly held in this language.

To further assess the sample, common descriptive variables of personal (e.g. gender, age, education, international experience) and corporate (e.g. size, firm age, percentage international revenue) backgrounds were also asked during the survey. An outline of the survey is added in Appendix 1.

3.2 Sample of Companies

The firms used as a sample for the research are different Dutch High Tech companies. These selected companies were established no longer than nine years ago. This age limit was selected since previous international entrepreneurship studies found that the average age of most international new ventures is about nine years (De Clercq & Zhou, 2014; Lu, Zhou, Bruton, & Li, 2010; Zhou et al., 2010). Another selection criteria used for these High Tech companies was that they should have a minimum of 5% international revenue in their last fiscal year. Finally, these companies should be start-ups and/or medium-sized High Tech enterprises. This means that the companies have no more than 250 employees, which is the criteria for the classification of medium-sized enterprises of the European Union (Liikanen, 2003). The market of High Tech enterprises was examined because companies from this knowledge intensive or high tech market, normally expand internationally rather quickly compared to other markets. This is because they want to profit from their products' advantages as quickly as possible (Cavusgil & Knight, 2015; Ngasri & Freeman, 2018).

To gather a broad based selection of possible companies for this research, different methods have been used. Incubators and start-up communities close to the different technical universities in The Netherlands were approached and contacted with a request to provide company names that fitted the selection criteria. However, because of new privacy laws (European Commission, 2018) not all the incubators and start-up communities were willing to share company contacts. In this case, the companies listed on websites of these incubators and communities were examined. Companies were also found by searching the internet using different search terms, such as high tech start-ups, Dutch high tech, high tech business fairs and congresses etc. and using the author's own network. By doing so a total of 215 companies were found and asked to participate in the survey. This was done mostly through phone calls and also personal visits to promising candidates. The latter was done especially for businesses in the vicinity of the University in Enschede. The companies that were contacted by phone call received an email with more information about the research and survey, and a request to schedule a meeting to fill out the survey in the author's presence. If a meeting could not be arranged, the company had the opportunity to fill out the survey online as well. In total 48 companies were willing to participate and therefor received the survey. Based on survey answers, a number did not match the selection criteria and ultimately 39 were suitable for the research, of which 31 completed the survey.

In order to make sure the sample and answers given would be comparable in terms of knowledge of a firm's performance and capabilities, the respondents that filled out the survey were either the (Co-)Founder, CEO, CFO or other managers of the companies. To further assess the sample, common descriptive variables of personal (e.g. gender, age, education, international experience) and corporate backgrounds (e.g. size, firm age, percentage international revenue) were also recorded.

Of the respondents 84 % were male with an average age of 34 years (minimum 21; maximum 54). Of the different (Co-)Founder, CEO, CFO or other managers of the companies, 3 had a Ph.D., which is nearly 10 % of the total respondents. Respondents with a Masters degree numbered 16, which is just over 50 % of the respondents. Another 9 respondents had an Undergraduate degree also known as HBO in The Netherlands which is around 30 % of the total respondents. From a corporate perspective, the average starting year for the firms in this research was 2015, which means that the average age of firms was 5 years old. The oldest firm started business in 2010 and the youngest in 2018. The companies in the survey had on average 9 full time employees, with the largest firm having 40 full time employees and the smallest having 2 full time employees. On average 40-50 % of the firms' revenues from the past fiscal year were from international sales.

3.3 Method

Data was collected from online surveys or face to face, with 15 surveys completed online and the remaining 16 undertaken as face to face survey interviews. Meant that roughly 50 % of the surveys were collected via the face to face survey interviews and the other 50 % were collected by the online survey. The collected data was reviewed to assess the companies suitability for the research and check if the survey was filled out properly. If missing data was encountered, it was replaced with the use of expectation maximisation in SPSS, which calculates a maximum likelihood of the missing data by analysing the other results (IBM Knowledge Center, 2018).

From the total of 31 cases three were deleted because these cases had constructs with a null amount of variation in the answers given to one construct, which means all the answers for a construct were the same. The three deleted cases had the most constructs without any variation in them. This is common practice in research when using a small-N QCA study (Greckhamer, Furnari, Fiss, & Aguilera, 2018).

While computing the new calibrated scores in QCA the percentiles of 10%, 50% and 90% were used. Amounts were also rounded to two numbers behind the decimal. In addition to the deleting of some cases without variation in constructs, all mean scores for constructs had 0,001 added to make sure all the results used in the analysis were consistent while using QCA.

3.3.1 Descriptive Statistics

The different items were tested with the use of the SPSS statistical analysis program to test the reliability and validity of the items. The Reliability analysis is for observing the degree of precision (reproducibility of the results) thus the lack of random measurement error. This is also known as the level of internal consistency of a specific sample or how related the set of items are as a group. The groups in this case are the questions that belong to the different constructs. The Reliability analysis is done with Cronbach's alpha. Cronbach's alpha is a good method when using multiple Likert-scale questions. Secondly the validity of the data of the filled out surveys of the Dutch companies were analysed using the Kaiser-Meyer-Olkin (KMO) and Bartlett's tests.

The KMO test measures sampling adequacy. This means the proportion of variance in the constructs can be caused by underlying factors. The KMO test is a good way to indicate if factor analysis is possible for the data.

The Bartlett's test of sphericity tests the null hypothesis that variables are uncorrelated in a population. In other words there has to be some relation between the variables for factor analysis to be useful. For this to happen the score of the Bartlett's test should be lower than 0,05 to be significant. In this case the hypothesis can be rejected and the factor analysis can be used.

The results can be found in Table 1, and as can be seen all the Cronbach's alpha scores of the constructs are higher than the recommended 0,7 benchmark. This means that the data is reliable enough to use for the research and other researchers could replicate the research and should find similar results.

Table 1: Reliability and Validity Analysis

Constructs	Valid cases	Mean	Reliability analysis		Validity analysis	
			Cronbach's α	Cronbach's α (standardized items)	KMO test	Bartlett's test- Approx. Chi-Square (sign.)
International experience	28	4,524	0,778	0,783	0,654	23,586 (,000)
Global mindset	28	4,229	0,800	0,792	0,634	83,272 (,000)
International performance evaluation	28	3,262	0,834	0,856	0,713	35,480 (,000)
International performance satisfactor	28	3,405	0,932	0,936	0,637	77,765 (,000)
International performance competitor	28	3,112	0,911	0,913	0,725	55,382 (,000)
International performance full	28	3,260	0,885	0,889	0,775	193,105 (,000)
Innovation performance full	28	3,932	0,834	0,838	0,718	61,909 (,000)
Substantive marketing capability	28	3,241	0,935	0,933	0,752	399,826 (,000)
Dynamic marketing capability	28	3,603	0,935	0,935	0,390	405,140 (,000)
Substantive technological capability	28	4,335	0,879	0,892	0,726	232,577 (,000)
Dynamic technological capability	28	4,156	0,898	0,905	0,724	230,383 (,000)
Substantive network capability	28	3,495	0,962	0,963	0,878	359,386 (,000)
Dynamic network capability	28	3,408	0,927	0,927	0,694	349,016 (,000)

In order to test whether the survey questions represent the overall constructs of the survey the validity is tested. In this research the KMO and the Bartlett's test of sphericity were used to do so. Using the data of the Dutch companies, all constructs except Dynamic Marketing Capability had a score higher than 0,5 KMO. This means that using factor analysis can be useful on concepts higher than 0,5 KMO. In this way the questions in the construct are related. The only exception in this is the result of Dynamic Marketing Capability. But because it is a small sample size, this lower score is acceptable. When examining the Bartlett's test of sphericity scores, all constructs had a significant score, which means that factor analysis can be used with the data.

