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SABA KHALID

Exploring Firm Level Market  
Knowledge Competence and its Implications  
for the Speed and Success of Export  
Expansion

*A Mixed Methodology Study from  
the Software Industry*

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Reviewers

Professor Bent Petersen  
Copenhagen Business School  
Center for Strategic Management & Globalization  
Porcelænshaven 24  
2000 Frederiksberg  
Denmark

Professor Leila Hurmerinta-Peltomäki  
Turku School of Economics  
Department of Marketing  
Rehtorinpellonkatu 3  
20500 Turku  
Finland

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<b>Julkaisun nimike</b> Yritysten markkinatietoa koskeva kompetenssi ja sen vaikutukset vientitoiminnan laajentamisen nopeuteen ja onnistumiseen: ohjelmistoteollisuutta koskeva monimuotoinen tutkimusasetelma.		
<b>Tiivistelmä</b> Pienten ja keskisuurten yritysten (pk-yritykset) kansainvälistymistä on tutkittu yliopistoissa ja korkeakouluissa vuosikymmenien ajan. Aineistosta käy ilmi, että pk-yritykset ovat epäsuotuisassa asemassa monikansallisten yritysten aiheuttaman kasvavan kilpailun sekä tiedon, resurssien ja kompetenssin puutteen vuoksi. Lisätäksemme tietämystämme siitä, millainen kompetenssi mahdollistaa pk-yrityksien vientitoiminnan näistä rajoituksista huolimatta, on selvitettävä, millaisiin tietoihin ja valmiuksiin tällainen kompetenssi perustuu ja onko se yhteydessä vientitoiminnan laajentamisen nopeuteen ja onnistumiseen. Tätä tarkastellaan tässä tutkimuksessa kahden tutkimuskysymyksen kautta: 1) millainen tieto on erityisen merkityksellistä sen kannalta, miten pk-yritykset voivat laajentaa vientitoimintaa, ja 2) miten markkinatietoa koskeva kompetenssi vaikuttaa vientitoiminnan laajentamisen nopeuteen ja onnistumiseen?  Teoriakehyksen pääkäsitteet perustuvat markkinasuuntautuneisuutta käsittelevään aineistoon. Resurssipohjaiseen, tietopohjaiseen ja organisatoriseen oppimiseen perustuvia näkemyksiä käytetään kuitenkin pääkäsitteiden tukemiseksi. Tutkimuksessa käytettiin jaksottaista monimenetelmäistä tutkimusasetelmaa ( <i>sequential mixed methodology</i> ). Ensin kerättiin kvalitatiivista tietoa kahdesta pk-yrityksestä vientitoiminnan laajentamisen kannalta merkityksellisen tiedon määrittämiseksi. Toiseksi kehitettiin tiettyjä hypoteeseja, jotka yhdistävät viennin laajentamiseen liittyvän potentiaalin sekä laajentamisen nopeuden ja onnistumisen. Tätä vaihetta varten kerättiin tietoa sadasta ohjelmistosta myyvästä yrityksestä Pohjois-Euroopan, Euroopan, Yhdysvaltojen ja Tyyntenmeren Aasian alueelta. Tutkimustietoja analysoitiin tilastollista korrelaatiomenetelmää ( <i>partial least squares method, PLS</i> ) käyttäen.  Tutkimustulokset tukevat olettamusta, että kokemuksiin perustuva tieto ja asiakkaiden tarpeiden tuntemus vaikuttavat vientitoiminnan laajentamisen kehittämiseen. Näistä kahdesta kokemuksiin perustuva tieto vaikuttaa merkittävästi varhaiseen markkinoilletuloon, kun taas asiakkaiden tarpeiden tuntemus liittyy selvästi vientitoiminnan laajentamiseen myöhäisemmässä vaiheessa. Vaikka yhteistoimintaan perustuvaa oppimista ( <i>alliance learning</i> ) koskeva valmius vaikuttaa tärkeimmältä kaikista tutkimusasetelman valmiuksista, koska se vaikuttaa sekä laajentamisen nopeuteen että sen onnistumiseen, yhteistoiminnan hallinnan ( <i>alliance management</i> ) ja uusien tuotteiden kehittämisen on havaittu olevan merkittäviä vientitoiminnan varhaisen laajentamisen kannalta. Tutkimuksessa tehtiin päätelmiä, joita yritysten johtajat voivat hyödyntää suunnitellessaan vientitoiminnan aloittamista ja laajentamista ulkomaisille markkinoille.		
<b>Asiasanat</b> markkinatietoa koskeva kompetenssi, vientitoiminnan laajentaminen, monimenetelmäinen tutkimusasetelma, ohjelmistoteollisuus		