3.3.2 QCA (Qualitative Comparative Analysis)

For this research the different configurations were examined to find out which combination of capabilities had an influence on international performance. Traditional approaches of multivariate

data analysis, such as multiple regression or structural equation modelling, often suffer from disconnections between theory and empirical testing (Woodside, 2013; Palmer, Niemand, Stockmann, Kraus, & Kailer, 2019). This is because the traditional approaches are mostly particularly based on the net effect of independent variables on the dependent variable. This means that the direction of the dependent variable is explained by a specific independent variable that it relates to most (Palmer et al., 2019). In some conditions the independent variable can influence the dependent variable in a positive way, while in other conditions there is a negative influence on the dependent variable (Ragin, 2008; Palmer et al 2019). In some cases it is therefore more appropriate to research the configuration of different independent variables that result in a specific outcome, than the net effect of independent variables. This is why the Qualitative Comparative Analysis (QCA) methodology is used. There are two different methods of QCA, these are crisp set analysis and fuzzy set analysis. The crisp set approach was the first QCA method, but this method can only make sets of full membership cases and full non-membership cases. This means that the membership can be either '0' or '1'. The fuzzy set was later made as an expansion to the crisp set because the fuzzy set can also analyze fine-grained differences in the degrees of membership (Greckhamer et al., 2018); this degree of membership can be changed by the researcher.

In this paper the fuzzy set of QCA (fsQCA) was used because the survey used in the research had Likert-type questions to measure items and thus fuzzy set is the most appropriate QCA analysis (Palmer et al., 2019).

To calibrate the original values from the cases into fuzzy set membership scores, the percentage of those for the '0' for non-membership, '1' for membership and the '0,5' for cross over membership should be selected. For this study the selected percentiles were 10% for non-membership, 50% for cross over membership and 90% for full membership. The values that indicate the selected percentiles were also rounded to two decimals. Calibrated constructs were also added with 0,001 to ensure all the results were used in the analysis for consistency while using QCA. Last, calibrated constructs with a value of 0,5 were changed to 0,51 in order to make sure the data is also used in the research to compensate for the small sample size. The eventually selected configurations had to be highly consistent, with the consistency cut off score above 0,8 (consistency > 0,8) and unique, with a unique coverage higher than 0,01 (unique coverage > 0,01).

3.3.3 Case Study (Interview)

The analysis resulted in the formation of a number of configurations, however to get more insights in the companies under the found configurations and their capabilities a semi-structured interview was prepared. Some of the questions asked can be found in Appendix 2. In total five interviews were held with different companies in one of the found configurations.

4. Results

4.1 QCA Results

From the data gathered, four different configurations were found to have a positive influence on the international performance of Dutch High Tech start-up and SMEs. These configurations are shown graphically in Table 3, which is recommended by Ragin (2008) and shown below. The QCA results such as the Parsimonious Solution, Intermediate Solution, and Necessary Conditions and be found in Appendix 3. In order for a configuration to be relevant for the international performance of a young high tech company, the found configurations should have a sufficiently high value. Since there are more than one sufficiently high configuration, there are multiple paths to international performance for high tech startups and SMEs. The minimum consistency selected in this research was 0,8 which is higher than the recommended minimum of 0,75 (Ragin, 2008; Palmer et al., 2019). The Truth Table has been added as Table 2. It shows that there are seven cases that show IP (International Performance) with a higher raw consistency above the 0,8.

Table 2: Truth Table

smc_c	dmc_c	stc_c	dtc_c	snc_c	dnc_c	number	ip_c	cases	raw consist.	PRI consist.	SYM consist
0	0	1	0	1	1	1	1		0.940299	0.873418	0.873418
1	1	0	0	1	1	1	1		0.892944	0.68116	0.68116
0	0	1	1	0	0	1	1		0.875912	0.423729	0.423729
1	0	0	0	1	1	1	1		0.842262	0.543103	0.543104
0	0	1	0	0	0	1	1		0.808823	0.333333	0.333333
0	0	1	1	1	1	1	1		0.80593	0.576471	0.576471
1	1	1	1	0	0	1	1		0.802985	0.492308	0.492308
1	1	0	1	1	1	1	0		0.785563	0.516747	0.516747
1	0	0	1	1	0	1	0		0.762763	0.193878	0.193878
0	1	1	1	1	0	1	0		0.741445	0.218391	0.218391
0	1	1	1	1	1	2	0		0.738839	0.482301	0.482301
0	0	0	0	0	0	5	0		0.729521	0.485294	0.485294
1	1	1	1	0	1	1	0		0.728045	0.368421	0.368421
1	0	0	0	0	0	3	0		0.724816	0.0588236	0.0679612
1	1	0	1	0	1	1	0		0.719101	0.319728	0.319728
1	1	1	1	1	1	5	0		0.712271	0.453083	0.533123
0	1	0	1	0	0	1	0		0.694352	0.0707069	0.070707

The consistency score indicates the percentage of firms that have successful international performance when they acquire the presented combination of capabilities. This means that for example for configuration 1a (consistency 0,8), 80% of the firms that have acquired this mix of capabilities, have international success (Palmer et al., 2019). The (raw) coverage score shows the number of cases that explain the outcome of the configuration, this is comparable to the r-squared (R^2) score in regression (Woodside, 2013; Palmer et al., 2019). The overall coverage indicates the overall percentage of international performance explained by the four configurations. This means that the four configurations explain 47% of a firm's international performance.

It is important to point out that black circles (●) in the table indicate the presence of a condition, while a circles with a cross (⊗) indicate the absence of it. Also large circles indicate that the presence or absence is part of the core condition of the configuration, while small circles are complementary or peripheral conditions. In order to be reckoned as a core condition the attribute has to occur in the parsimonious and intermediate solutions of the QCA test, while a complementary condition only occurs in the intermediate solution. A blank space in the condition indicates a 'do not care' situation which means that it may be either present or absent. The configurations are grouped based on their core conditions (Fiss, 2011).

The first configuration (1a) that has a positive influence on the international performance of a company is an absent attribute of Substantive Marketing Capability (SMC), Dynamic Marketing Capability (DMC), Substantive Network Capability (SNC) and Dynamic Network Capability (DNC) and with an attributing presence of Substantive Technology Capability (STC). In this first configuration having a presence of STC and an absence of SNC and DNC is a core conditions. The second configuration (1b) has the same core conditions as the configuration presented previously. This means that configuration 1b also has a present STC while SNC and DNC are absent, the difference is that amongst the core condition configuration, 1b also has a present attribute of SMC and DMC that differs from configuration 1a, Dynamic Technology Capability (DTC) is also an attribute present in international

performance in this configuration. The third configuration that has a positive influence on the international performance is an absent attribute of STC and DTC while having an SMC, SNC and DNC present. The absence of DTC and the presence of SNC are the core conditions in this configuration. Last, the presence of STC, SNC and DNC with an absence of the attributes SMC and DMC also provides a positive influence on international performance. This configuration’s core conditions are an absence of DMC and a presence of DNC.

In total seven different companies had these configurations. In order to get more information about the capabilities of the companies, an extra interview was done by five of the firms covered by one of the four configurations found. The results of these interviews can be found in Appendices 4 to 8. The results of the interview will also be discussed in the following paragraph.

Table 3: fsQCA Configurations

Configurations for Achieving High International Performance

	Solution			
	1a	1b	2	3
Marketing				
Substantive Marketing Capability (SMC)	⊗	●	●	⊗
Dynamic Marketing Capability (DMC)	⊗	●		⊗
Technology				
Substantive Technology Capability (STC)	●	●	⊗	●
Dynamic Technology Capability (DTC)		●	⊗	
Network				
Substantive Network Capability (SNC)	⊗	⊗	●	●
Dynamic Network Capability (DNC)	⊗	⊗	●	●
Consistency	0,80	0,80	0,88	0,84
Raw Coverage	0,19	0,19	0,27	0,26
Unique Coverage	0,04	0,05	0,10	0,08
Overall Solution Consistency		0,78		
Overall Solution Coverage		0,47		

4.2 Results Interview

To gather evidence that the configurations found were a good indication of the capabilities important for firms, semi structured interviews were held. These interviews were held with five companies in the different configurations found. Company 1 is part of configuration 1a and is a company in the 3D printing market. Company 2 is also part of configuration 1a and their technology relates to making Virtual Reality (VR) training programs for industrial companies. Company 4 is a

company that makes a checklist and work registration form app/program and is part of configuration 1b. Companies 3 and 5 are both part of configuration 2. Company 3 is a robotics company that makes a bird drone and Company 5 makes machines that produce microscopic air bubbles for use in the medical industry.

4.2.1 Configuration 1a

For configuration 1a the Substantive Technology Capability (STC) was an important attribute present that contributed to the international performance of the firm. During the interviews it was mentioned that for these firms, the quality of the product or technology is the most important factor to differentiate from competitors in the market. Company 1 stated that: 'technology is the most important in our firm, this is because what they sell is (made by) our technology.' Company 1 also stated that: 'customers use our technology to gain an advantage, which they lack if the technology is not good, as the technology is the reason why a customer will work with you.' Company 2 stated: 'we see technology as the most important factor in our company, but you need marketing and a network as well.' 'There are some competitors in the market that have very good marketing but their technology in their product is not so good.' 'The reason for this is that it is a new technology and the end users do not know what the technology can do so they do not know what to ask about the product.' During the interviews the companies also said that in their main international markets the quality of the product or technology is most important for customers in the market and they are willing to pay more for better quality. Company 1 stated that: 'there are some countries that believe what you say about your product, but in for instance The Netherlands and Germany you have to prove that your product works and is as good as you say it is.' Company 2 stated that: 'marketing is less important for customers in Germany, instead technology is more important for them.' Company 1 has developed their own innovative 3D printing technology and keeps developing their product. They stated that: 'I think that nearly half of our budget is used in research and development projects into the printer itself, the material and the engineering.' 'We have a list with improvements that we want to achieve such as improvements in speed or quantity.' Company 1 and 2 both make customer specific products and thus indicated that they use customer feedback to improve their technology and product. Company 1 stated: 'we come in contact with our customers early in the production and ask what they want and then see how we need to adapt the printer to achieve this.' 'For the biggest part we use customers' feedback, related to what the customer likes or dislikes of the product, we then try to integrate it with the technology we use.' Company 2 said: 'we make a new program for each specific customer, thus we make customised work.' 'We work together with our customer intensively.' This information gathered through the interviews can be seen as evidence that Substantive Technology Capability (STC) is indeed important for these firms to perform well internationally. Both companies use magazines and blogs to keep track of changes in the technology that they use and also changes to the market in which they operate.

In configuration 1a there is an absence of the attributes of Substantive Marketing Capability (SMC) and Dynamic Marketing Capability (DMC) to perform well internationally for the companies in this configuration. Both companies 1 and 2 indicated that marketing is a part of the firm that still needs to be developed. Company 1 said: 'we do relatively little to our marketing at the moment.' 'We need to encourage the use of marketing.' Company 2 stated: 'we currently do a little with our marketing and need to do more, because I do think that marketing is an important part.' The two companies are in the phase that they both want to develop, design and implement a marketing plan for the future. Company 2 said: 'we are currently working on a marketing plan that we want to finish in the coming months.' Until now the firms use their website, occasionally they use social media and they go to exhibitions and fairs. Company 1 states: 'at the moment for marketing we occasionally go to fairs as a visitor to meet new people and we use our websites.' Company 1 also indicated that they find their marketing difficult because of the wide possibilities of their product to be used in various markets, and that this is probably a contributing factor that their marketing is scored less than the other capabilities. The marketing of Company 2 is similar; 'we currently use LinkedIn or Xing in Germany and go to fairs such as the Hannover Messe and more recently the CES in America.' They also state: 'because a lot of

people and companies do not really know what VR is and what it can do, you cannot use normal marketing in this market.' These statements are in line with the results found in the configurations.

Lastly configuration 1a has an absence of Substantive Network Capability (SNC) and Dynamic Network Capability (DNC). For the companies in this configuration their network partners are important for their business but not vital for firm performance. This is because their partners are the suppliers of material or technology for in their products, but there are multiple companies who can deliver the required material or technology. Company 2 stated: 'we work closely with a company that designs and makes the models used in our program.' 'This company has very good contacts with one of the managers, this makes it really easy to work together.' 'Should this collaboration stop working, there are other companies that can make the models.' Company 1 stated: 'our overall network is important but there is not one most important company in the network.' The companies both do not have partners that sell their product abroad or that they use to penetrate a new market, they do both themselves. This is why network is not a necessary present condition to generate international performance. Also the companies are not searching extensively for more potential business partners for in their network. Company 1 said: 'We are currently not actively searching to expand our network.' Company 2 also stated: 'We have a relatively big network due to previous jobs and businesses from the management team.' This also indicates that they are not required to search for potential network partners and thus an absence of the Dynamic Network Capability (DNC).

4.2.2 Configuration 1b

In configuration 1b the capabilities of SMC and DMC are present attributes in order for the firm to perform well internationally. Company 4 indicated that they do a lot of online marketing because they have a couple of larger international competitors in the market. This company also has different offices throughout the world in order to provide proper support in various locations and cultures. Some examples are their current office in Spain to support the Spanish speaking markets and their plan to open an office in Egypt, which is planned because Egypt is a country that wants to protect their local companies, by open in an office in Egypt Company 4 ensures that it provides work for local people as well as some of the revenue staying in Egypt which will benefit the company trying to penetrate the Egyptian and eventually Arabian market. Also they go to fairs and go on trade missions from the Dutch Government and meet with ambassadors in different countries. This company indicated that they adjust their prices in order to fit in other countries markets where they have less money. For example they adjust their prices for countries in South or Latin America. These are all examples of marketing capabilities and that they are important to do for this firm in order to gain international performance.

STC and DTC are also both present to lead to international performance in configuration 1b. Company 4 finds their technology to be really important. This is because eventually their technology helps their customers and with a good product the firm can compete with larger competitors. Company 4 stated: 'with a good product or technology customers will stay at your company.' Because company 4 has large competitors their product is not unique in the market but is one of the market leading when comparing the technology of the program. They state: 'we design and develop our product or software ourselves with the latest technology, this enables us to develop a product that is at least as good as our competitors who have a much larger budget.' 'These competitors have a larger customer base but this is due to their larger budget in marketing not because of the quality of their product because that is similar to ours.' Their programmers frequently go to programming conferences in Europe. They update their programs frequently, sometimes once a week. This is also done so that they can delete the update quickly and easily when it does not work. Lastly they get feedback from their customers on ways to improve their technology.

Last, SNC and DNC are absent in this configuration. Company 4 has different partners, from some partners customers can acquire their program, others enable a customer to add specific forms or files that is needed for a specific market or country. Currently everyone can become a partner of Company 4. These partners are not bring in new customers for the firm as much as they had hoped. Company 4 stated: 'we have thought about stopping with our partner network, but we do see that it is complementary.' An example of this is the case that they have the Mexican government as a customer

which would not be accomplished without a local partner in Mexico. Company 4 stated: 'we would have never been able to find the Mexican government as a customer from the Netherlands, from our office in Spain maybe, but we have from a local partner.' There is no frequent contact currently between company 4 and their partners. In the future Company 4 wants to invest more in a training for their partners to ensure that the quality of support that they can give to the customers is of a higher level, which is comparable to the support the customers get from Company 4 themselves. This company is not actively searching for new partners for their network.

4.2.3 Configuration 2

Companies 3 and 5 are part of configuration 2, that requires a firm to have a present attribute of SMC to have international performance. Both the companies have a product that is quite unique in the market and there are a few potential customers. This is why these companies need to market their products very well to make sure the potential customers know about their companies. Company 3 stated: 'our product is unique in the world, we are the only company that makes these types of drones for outdoor use.' 'We develop a new product for a relatively new market and therefore it is also really important for us to market our product.' Company 5 stated: 'the world of microfluidics is really small we know most of the companies in the market.' For marketing company 3 mentioned that they go to fairs to promote their product. 'Our product itself is an important way to get attention on the fairs we go to, our product stands out comparing it to other products on the fairs and people want to see it.' This company is in a phase that they want to improve their marketing further by making the company easier to find on internet, for example on Google and they want to develop a better marketing plan by hiring a new full time employee to focus on their marketing. At the moment company 5 goes to conferences and fairs to market their product, as well as social media which they use frequently. They have a marketing plan which they update a couple of times a year. For Company 5 marketing of the product is also important because the process of the sales of their medical machine is long. They state: 'most of their customers are academics, who need to write a proposal before they are allowed to buy the product which can take up to nine months.' To improve this process they have made application lists of the possibilities of their products so that potential customers can easily get an idea of what the product can do.

This configuration also has an absent attribute of STC and DTC. Company 3 still makes small improvements to the components of the product but there have not been big improvements to the technology in recent times. Company 3 stated: 'we have frequent contact with another firm in The Netherlands that has a similar but smaller product and we also work together with universities to improve our product further.' According to them the biggest improvement is still to come, they want to fly automatically or from a control center, at the moment an employee has to fly the product manually which makes the costs for the customers a lot higher. Because this product is unique in the world and they are in a new market they are currently more focused on finding more international partners than developing their product. For company 5 it is difficult to make improvements to their technology. This is because they need to have an European Union licence and every change made to the product has to be approved. They also believe that the big improvement to their product is yet to come when they are also able to deliver medicine to patients with the use of the bubbles made by their machine.