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<b>Abstract</b> <p>Internationalisation of Small- and Medium-Size Enterprises (SMEs) has been a subject of academic research for several decades. The literature points out that SMEs are at a disadvantage due to increasing competition from Multinational Enterprises (MNEs), a lack of knowledge, resources and competencies. However, to increase our knowledge of what competence enables SMEs to export despite these constraints, we must understand what knowledge and firm capability imparts such competence and whether this competence is related to the speed and success of export expansion. This is explored in this study through two research questions: 1) What knowledge are particularly relevant to how SMEs can expand exports? 2) What are the implications of market knowledge competence on the speed and success of export expansion?</p> <p>The main constructs of the theoretical framework are developed from market orientation literature; however insights from resource-based, knowledge-based and organizational learning perspectives are used to further support the main constructs. The study employed a sequential mixed methodology research design. First, qualitative data was collected from two SMEs to identify the knowledge relevant for export expansion. Second, specific hypotheses were developed linking the export expansion capabilities and the speed and success of this expansion. For this phase, data was collected from 100 software vendor firms from Northern Europe, Europe, USA and Asia Pacific. The data collected through this survey was analysed using the partial least squares (PLS) method.</p> <p>The findings reveal that the experiential knowledge and knowledge of customer needs indeed influence the development of export expansion capabilities. Of these two, experiential knowledge significantly influences the speed at the early market entry whereas knowledge of customer needs is significantly related to subsequent export expansion. While the alliance learning capability appears the most significant of all capabilities in the research model influencing both the speed and success of expansion, alliance management and new product development capabilities are found to be significantly relevant for early export expansion. This study generated implications for managers planning to initiate and expand exports in foreign markets.</p>		
<b>Keywords</b> Market knowledge competence, export expansion, mixed methodology, software industry		



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MKC	Market knowledge competence
SCA	Sustained competitive advantage
SME	Small- and medium-sized enterprise

# 1 INTRODUCTION

## 1.1 Background of the study

Small-and medium-sized firms (SMEs) from the software industry, despite their size, and age are increasingly involved in exporting activity. The size is no longer a barrier for SMEs to export (Bausch and Krist 2007; Calof 1993; 1994), and with a small but high volume of exports SMEs from the software development industry are contributing to economic growth in many countries. The software industry is one of Finland's rapidly growing industrial sectors. A successful international expansion of software development SMEs is determined by an excellent product and an understanding of software business issues. While most of the SMEs from the software industry are small with limited experience of the international market, dynamic changes in the global software market pose threats for international expansion as well as new growth opportunities.

Given the fact that SMEs' lack of resources is a barrier to export expansion, internationalizing SMEs also lack foreign market knowledge. The growing body of literature analyzing strategic assets and intangible resources such as knowledge of export expansion (Hitt, Bierman, Uhlenbruck, and Shimizu 2006; Peng 2001) identifies that firms look abroad to exploit firm-specific assets and take advantage of market imperfections. The fundamental questions in strategy and international business literature concern why, relative to other firms, some firms possess unique tangible and intangible resources that incur foreign direct investment advantages and why firms choose certain locations over others to exploit the firm-specific advantages (Dunning 1995). The interest of the present study goes beyond these fundamental questions. Instead of why, the focus of the study is on what - with a specific interest in what unique intangible resources determine firm-specific advantages in terms of export expansion after entry into a foreign market. Thus this study focuses on subsequent export expansion after foreign market entry and attempts to link the role of intangible resources specifically to the ensuing export activity.