Lastly the companies in this configuration have a presence of SNC and DNC to achieve international performance. Company 3 works with international partners and partnerships who fly the drones for them in the other markets, they provide their partners with the drones. Company 3 stated: 'we changed to this business model a couple of years ago because it is the most efficient and effective to operate in international markets.' They also relies on partners to enter new markets and get new customers. An example is a Canadian partner which resulted in their first airport deal and new Canadian investors. This is why they frequently have contact with their international partners. At the moment this company does not have any Dutch customers due to the size of the market and the rules and laws in The Netherlands, which prevents them to start a collaboration with Schiphol. Partners are also vital for company 5. At the moment they only use one supplier for some parts of their product.

There are other companies that can produce these part but the company is still too small to do dual sourcing. Another example of the importance of the network is that they need the collaboration of different hospitals and clinicals to carry out tests and clinical trails of their products. Company 5 stated: 'hospitals and clinicals need to be able to purchase the product, for this our product needs to be approved and licensed by passing the tests and regulations.' 'We have recently hired a new employee who has a large network which is a double advantage for us.' These are reasons why both companies have a good relationship with their partners and speak to them frequently, which indicates that their network capabilities are important for the companies to perform and especially international.

5. Discussion and Conclusion

In general, previous results found a positive influence of capabilities on firm performance when researching the relationship between capabilities and firm performance. This study, which is based on fuzzy set QCA of Dutch high tech startups and SMEs, and their substantive and dynamic marketing capability, substantive and dynamic technology capability, and substantive and dynamic networking capability confirms the assumption that capabilities can have a positive influence on firm performance. Although there are significant differences in the paths found that are essential to increase a firm's international performance, the results do show that SMC, DMC, STC, DTC, SNC and DNC are important capabilities to have for a firm to achieve international performance as they are at least present in one of the found configurations. This research shows that Dutch high tech SMEs and startups perform well internationally when:

- An absence of SMC, DMC, SNC and DNC is compensated by the presence of STC (1a).
- An absence of SNC and DNC is compensated by the presence of SMC, DMC, STC and DTC (1b).
- An absence of STC and DTC is compensated by the presence of SMC, SNC and DNC (2).
- An absence of SMC and DMC is compensated by the presence of STC, SNC and DNC (3).

The results found comply with propositions 1, 2, and 3, which indicated that the individual bundles of capabilities can be an element of international performance of high tech startups and SMEs, but are not sufficient components on their own. Only in the markets of the companies in configuration 1a it seems that STC has enough influence on the firms performance to be the only capability present in the company. This also became clear from the interviews held with the companies, who all stated that with only one of the capabilities present, it was not sufficient to have a healthy and well performing company. Even the best technologies need to be produced and sold for which marketing and a network are important to have. The different configurations of capabilities found to improve international performance are also evidence for proposition 4 that the bundles of capabilities can work together to achieve international firm performance. The results show that none of the bundle of capabilities is consistently present or absent in the configurations. All configurations show that in the capabilities bundles there is always a substantive capability or both a substantive and dynamic capability needed to increase international firm performance, which is in line with previous literature from Peteraf et al. (2013) and Waleczek et al. (2019) who both argued that the need for substantive capabilities is necessary in order for the dynamic capabilities to have an optimal effect on firm performance.

After the interviews it seems that the companies in the same configurations have similarities in the market they operate in. The study of the effects of capabilities on performance has been done in previous studies (Chen & Lein, 2013; Covin et al., 1990; Strehle et al., 2010). Although this is the case these studies have focussed on changes in the market and the differences between high and low tech markets. This research shows with the use of the interviews that the size, newness and the number of competitors in the market also have influence on the importance of the capabilities and their configuration. From the interviews it became clear that companies in configuration 1a are in a rather new market that has a lot of competitors. These markets are easy to enter with a new venture. Within these markets the technology they use or quality of the product they produce are most important to

generate international performance. Examples of these markets are the virtual reality or 3D printing markets. The interview with the firm in configuration 1b resulted in an understanding that their market is quite similar to those in configuration 1a with the exception that their market has a few big international competitors. This means that their marketing capabilities are also very important to generate international performance. For these companies only having a good technology or a good quality of the product is not sufficient for international performance. During the interviews it was also interesting to find the firms in configuration 2 are in smaller but less easily accessible markets. In this case to have substantive marketing capability and both the network capabilities is more important in order to have good international performance. The technology is of course still important for the firm, but less vital as a requirement to generate international performance. The configuration of capabilities present and absent in configuration 3 appear to be the configuration of a newly started company. During the interviews it became clear that most of the companies started developing their technology first and then started selling their product via their network. The last capability that is being developed in the most recently started companies are their marketing capabilities. This is similar to the mix of capabilities in configuration 3.

Since this is a new type of research in this field of research that is trying to find a different configuration that enables a firm to achieve international performance and has hardly been carried out by other researchers in this research field, there is currently no accurate comparable literature. Nevertheless there is still a lot of research on the effects of individual capabilities on firm performance. Some researchers have found that an interaction between different capabilities can be beneficial for a firm's performance (Dutta et al., 1999; Song et al., 2005; Weerawardena et al., 2007). This research shows that different interaction between capabilities are important to generate international performance for high tech SMEs and startups. This research shows that all of the capabilities used for the research in some way have an effect on the firm's international performance, which is in line with the majority of the research which have shown that there is a positive relation between marketing, technology and network capabilities and the firm's international performance.

When comparing the configurations found to the current literature there are similarities and differences. When taking a glance at the configuration it seems that STC is the most important capability to have for the firms, because it is present in most of the configurations found, namely 1a, 1b and 3. This could be explained by the fact that the research done by high tech companies and their technology is the on product or an important part of the product which they sell. This is in line with previous literature that stated for high tech companies their technology capabilities are important to get an advantage on the competitors in the market (Guan & Ma, 2003) and eventually achieve higher performance as a firm (Ribau et al., 2017). The first capability present in two configurations that improve a firm's international performance is SMC. The configurations where SMC is present are 1b and 2. This positive effect on firm performance is in line with the previous literature of Vorhies and Morgan (2005), which found evidence that marketing capabilities can be associated with superior business performance and can explain significant variances in business performance. This is similar to results found in previous research such as Morgan et al. (2009) who also found a positive association between marketing capabilities and a firm's business performance. Another capability that is present in two configurations, namely configuration 2 and 3, is SNC, which also shows that SNC can have a positive effect on firm performance. This is also shown in the results of previous research such as Bonner et al. (2005), who found that the network of a firm has a positive effect on market performance. Other similar results were found in the paper of Fernhaber and McDougall (2005), who found that for new international ventures, network capabilities improve their international growth. Other research confirms that networks increase the export and profitability growth of global startups and SMEs (Zhou et al., 2007). The DNC is the last capability present in two different configurations, namely configurations 2 and 3. This also confirms that DNC can have a positive influence on a firm's performance. Previous studies have also found this result such as the research done by Mort and Weerawardena (2006) who found that DNC plays an important role in the rapid internationalisation of born global firms. They also stated that DNC plays a central role in developing knowledge-intensive products as well as in a company's international performance.

It is interesting that DTC is only present once in the configurations because with DTC a company tries to innovate and develop new technologies to improve or update currently existing technologies. This can eventually lead to the development of new products or services. It might be expected that because this study was done on high tech companies, that DTC would have a more important role in the performance of the firms. Also because in some studies in the current literature the Research & Development of firms have significant and positive relationship to the growth of the firm (Guan & Ma, 2003). Similar results were found by Danneels (2012), where DTC affects the profitability of the firm.

5.1 Theoretical Implications

This research provides two main contributions to the existing literature. The first is that it introduces the fsQCA method to the literature field of international entrepreneurship and more specifically on the effects of capabilities on a firm's international performance. This method is different to traditional approaches because they are particularly based on the net effect of the independent variable on the dependent variable. In some cases the independent variable can have a positive influence on the dependent variable while in other cases the same independent variable can have a negative influence on the dependent variable. This is where the fsQCA method is beneficial because this allows a configuration of different independent variables to explain a specific outcome (Palmer et al., 2017).

Second, this research supplies four configurations of capabilities that work together to enable high tech startups and SMEs in The Netherlands to generate international performance. Until now the literature has used the traditional net effect method to determine the effect of capabilities on firm performance, with the result that nearly all capabilities have some effect on a firm's performance. This study has shown four different configurations of capabilities that enable high tech firms to achieve international performance.

Other than these two main contributions to the existing literature. This research is also one of the first to combine qualitative and quantitative research methods in the literature field of capabilities and their relationship with the firm's international performance.

5.2 Practical Implications

This research can benefit high tech startups and SMEs to get an insight on which capabilities are important for them to gain international performance. This is because it seems that the market of companies in the same configuration of capabilities have similarities. By comparing the market the high tech startup operates in with a description of the markets from each of the four configurations found, it can be shown which capabilities are important for the company to benefit in international performance. As mentioned before, the results show that four different configurations of capabilities can improve international performance for high tech startups and SMEs. The market description of configuration 1a is that this is a quite young and new but large market that is easy to access for new companies, and this is why there are a lot of competitors in this market. For the firms in this market the quality of the product or technology is really important. This is how companies can differ from one another. In the country where these companies operated the quality of the product is of importance and if they have the choice they will pay more for a good product than less for a low quality product.

The market of the companies in configuration 1b is also rather easily accessible for new ventures and the quality of the product is a good way to differentiate the company from others in this market. The difference is that in this market there are a couple of big international companies providing products or services, which is why marketing capabilities was also really important for these firms to perform well internationally. Companies in this market need to be easily findable for customers, otherwise customers will go for easier to find and better known larger firms.

The market of the firms in configuration 2 can be characterised as a smaller market but more difficult to enter for new ventures. The firms from our research in configuration 2 already started developing the technology for the market before actually starting the company. This was done via research as a study or a hobby. For companies in these markets to have international performance it was more important to make the company known to potential customers. Therefore the substantive

marketing and the substantive and dynamic network capabilities are of higher importance for these firms to generate international performance.

5.3 Research Limitations and Future Research

The sample size used in this research was quite small and not as large as was hoped in the beginning. Second, this research only focussed on high tech SMEs and startups from The Netherlands and most of the respondents were smaller sized firms. For further studies, this research can be performed in other countries or sectors in order to compare results. One of these studies is currently being undertaken with Chinese high tech startups by Shuijing Jie. His study will also compare the Dutch and Chinese results.

The survey scores were given by the respondents themselves, which means that the use of other international performance information such as annual reports was not been considered. In order to get more accurate results, this could be included in future studies of this field. The scores for international performance were given as a comparison to a firm's domestic performance.

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Appendix

Appendix 1: Survey outline

Question exploitation of the questionnaire (respondent I)

Section	Number	Instructions	
Section A	A1	Enterprise type	
	A2	Firm age	
<i>Firm basic information</i>	A3	Independency of the firm	
	A4	Main product/service (identify the industrial sector)	
	A5	Employee number (in full-time)	
	A6	First internationalize time	
	A7	Firm's internationalization degree	
	A8	Firm's ration of international revenue from its largest foreign customer	
	A9	Firm's internationalization scope (need full list of countries)	
	A10	Firm' email address	
Section B	B1	Position/title (identify the eligibility of the respondent)	
	B2	Age	
	<i>Respondent's background information</i>	B3	Gender
		B4	Education level
		B5	Working experience in the firm
		B6	Entrepreneurship experience
		B7a-c+B8	Respondent's international experience (Sousa and Bradley 2006: 58)
B9a-e	Respondent's global mindset (Nummela et al. 2004: 63)		
Section C	C1a	Overall revenue from international market compared with revenue from the domestic market (last 3 years)	
	<i>International performance</i>	C1b	The growth of revenue from international market compared with the growth of revenue from the domestic market (last 3 years)
		C1c	The profitability of revenue from international market compared with the profitability of revenue from the domestic market (last 3 years)
		C2a	Satisfaction on the ratio of international revenue (last 3 years)
	C2b	Satisfaction on the growth of international revenue (last 3 years)	
	C2c	Satisfaction on the profitability of international revenue (last 3 years)	
	C3a	The ratio of international revenue compared with competitors (last 3 years)	
	C3b	The growth of international revenue compared with competitors (last 3 years)	
	C3c	The profitability of international revenue compared with competitors (last 3 years)	

Question exploitation of the questionnaire (respondent II)

Section	Number	Instructions	Sources
Section A <i>Respondent's background information</i>	A1	Position/title (identify the eligibility of the respondent)	
	A2	Age	
	A3	Gender	
	A4	Working experience in the firm	
	A5a-c+A6	Respondent's international experience	(Sousa and Bradley 2006: 58)
Section B <i>Substantive marketing capabilities (SMC)</i>	Ba1-a4	Pricing dimension of SMC	
	Bb1-b4	Marketing communication dimension of SMC	(Vorhies and Morgan 2005: 92)
	Bc1-c4	Marketing planning dimension of SMC	
	Bd1-d4	Marketing implementation dimension of SMC	
	Be1	Additional important SMC from the respondent	
Section C <i>Dynamic marketing capabilities (DMC)</i>	Ca1-a4	Market knowledge acquisition dimension of DMC	
	Cb1-b4	Market knowledge assimilation dimension of DMC	(Flatten et al. 2011: 110)
	Cc1-c4	Market knowledge transformation dimension of DMC	
	Cd1-d4	Market knowledge exploitation dimension of DMC	
	Ce1	Additional important DMC from the respondent	
Section D <i>Substantive technological capabilities (STC)</i>	Da1-a5	Sensing dimension of STC	(Peng et al. 2008: 745)
	Db1-b4	Seizing dimension of STC	(Lichtenthaler and Muethel 2012: 1243)
	Dc1-c4	Transforming dimension of STC	
	Dd1	Additional important STC from the respondent	
Section E <i>Dynamic technological capabilities (DTC)</i>	Ea1-a5	Sensing dimension of DTC	(Peng et al. 2008: 745)
	Eb1-b4	Seizing dimension of DTC	(Lichtenthaler and Muethel 2012: 1243)
	Ec1-c4	Transforming dimension of DTC	
	Ed1	Additional important DTC from the respondent	
Section F <i>Substantive networking capabilities (SNC)</i>	Fa1-a6	Coordination dimension of SNC	(Walter et al. 2006: 561-562)
	Fb1-b4	Relational skills dimension of SNC	
	Fc1-c4	Partner knowledge dimension of SNC	
	Fd1	Additional important SNC from the respondent	
Section G <i>Dynamic networking capabilities (DNC)</i>	Ga1-a4	Network sensing dimension of DNC	
	Gb1-b4	Relational embeddedness dimension of DNC	(Bonner et al. 2005: 1376)
	Gc1-c4	Partner integration dimension of DNC	
	Gd1-d4	Network learning dimension of DNC	
	Ge1	Additional important DNC from the respondent	

Appendix 2: Interview Questions

The questions are:

- Which of the above described capabilities is the most important for your company and which are the ones that are of less importance (Marketing, Technology or Network) and why?
- Are there specific actions or activities that your company undertook in order to obtain your most important capability?
- Is there a difference in importance of the capabilities between being successful in the domestic market and the international market? If so what is the difference.
- Is there in your view an interaction or correlation between different capabilities in your company? If so, please explain what in your view the relation is.
- Are there people in your firm your firm could not do without/ would be difficult to replace? (Because of their skills or knowledge)

Development of capabilities.

- What was the sequence in which you obtained the capabilities in your company? Was this a logical event or what was the reason for this particular sequence?
- Is there a need for you to invest more in one capability when compared to the others (e.g. investment in time and or money) and why is this required?

Marketing

- What does your company do for marketing at the moment?
- How have you organized your marketing, is there one person in charge of marketing?
- Do you do anything different in this capability when comparing the different countries? If so please explain what.
- Was there an important moment in time or event that contributed to the importance of this capability?
- How do you keep improving the capability from now on into the future?

Technology

- What kind of technology do you use in your products/services? Is this unique in the market?
- How does your company monitor the changes to the technology in the market to make sure that you keep a competitive advantage?
- Do you do anything different in this capability when comparing the different countries? If so please explain what.
- Was there an important moment in time or event that contributed to the importance of this capability?
- How do you keep improving the capability from now on into the future?