Studies related to intangible resources (the resource-based view and its offsprings (core competence, dynamic capability and the knowledge-based view) and international expansion emphasize firm-level determinants when analyzing a firm's expansion into foreign countries (Peng 2001). These studies commonly view exploitation of the available firm-specific advantages in another location in a way that gives further firm-specific rewards and assume that the tacit knowledge firms accumulate about their own firm-specific resources and strategic assets as well as

an expert ability to leverage such knowledge, provides a surplus of tacit knowledge during internationalization. The surplus of tacit knowledge leads to competitive advantage in foreign markets (Mitchell, Smith, Seawright and Morse 2000; Peng and York 2001; Peng and Wang (2000)). As other firms move abroad to that country, knowledge spillovers are expected to lead to opportunities for future growth (Peng and Wang 2000). Thus, expansion in foreign countries either by exports or through foreign direct investment is a way of accessing the local market knowledge in those countries (Peng 2001). However, according to this view, only firms with an existing firm-specific advantage due to their strategic resources and capabilities will be able to exploit the local market knowledge. Therefore, market entry and subsequent expansion is not only pulled by the resources and capabilities available in foreign countries but also pushed by firm-specific advantages.

Hitt et al. mention that the specific assets which firms utilize for entry also facilitate subsequent expansion to achieve the targeted export goals of an organization in foreign market, however, 'little is known about the specific assets firms need to successfully enter international markets' (2006:1137). Prior research has identified several types of intangible key resources for export expansion such as the information processing ability of firms or individuals (Alvarez and Busenitz 2001), the possession of unique information, and human and relational capital. Some other studies emphasize the dynamic capability - knowledge of the processes as an intangible resource. It specifically refers to knowledge of the processes which firms use to alter and manipulate the resource base to identify strategic assets and exploit firm-specific advantages in foreign countries (Eisenhardt and Martin 2000). These specific processes are path-dependent, embedded in the histories of firms and are idiosyncratic in nature. As Eisenhardt and Martin (2000) consider the dynamic capabilities as the firm's internal processes to integrate, reconfigure, gain and release resources, a lack of knowledge of dynamic capabilities may impact the resource reconfiguration process. Thus, a firm may not achieve the predicted and expected outcomes merely first of all, by altering the resources without a clear understanding of the specific intangible resources that need to be altered and secondly, without an understanding of the organizational processes that are used to alter the intangible resources.

Similarly, Eisenhardt and Martin (2000:1117) conclude that dynamic capabilities per se, cannot be utilized to exploit firm specific advantages in high-velocity industries. In fact, the value of dynamic capabilities lies in using and understanding the knowledge of a firm to configure and alter resources purposefully to generate strategic value in a timely and more astutely manner than the competitors. In a dynamic environment the expansion and growth of firms may depend on a firm's



ability of generating new knowledge to deal with the specific situation. When firms lack such knowledge, export expansion-related best practices may not bring the desired outcome. Consequently, such an understanding enables firms to integrate, recombine and release resources and develop resource configurations resulting in competitive advantage. Thus, the competitive advantage lies in using the dynamic capabilities to create effective resource combinations.

In this study export expansion is seen as a result of a dynamic capability of a firm and the emphasis here is on intangible resources that firms utilize for expanding exports within the same or in new foreign markets. One such example of intangible resource could be market knowledge. Further, the export expansion is linked to the knowledge of the processes a firm uses to acquire, shed and release export expansion related resources. Thus the other kind of intangible resource could be the organizational knowledge specifically related to such processes. As this dynamic capability is linked to knowing the right resources related to export expansion, it is assumed that knowledge of such resources and processes will lead a firm to a faster and more successful expansion of exports. Therefore, the fundamental assumption of the study focuses on the ability of the firm to possess and reconfigure market knowledge through organizational processes into specific export expansion-related intangible resources. Building on intangible resources is considered to lead to further specific intangible resources such as capabilities that enable a firm to maintain the firm specific advantages. This ability of firms is mentioned as the market knowledge competence in research questions of the study. Further, the study analyzes the implications of intangible resources on the speed and success of the export expansion.

## 1.2 Research questions and objectives

This study is descriptive and exploratory in nature. The main purpose of the study is to explore the ability of the firms to possess, acquire, and reconfigure the intangible resources relevant to export expansion into further firm-specific intangible resources. The specific intangible resources that may lead to further intangible firm-specific resources under investigation in this study are organizational and the market knowledge. Therefore these will be analyzed at the firm and market levels. The intangible resources are assumed to be the source of further intangible resources of export expansion capabilities which enable firms to retain competitive advantage in expanding subsequent export in foreign market. In line with the scope and the nature of the study, it is therefore divided into two phases. The first phase of the study will attempt to analyze from the perspective of software development firms, the ability of the firms to acquire, possess and reconfigure the in-

tangible resources relevant for export expansion. Thus the first research question of the study is given as follows:

1. Does market knowledge competence of software development firm, as an intangible resource, contribute to export expansion?

Even though this study focuses on the organizational and the market knowledge, a specific description of what kinds of knowledge, market knowledge competence for SMEs from the software development industry consists of, is not known at this stage. Further, when firms build on the knowledge relevant to export expansion, what further intangible resources, such as firm-specific capabilities it may lead to is not known as well. Thus, it seems reasonable to assume that market knowledge competence can be analyzed by investigating first, what specific knowledge software development firms required in order to expand exports. Second, in what functional units such as production, marketing or R&D firms utilized this knowledge to develop further firm-specific capabilities that potentially may influence on export expansion.

Further, it is assumed that the market knowledge relevant to export expansion may not be readily available at the firm level. Firms would make efforts to acquire and possess knowledge of the foreign market from various sources such as their customers or their foreign partners and then utilize it to develop export capabilities. Thus, interaction between market knowledge and organizational processes of market knowledge acquisition needs to be observed. Interaction between market knowledge and organizational processes of knowledge acquisition and coordination may determine how well a firm is capable of internalizing the market knowledge and subsequently using it for export expansion capabilities. Therefore, to utilize the knowledge which is not available within the firm, it needs to be internalized first. Thus, the factors facilitating or hindering acquisition of market knowledge and its utilization at the firm and market levels need to be examined too. These factors will be called as the contextual factors.

Thus, to approach the first research question the following research objectives are set for the first phase of the study:

- To analyze what knowledge particularly relevant to how software development firms expand exports constitute the market knowledge competence of such firms
- To explore how market knowledge competence be relevant to firm-specific export expansion capabilities

- To analyze factors at firm and market levels that facilitate and hinder the internalization of market knowledge

Market knowledge competence is the independent whereas export expansion is the dependent variable of the study. The unit of analysis in the study consists of organizational as well as the market knowledge. The market knowledge competence of firms can represent how effectively firms acquire market knowledge, acquiring from various sources, its development, internalization and utilization for export expansion-related capability development. This phase of the study explores the independent variable in detail and is qualitative in nature.