Network

- Are there important companies in your network where your company relies on?
- How does your company choose/rate a potential (network) partner?
- Do you do anything different in this capability when comparing the different countries? If so please explain what.
- Was there an important moment in time or event that contributed to the importance of this capability?
- How do you keep improving the capability from now on into the future?

Compared to competitors.

- Are you unique in some capabilities when comparing this to your competitors? How so?

Find and entre new international markets

- What is the process of your company when searching or entering a new international market?
(Do you already know which countries you want to go to and focus marketing, network to that market or do you meet companies in your network and then search to enter the market they are in)

Results.

- What do you think of your company's scores compared to the other companies, do find some scores surprising?
- What do you think of your company's result/configuration, do you agree with it?
- Do you think that the other configurations that are found have a positive effect on the international performance of a company?
- Are there any scores of your company that you find surprising compared with the survey average?

Appendix 3: QCA Results

Computed items

```
compute: ip_c = calibrate(IntperTotal, 4.57, 3.22, 2.1)

compute: smc_c = calibrate(SMCTotal, 4.50, 3.25, 2.1)

compute: dmc_c = calibrate(DMCTotal, 4.81, 3.59, 2.42)

compute: stc_c = calibrate(STCTotal, 4.85, 4.5, 3.68)

compute: dtc_c = calibrate(DTCTotal, 5, 4.16, 3.25)

compute: snc_c = calibrate(SNCTotal, 4.59, 3.60, 1.93)

compute: dnc_c = calibrate(DNCTotal, 4.38, 3.46, 2.24)
```

Parsimonious Solutions

```
--- PARSIMONIOUS SOLUTION ---
frequency cutoff: 1
consistency cutoff: 0.802985

              raw          unique
              coverage      coverage  consistency
-----
~dmc_c*dnc_c      0.379801    0.0284495    0.765043
stc_c*~snc_c*~dnc_c 0.259602    0.0519203    0.746421
~dtc_c*snc_c      0.433855    0.0448079    0.85554
~dtc_c*dnc_c      0.411807    0.0128023    0.873303
solution coverage: 0.588905
solution consistency: 0.739946

Cases with greater than 0.5 membership in term ~dmc_c*dnc_c: 4 (0.85,0.95),
  24 (0.74,0.88), 26 (0.56,0.88)
Cases with greater than 0.5 membership in term stc_c*~snc_c*~dnc_c: 9 (0.81,0.73),
  7 (0.73,0.36), 18 (0.51,0.56)
Cases with greater than 0.5 membership in term ~dtc_c*snc_c: 2 (0.75,0.56),
  26 (0.69,0.88), 24 (0.64,0.88)
Cases with greater than 0.5 membership in term ~dtc_c*dnc_c: 24 (0.79,0.88),
  2 (0.63,0.56), 26 (0.63,0.88)
```

Intermediate Solutions

```

--- INTERMEDIATE SOLUTION ---
frequency cutoff: 1
consistency cutoff: 0.802985
Assumptions:

```

	raw coverage	unique coverage	consistency
~smc_c*~dmc_c*stc_c*~snc_c*~dnc_c	0.192034	0.0376956	0.79646
smc_c*~stc_c*~dnc_c*snc_c*dnc_c	0.27027	0.0988621	0.877598
~smc_c*~dmc_c*stc_c*snc_c*dnc_c	0.263158	0.0753912	0.837104
smc_c*dmc_c*stc_c*dnc_c*snc_c*~dnc_c	0.191323	0.0497867	0.802985
solution coverage: 0.469417			
solution consistency: 0.782918			

```

Cases with greater than 0.5 membership in term ~smc_c*~dmc_c*stc_c*~snc_c*~dnc_c: 7
(0.63,0.36),
  18 (0.51,0.56)

```

```

Cases with greater than 0.5 membership in term smc_c*~stc_c*~dnc_c*snc_c*dnc_c: 2
(0.53,0.56),
  26 (0.51,0.88)

```

```

Cases with greater than 0.5 membership in term ~smc_c*~dmc_c*stc_c*snc_c*dnc_c: 4
(0.73,0.95),
  24 (0.58,0.88)

```

```

Cases with greater than 0.5 membership in term smc_c*dmc_c*stc_c*dnc_c*snc_c*~dnc_c: 9
(0.72,0.73)

```

Truth Table

smc_c	dmc_c	stc_c	dnc_c	snc_c	dnc_c	number	ip_c	cases	raw consist.	PRI consist.	SYM consist
0	0	1	0	1	1	1	1		0.940299	0.873418	0.873418
1	1	0	0	1	1	1	1		0.892944	0.68116	0.68116
0	0	1	1	0	0	1	1		0.875912	0.423729	0.423729
1	0	0	0	1	1	1	1		0.842262	0.543103	0.543104
0	0	1	0	0	0	1	1		0.808823	0.333333	0.333333
0	0	1	1	1	1	1	1		0.80593	0.576471	0.576471
1	1	1	1	0	0	1	1		0.802985	0.492308	0.492308
1	1	0	1	1	1	1	1	0	0.785563	0.516747	0.516747
1	0	0	1	1	0	1	0		0.762763	0.193878	0.193878
0	1	1	1	1	0	1	0		0.741445	0.218391	0.218391
0	1	1	1	1	1	2	0		0.738839	0.482301	0.482301
0	0	0	0	0	0	5	0		0.729521	0.485294	0.485294
1	1	1	1	0	1	1	0		0.728045	0.368421	0.368421
1	0	0	0	0	0	3	0		0.724816	0.0588236	0.0679612
1	1	0	1	0	1	1	0		0.719101	0.319728	0.319728
1	1	1	1	1	1	5	0		0.712271	0.453083	0.533123
0	1	0	1	0	0	1	0		0.694352	0.0707069	0.070707

Necessary Conditions Analysis

Analysis of Necessary Conditions

Outcome variable: ip_c

Conditions tested:

	Consistency	Coverage
smc_c	0.594595	0.599713
~smc_c	0.615932	0.615932
dmc_c	0.608819	0.605375
~dmc_c	0.597440	0.606061
stc_c	0.628023	0.641715
~stc_c	0.572546	0.565309
dtc_c	0.605263	0.592618
~dtc_c	0.634424	0.653959
snc_c	0.690612	0.654313
~snc_c	0.556899	0.594985
dnc_c	0.706970	0.681756
~dnc_c	0.544808	0.570790

Analysis of Necessary Conditions

Outcome variable: ~ip_c

Conditions tested:

	Consistency	Coverage
smc_c	0.612625	0.612626
~smc_c	0.599713	0.594595
dmc_c	0.608321	0.599717
~dmc_c	0.599713	0.603175
stc_c	0.555954	0.563227
~stc_c	0.646341	0.632725
dtc_c	0.661406	0.642061
~dtc_c	0.580344	0.593108
snc_c	0.617647	0.580189
~snc_c	0.631994	0.669453
dnc_c	0.586801	0.561042
~dnc_c	0.667145	0.692996

Appendix 4: Interview Company 1

Company 1: configuration 1a

Company 1 is a company that makes 3d printed composites. At the moment they have 10 employees and a couple of students that work part time. The composites that are printed are made using their innovative 3d printing technology which uses Fiber Reinforced Plastics (FRP) and is strong, stiff, durable and light.

This is why they think that their technology capabilities is the most important for the company for being successful. In order to keep improving their technology they have a good relationship with their customers and use the feedback from these companies. They have noticed that there can be a difference to being successful in different countries. For example in Germany and The Netherlands the quality of the product is more important than having a very cheap but less quality product. In the firm they try not to be dependent on a couple of people but at the moment there are still some important people who would be difficult to replace. These are people that know a lot of the 3d printer program but also people in sales because they have a lot of customer contacts. The firm started with the technology and used their own network to generate the sales. They still need to improve their marketing activities and capabilities, which is their main focus for the future.

Marketing is still a big issue for improvement for this company. The most difficult aspect relating to marketing for them is that their product can be beneficial in a wide range of markets and they have not chosen one particular market to focus on yet. Some examples of the markets in which their product can be beneficial are the automotive and medical industry. At the moment they have two person that are doing their sales and a little bit of marketing, other than that they frequently go to fairs to meet people or companies and they just started with a new website where they want to give the companies a better impression on what they can produce by showing past clients, projects and products. Because they know they need to improve their marketing they want to have more frequent meetings to develop and implement a marketing plan and improve their digital marketing. Until now they more or less have done an opportunity base process of seeing what kind of jobs they could get not really specifically looking at market or country.