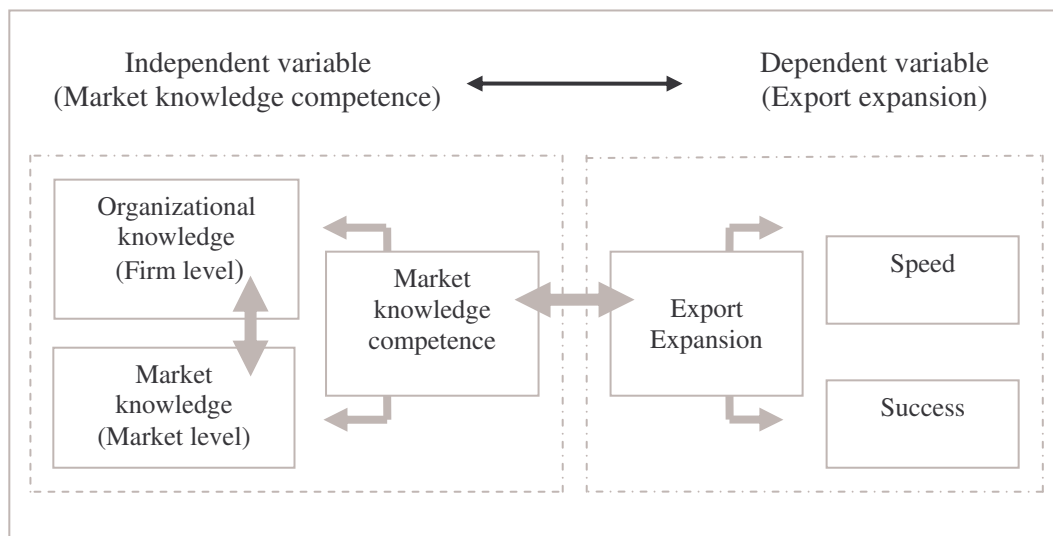
The second phase of the study will attempt to link market knowledge competence with the export expansion. More specifically, export expansion capabilities will be linked with the speed and success of the export expansion (Figure 1). The second research question related to the second phase is given as follows:

2. What are the implications of export expansion related capabilities for the speed and success of export expansion?

This research question will be approached with the following research objectives:

- To what extent does export expansion related capabilities relate to the speed of foreign market expansion?
- To what extent export expansion related capabilities relate to the success of the export expansion?

Figure 1 describes the causal relationship between the independent and the dependent variables of the study.



**Figure 1.** The causal relationship between independent and dependent variables.

### 1.3 Key terms

#### **Export expansion**

In line with the dynamic capability view (Barney 1986; Grant 1996a; Pisano 1994) and supported by Eisenhardt and Martin (2000), export expansion in this study is viewed as a result of a dynamic capability of a firm and defined as *reconfiguring, gaining and releasing export-related resources for new knowledge creation and opportunity development in foreign markets*. Thus, export expansion can be seen as an organizational level activity by which firms achieve new resource combinations to develop certain capabilities for developing and implementing strategies to identify and exploit export potentials in foreign markets.

The dynamic process of export expansion by configuring the resources is time-dependent and experience-based. Further, not all firms are successful in their attempt to identify the ‘right configuration’ of resources to develop export expansion capabilities and achieve the export objectives. Thus, export expansion will be analyzed in two dimensions: export expansion speed and export expansion success.

#### *Export expansion speed*

The first dimension of export expansion is the export expansion speed – the time duration. Due to the fact that technological products are quickly replaced by com-

petitive products and hence possess a shorter life span, how efficiently organizations plan and coordinate their activities towards selling the product to foreign customers is critical. In this study, contrary to absolute time duration, speed is conceived as a subjective phenomenon. It is considered as an expectation by managers for achieving pre-planned key foreign objectives such as meeting the new product development time-line in relation to competition and entering the market when there are still sales opportunities etc. In this study, speed of export expansion is conceived as *'relative time duration that managers expect for achieving the targeted sales in foreign countries.'* Measuring the speed according to this definition may indicate how smoothly the underlying events occurred in organizing knowledge for export expansion. However an investigation of the underlying process is not aimed at. Further, contrary to other studies that consider speed in terms of the pace by which firms commit resources in foreign markets (Petersen and Pedersen 1999), speed as conceptualized in this study, does not directly analyze the pace of resource commitment. However, targeted sales only occur as a result of resource commitment. Thus, instead of analyzing pace of resource commitment only its outcome is emphasized.

Although speed does not clearly match a temporal perspective, the logic is similar. Time has been identified as a temporal lens which facilitates the understanding of how organizations function (Ancona, Okhuysen and Perlow 2001a; Riolli-Saltzman and Luthans 2001). It is a common misconceived notion that taking a temporal perspective merely means looking into processes and practices for organizational functions during a certain given time period. However, the temporal lens provides a deeper framework for explaining and understanding organizational behaviour as it links various interdependent variables. The interdependent variables explain the sequence, pacing and duration of changes occurring in the firm, the alignment of the historic and present processes and its implications for future consequences. For example, given X when will Y occur? (Mitchell and James 2001). Assuming the duration of X and Y different, examining X may explain lags in the occurrence of Y. Again, the meaning is not to find out the right time of the occurrence of Y, but to understand lags in organizational behaviour that impact on the occurrence of Y fast or late. These kinds of temporal issues have been addressed in very few empirical studies (Mitchell and James 2001; Acona et al. 2001). Similarly, analyzing the speed of export expansion may depict the problems, processes and changes that firms have faced in organizing and developing knowledge for export expansion.

*Export expansion success*

Success is largely a debatable issue and a subjective phenomenon to firms. In the context of exports, success is rather simply understood as continual sales of products to customers in foreign markets (De Clercq, Sapienza and Crijns 2005; Riolli-Saltzman and Luthans 2001). This study adopts this view as such, and defines export success for SMEs from the software development sector as '*continual lead sales in foreign markets.*' However, lead sales should not be confused with comparative sales with competitors. In the context of software business, securing a number of customers through initial sales, selling updates to them as well as continually securing an even larger number of new customers is important. Thus success is more related to possessing prospective customers in the pipeline rather than just serving the existing customers.

The reason why this study uses the term export success as compared to export performance is conceptual. Previous literature on the export behaviour of firms has commonly dealt with the question of what factors influence the export performance of firms (Bijmolt and Zwart 1994; Bilkey 1978; Yeoh 2004). However, these studies differ in the way the question has been approached, focusing on either external and internal factors or both. Performance is a multi dimensional concept, meaning that the joint outcome of various factors will influence the overall performance of the firm. In that sense, referring to export performance can implicitly be interpreted as the overall performance of the firm. However, export success in the context of this study limits the theoretical and empirical analysis to outcomes caused by a number of factors which may not directly or indirectly relate to the overall performance of the firm. Examples are behavioural elements, expectations and internal routines of the firms etc.

From the conceptualizations of the speed and success in the context of this study it appears that success is largely dependent on the speed of export expansion or vice versa. However this study would aim to analyze both the dimensions independent of each other.

**Firm assets**

Following the current resource and knowledge-based views and the theory of the growth of firms, firm assets in this study are viewed as inherently intangible in nature and collectively consist of resources, competencies, and capabilities. Although intangible firm assets are intricately linked and overlapping with each other, a distinction between them is presented.

### Resources

Barney (1991) refers to firm resources as physical capital resources, human resources and organizational resources. Physical capital resources are tangible whereas human and organizational resources are considered as intangible and imperfectly imitable resources. Firm resources enable it to implement strategies to exploit internal strengths and to respond to environmental opportunities while neutralizing external threats and avoiding internal weaknesses.

The classification of firm resources into three categories and their characteristics with examples are shown in Table 1 (author's own creation from Christensen 1996:113).