They use their own technology and technique to 3d print the composites. This makes their technology unique in the market. They mainly focus on the 3d printing software and improving the printer themselves. They monitor the changes in the 3d market by going to the fairs, but also reading special magazines which gives insights to the new developments in the market. Roughly half of their budget goes into R&D projects to keep developing their technology in areas such as speed, efficiency, materials to be used and the engineering around the 3d printer. Their technology makes products cheaper and better for their customers, which will make them come back to this company. Important events to their technology are the occasions when they buy and build a new 3d printer, because this improves the size and speed that they can print. They buy a new printer roughly every 1,5 years this is because the developments that they have made to their technology, means that a printer is outdated in this period of time. This is a faster rate of improvement when comparing to other 3d printing companies. These improvements are based on a long list which the employees try to achieve.

The network is important to this firm but they do not rely on a specific partner or company. They have different suppliers that provide the material that they use to make the products or prints. They also work together with a couple of schools and universities which helps them develop their company and products.

When choosing a potential partner or supplier this company compares the attributes of the material, price and also possible future cooperation projects. But being able to have a good relationship with the company is probably what they find most important when searching for a partner or supplier. At

the moment they have no real plans to increase their network other than finding more customers to increase their sales.

An important moment in time for this company's network was when they met someone from the university of Twente. This was because he helped the company from the start with structuring the business and shared his network with the company.

There are no big surprises when examining the scores. They know that they need to improve their marketing in the future. They are a little surprised that dynamic technology is a little lower than the average score because they invest a lot in their technology. They also agreed that they fitted the configuration (1a) and that having a good substantive technology capability could work in their type of firm. They were a little bit surprised about the configuration 2 because they found it strange that startup firms in high tech markets could achieve international performance without having a high score on technology capabilities.

Appendix 5: Interview Company 2

Company 2: configuration 1a

Company 2 is a company that makes VR training programs for industrial companies. Their program is a 3d and interactive digital environment. Examples of the trainings can be repairing a machine or safety training. They have six people working in the company at the moment. They do not think that a person is irreplaceable in the firm. They have arranged the structured of their company to make this possible. A couple of months ago the head of development left the company and they thought that that might have a big impact but the firm is doing better than before now.

This company does not see one of the capabilities as most important for their company, they find the combination most important. They do recon that there marketing is a little bit behind comparing with the others. In their view they think marketing and their network are ways to sell their product and the technology is the eventual product that the customer gets.

For some markets having good technology is more important than having good marketing skills, an example of this is the German market.

This company has one person that does their online marketing. Other than that they go to fairs (Hannover Messe & CES in America) and they post information online every week. They use Linked In and Xing in Germany as social media because this is better for business to business than other social media sites. Also most of their customers are larger companies because they make company specific training programs. The difficulty they have looking at marketing is that VR is relatively new so customers do not really know what it is or how it can be beneficial for them. This is why this company always gives a demo so that the customers can see what VR is and what it can do. To improve their marketing even further they are busy to design and implement a marketing plan.

Company 2 makes customer specific training programs, this means that they have a good relationship and frequent contract with their customers. This is also beneficial for this company to get the feedback on their product to improve it further. Their product is not unique in the market. There are a lot of other new companies that use VR technology.

The company is continually improving their technology, they have a view of what they want the product to eventually do, this is to make sure they have a competitive advantage over their competition. To improve the product the company has little projects that the employees can do when they are not working on a project for a customer. They also get information about the developments in the technology from magazines and a hub of other companies that work with VR which the company is part off. Lastly they also work together with some companies that provide the hardware such as glasses and the controls.

Company 2 has some important companies in their network. One of which is owned by one of their own directors, this company does the Modeling of the components that are put in the program that company 2 makes. There are other companies that could do the modeling but the structure they have with this modeling company makes the development of the program faster. Another important factor to the network is the cluster of other VR companies with whom they frequently meet. Company 2 also frequent has contact with their customers this is because the product they make is customer specific.

Company 2 is surprised about the score for their network, that their scores are lower than the average. They reckon that their network is bigger and better than some other companies in the VR market. The directors of this firm also have a big network of their own from other companies that they have and previous jobs.

They could see themselves in the configuration of 1a but they do expect especially in international markets that marketing should probably be more important for them than the network because that is how customers know that your product is better than the competitors.

Other interesting comments

In the VR/AI market there are some companies that are not really good with their technology but that have a really good marketing and a little less important but also good network. This is due to the newness of the technology. Also customers do not know specifically what to ask this is why they do not always get the best suited products for them.

The hardware for VR companies is more or less the same for everyone, the software is where you can make a difference.

Appendix 6: Interview company 3

Company 3: configuration 2

Company 3 is a robotics company that has developed a remotely controlled drone that looks and flies as a bird. Their product is used to scare away birds from locations where they can cause damage such as airports, farms, dumping grounds and oil drilling locations. The company started as a hobby from a few students. Now they work with 12 people and have around 30 drones at the moment.

All the products are manufactured by themselves. They do get different parts from different suppliers all over the world. For example the structure is 3d printed in Belgium and the antenna is from Czech Republic. They make money by leasing the birds to partnering companies in other countries outside of The Netherlands. One employee is the one flying the drone, this is why it is a relatively expensive service.

Because the company started from being a hobby they already had a prototype. This means that their technology capabilities were developed as first. At the moment they are investing more money into their marketing and network than their technology.

Marketing is an important part of the company this is because the product they make is a really new and a different product for a relatively new market. They are the only company in the world that provides a drone that scares real birds away because it looks and flies like a real bird of prey. Because their product is so unique it is important for them to being able to sell their service, with the use of marketing. For their marketing they go to fairs and also sometimes use social media as online marketing. Their product itself is an important way to get attention of the people at the fairs, it is a product that people want to see. In the past they have been in the news (papers) because of their product, which also helped to get more known to other companies. An important event for them was getting their first contract with an airport, which was Edmonton in Canada. This made it easier to persuade other airports to use their product.

At the moment they are in a phase that they want to professionalise their marketing even further, an example of this is how companies can find them on Google. They also want to hire an employee to do the marketing for them and create a better marketing plan.

This is a difficult market to get information from, an example is that airports do not really want to share the information about the amount of bird strikes they have with planes. This lack of information also makes it difficult for the company to have a good marketing plan.

What is also interesting is that they do not have projects in The Netherlands at the moment. Schiphol and Company 3 want to work together for 5 years already but they cannot get permission from the government. Also the Dutch farmers are mostly too small for the service to be beneficial for them. This makes selling the service more difficult because you do not have income in your home country.

There are other companies that use this technic of flying (flapping with the wings) but it is for smaller and in door use only. One of these companies is located in Delft where they have a dragonfly robot so they keep in contact with them to improve their technology, but they also work closely together with the universities to keep developing the technology themselves too. The technology in the different countries is the same the only thing that could be different in the different counties is the color of their product. When looking at the most important event concerning the improvement of technology, they hope it is still to come. This event would be when the drones can fly automatically or from a control center. This would make their product a lot cheaper and therefor be a big improvement to the business.

As mentioned before this company has some really important network partners. They rely on partners to penetrate different markets and get new customers. So they frequently speak to these partners, also to get feedback on their product. They also have some important suppliers that make specific parts for them so these suppliers are an important part of their network too. They met these

supplying companies at fairs or from employees experience. An example of this is the company in Czech Republic that supplies their antenna, this is a known company in the model plane flying market.

For Company 3 it is important that a potential partner already has experience in this kind of market before they start a partnership and it also helps if this potential partner already has customers that would want to use their services.

An important moment in time for their network was getting their Canadian partner, not only because via them they had their first airport but it also resulted in a new Canadian investor.

This company has markets or countries they focus on to enter, an example is the United States, but if they find a partner in other countries first they will not skip that opportunity.

They are not surprised about the results of their company. They know that their technology and network are on a good level and that they still could improve marketing in the future but they have plans for that.