**Table 1.** Classification of firm resources

Physical capital resources	Human resources	Organizational resources
<i>Tangible resources</i>	<i>Intangible resources</i>	
Flexible, mobile	Immobile	Tradable/non-tradable
Accessible at factor markets	Accumulated in-house	Accumulated in-house
Imitable	Imperfectly imitable	Imperfectly imitable
Substitutable	Non-substitutable	Non-substitutable
Examples:		
- a firm's plant, physical technology and raw materials	- training, experiences, judgement, intelligence, relationships and insights of managers/workers	- a firm's reporting structure, planning, controlling and coordination systems, informal relations within a firm, between a firm and its environment  - Proprietary assets such as trade mark, reputation, patents, contracts and trade secrets

Barney (1991) includes firm capabilities, organizational processes, firm attributes, information and knowledge controlled by a firm as intangible resources. However, follow-up studies mention that as capability development involves complicated processes and is path-dependent, considering them as just another resource is over simplistic notion (Prahalad and Hamel 1990; Christensen 1996). Grant (1991) mentions, 'while resources are the source of a firm's capabilities, capabili-



ties are the main source of its competitive advantage.’ These studies propose that on their own, only few resources are productive and all resources cannot generate capability unless combined with other resources and used purposefully. Only through the cooperation, coordination and integration of a team of resources, they can be utilized efficiently to gain an imperfectly imitable competitive advantage (Prahalad and Hamel 1990; Christensen 1996; Grant 1991). Further, Grant (1991:118-9) describes a capability as a ‘capacity for a team of resources to perform some activity or task.’ A capability enhances the value of a resource and is not just a resource, rather consists of a combination of several resources integrated together (Makadok 2001). Thus, resources tangible or intangible, such as knowledge act as the basic unit of capabilities, where as the capabilities can be considered as superior resources of a firm.

Christensen (1996:114), in an attempt to define capability distinguishes between a capability and the competence based on the dimensions resource combinations are created and directed at. He suggests that firms organize and direct a cluster of resources for productive services in two complementary dimensions: a functional/technical dimension and an organizational/managerial dimension. A capability is a lower-order functional or inter-functional technical capacity to mobilize resources for productive purposes. Due to its focus on clustering of the resources, the boundary of a capability may, however, sometimes reach beyond the firm boundary and into inter-firm or other types of external relations. Thus capabilities reflect specialized functional domains. Further, capability is considered as lower-order capacity because when a firm possesses a capability, the rest of the task is to manage the capability and its services, therefore managerial dimensions are narrower after it is developed and applied. The trade-off balance between the two dimensions may vary greatly from firm to firm and also suggests the distinction between capabilities and competences (Christensen 1996:115).

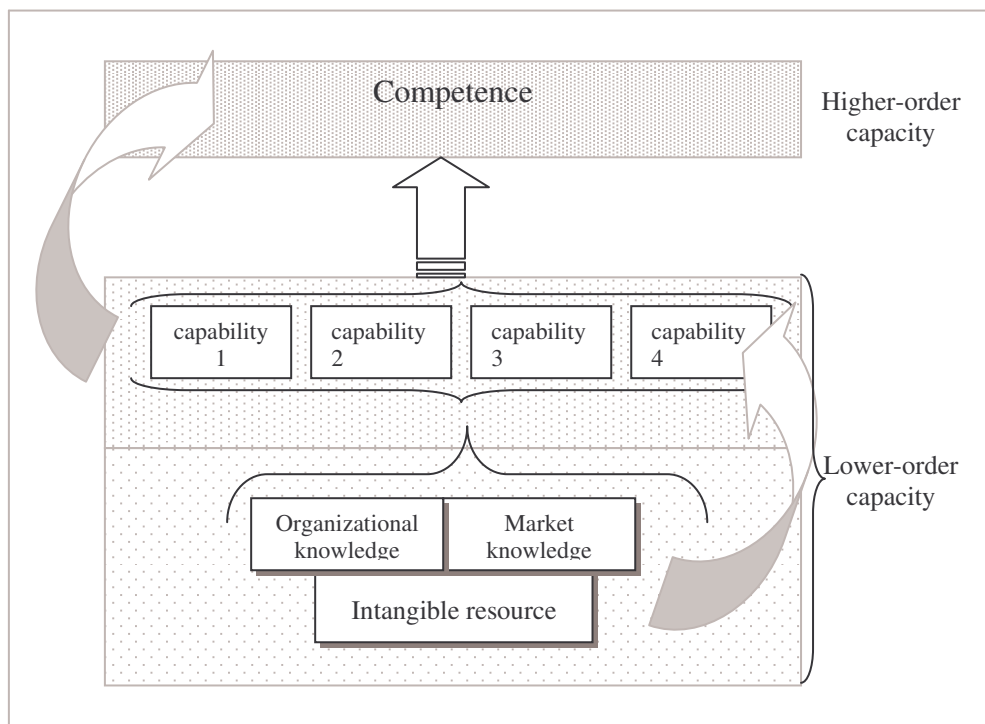
Competence, in Christensen’s opinion on the other hand, is a ‘higher- order managerial capacity to mobilize, harmonize and develop resources and capabilities to create value and competitive advantage.’ Compared to the specialized lower-order capabilities competence reflects broader managerial domains and an overall capacity of the firm to direct its resources and capabilities for some common purpose. Christensen mentions overall corporate management as one such example of competence.