Appendix 7: Interview company 4

Company 4: Configuration 1b

Company 4 is a company that makes an app/program that their customers can use to make checklist, work registration forms, etc. The company has 20 employees in offices in three countries in Europe. They have plans to open more offices in the future in Egypt, Russia and China. The product that they sell is the app/program. This is why they reckon that their technology is the most important capability. Their product is just as good or maybe better than their competitors but they have much bigger budgets for their technology development and marketing. When your product is of good quality companies will keep using your product, this is why the technology is most important, followed by their marketing skills because it is a competitive market with some big international competitors.

In order to keep improving the company they have a quarterly five point development plan for each quarter.

In the company they have a few important people in key positions. An example is the technical manager because he has a lot of knowledge of programming the product and it would be difficult to find a replacement with his knowledge.

At the moment the company does a lot of online marketing, especially on ways to find them on the internet (for example on Google). The difficulty they have with marketing their product is that they have big competitors and these have much bigger budgets for marketing. They also go to different events to get more attention to their product. They make some small adjustments in their marketing when comparing the different countries or markets. For example they adjust the prices for company specific changes in the program for counties where the pay is less such as in South/Latin America. They also see differences in the way they have to sell their product. For example in The Netherlands a potential big client wants to meet the firm first before choosing the company. This is already less the case in Germany and not necessary in Spain or South America.

For some countries they choose to open an office in that country. For example in Germany they just opened an office. Because Germans would rather choose for a German company to do business with than a company from another country. The same is for Russia and Egypt, the government and companies from those countries want the money to stay in the country.

For the Chinese market this firm wants to make a local competitor of their main product this is to try to stay ahead of the Chinese trying to imitate their product, with a 'local' product.

Lastly in the Netherlands they provide monthly workshops for customers to attend to so that the customers get the full potential out of their product.

To gather information about the markets and marketing they go to embassies, fairs or get information via the internet.

Their product is not unique in the market but their technology is market leader. In order to stay leader with their technology they go to programming conferences (Devovx in Belgium), look online for developments in the market for their product and they have a tech session with a high end programmer for the companies programmers to talk to and learn from. Lastly the company uses feedback of customers to also make good improvements. They constantly make small incremental improvements to the program. This means that they update their program a lot, sometimes just one small update in a week. They do this to make sure that in case the update does not work well, they do not have to change back the program to much, just the latest update.

Recently this company has employed 2 new programmers that can work with the latest programming developments, this has led to some new improvements to the program in the last months.

In the future this company wants to get more feedback in the form of scores from partners, employees and customers to see how they are performing. At the same time they want to start to

train and test their (network) partners because now these partners do not bring in a lot of new clients. Also to make sure that these partners can provide a good support program and eventually to increase the revenue from the partners. This company sometimes get criticism from customers which acquired the program from one of their partners, that they were not happy with the support provided by the partner. This means that the customer is not happy with the product and that is why they want to properly train their partners so that they can provide the support needed to the customer. At the moment they do not search for partners themselves, this is because if you really want a certain partner it takes a lot of effort and time to try to get them over to become a partner but it mostly does not work. At this time every business can become a partner.

To further widen the network of the company they also use the VNO-NCW, which is a Dutch employers federation. This is mainly used to get in touch with politics, embassies, foreign business and larger corporations. Lastly the company goes to events like fairs and also trade missions from the Dutch government.

An example of the use of their network partners is that they have one partner that has given them the opportunity to go to the Mexican market and eventually got the Mexican government as a customer, using their program.

When comparing their company to their competitors they reckon that the technology and marketing are nearly as good but with a much smaller budget. This is also because they only have private money invested into the company so no big loans.

Because their product is a program or app it is downloadable via the internet so they do not do any market research before entering a new market. The only time they do market research is when they are searching for a new office location. Their goal is to eventually have around seven offices in the bigger markets in the world, from which they can provide support to every country in the world.

They do not find any surprises in the results/scores, the scores are similar to their expectation. They find that their technology is most important to perform internationally, after technology marketing is a really important and necessary part too because they have a lot of big international competitors that make the same kind of programs. Network is of less important because it does not generate a lot of international performance/revenue.

Interesting points

They are happy with the new privacy law in Europe, because for other companies outside of Europe this means that European products have a good quality and good safety.

(it also makes it more difficult for American companies to enter European markets because they do not like all those rules)

Appendix 8: Interview company 5

Company 5: configuration 2

Company 5 is a company that makes machines that make microscopic air bubbles mostly for medical use. It can be used to get a better picture with echoes. It is important that these bubbles have the same size, this is because the bubbles vibrate under an echo and in order to get the best results they have to move simultaneously. The company has 10 full time employees and they have four external self-employed or freelancers that also help them. In the company they have different divisions; R&D, production, quality, sales and marketing. Although this is the case because it is a small company it is important to being able to work together. This company relies on the sales of their machine, which is mostly done to universities and companies that develop or supply medicines or medical equipment. Because their product is used for medical use they need a certificate from the European Union (EU) with strict requirements for the product.

In the future this company wants to develop the machine further to make sure it is able to give medicine with the bubbles.

The company started from a technology that was researched during a study for the university of one of the directors. This means the basis of the technology was there when the company started and the network was used to start selling their product in the beginning.

When asked if this company sees one of the capabilities as being most important for international performance for the company they do not think that one of the capabilities is most important, you need all of them for the company to perform.

In this company they have a couple of people that are really important for the firm. Some examples are the CTO and Managing Director both with big networks and knowledge. For this high tech company it is also really important to have a couple of people who can explain their product and what it does in 'normal' language so that other people understand it. Most of the employees in the company are highly technical.

For marketing this company goes to fairs and use social media (Twitter, LinkedIn) on average 2 posts per week, although Twitter is only used when they go to fairs. At the moment two of the employees are fulltime working on sales and marketing. The difficulty they have with selling their product is that it is a big investment for the customers and that the companies or universities need to approve the purchase of such a machine internally. This process can sometimes take about nine months from researching the different machines in the market to get approved and get the budget.

A good improvement that this company has made not too long ago is that they started to make a list of applications which the machine can do, this makes it easier for the customer and therefor helps with selling the product. Before they made the list of applications they used to write cold acquisitions (getting in contact with potential new customers who you have never contacted before or are unfamiliar with your company), this gives a lot of leads for potential customers but not a lot of results. This has changed with the list of applications now they get less leads but more really interested customers, so this was a good change.

This company does not have different marketing activities comparing the different countries they work in this is because they all use English and get an EU certificate which means that their product can be sold in the whole European Union.

To gather information about the market and the technical developments in the market they mostly use their network, conferences and fairs but sometimes they also buy market reports but because these are expensive they do not do this regularly.

To make sure the marketing is up to date this company discusses and updates their marketing plans one or twice a year.

They have some competitors but their product is more complete.

Their product and thus the technology can be used for different kinds of markets because it can make different kind and sizes of bubbles. There are not really big technological improvements because if you want to change something to the product you need the license for the new product from the EU. To make changes it needs to be done according to rules, for example even changes to the label of the product need to be approved by the EU. The improvements they have made have been incremental improvements, there has not been a key point in time in which they made a big improvement to their technology, it has always been small improvements. This is how it is still done; small incrementally improvements to their product.

A big improvement they want to make to the product in the future is that it can also be used to deliver medicine with the bubbles.

The network of this company is of importance, their suppliers of the components for the product are really important to being able to produce the product. Although they currently use one supplier for the components needed for the production, they know that other companies could deliver their components as well. Another important feature of the network is the contact with hospitals and other clinics, they frequently have contact with hospitals and clinics this is needed so that they can carry out tests and clinical trials to test their product. Most of the contacts they get from hospitals or clinics with which they have worked previously.

Because the company needs to pass the regulations from the EU they have strict rules what they need for their product so when they search for a new partner or supplier the components need to pass these rules.

Normally their network grows naturally and they do not necessary search for partners. Although this is the case they have recently contracted a new CTO which has a large and new network for the company.

This company's technology and marketing is unique in the market according to them this is because most of their other competitors are large pharmaceutical companies with a large budget, so they have to do things different and innovative.

They find that the scores and results are a good reflection of the company although they find it interesting that their network score was so high already, also compared to the mean. They reckon that recently with the new CTO their network has grown even bigger and better.

Also they see that they fit in their configuration and that now it could perform international.

Another interesting fact is that this company wants to invest more in production to increase their production. To do this they want to develop a new production line but at the moment it is very difficult to find the properly skilled people to make this development.