This suggests that a firm’s competence exist at resources, capability and firm levels. At the resources level it is the ability of the firm to possess such resources that are capable of generating competitive advantage when combined together. At the capability level, it is the ability of the firm to create, combine, or alter re-



source combinations so as to develop specific capabilities. Further, at this level it is the ability of the firm to under the processes required to create, combine, or alter resources. At both of these levels, capacity of a firm is considered a lower-order capacity. At the firm level, however, it is the ability of a firm to mobilize and then manage a combination of different resources as well as a combination of capabilities for some activity or a task. This capacity is higher order in nature and is usually termed as the competence of a firm. Therefore, capability of a firm is not always given, but rather, firms develop it deliberately by learning to create combinations of resources (Prahalad and Hamel 1990). Thus resources, capabilities and the competence are interdependent on each other.

Figure 2 presents the multidimensional nature of firm competence. It shows intangible resources of a firm are inter dependent on each other and act in a cyclic manner as intangible resources lead to creation of further intangible resources. The competence as multi-dimensional phenomena consists of knowledge as intangible resources and the capabilities.



**Figure 2.** Multidimensional nature of firm competence.

This figure also indicates that a capacity of the firm can be seen in two dimensions. When directed towards identification of intangible resources that can be used as a source for capability development and knowing the processes to configure resources into capability, the capacity of the firm is lower-order. On the other hand, when directed towards combining and managing resources and the capabili-

ties simultaneously, it is regarded as a higher order capacity. This is because; the complexity of the knowledge involved in the process gradually increases.

In this figure the arrows indicate that while a combination of different kinds of resources lead to firm capabilities, when firms combine and deploy the capabilities in different areas, a competence of the firm may originate. The shaded area in the back ground refers to the knowledge involved in the transformation of resources into capabilities resulting in competence of a firm. A loose background pattern in the intangible resource area of the figure denotes that firms possess relatively less knowledge at the early stages of resource conversion into capabilities. However with experience and time the degree of knowledge gradually increases. This is shown by more integrated background pattern within the capability block in Figure 2. It is difficult to distinguish the time duration between capability development and deployment graphically. Further, the processes for combining different kinds of knowledge, and the processes of conversion of the resources into capabilities are not investigated in this study. However insights from organizational learning perspectives are used to analyze the link between resources, capabilities and competence. Additionally, it is also acknowledged that separating firm competence in a graphical manner does not represent the real business situation. In practice, firms, especially bigger firms, would be simultaneously involved in all the stages of resource identification, creation, alteration etc. However, at the early stages of a SME development, the multidimensional nature of firm competence may appear more visible.

The role of knowledge as an intangible recourse is however, interesting. Knowledge is embodied in competence as well as capabilities and cannot be separated from them. Knowledge of a firm is collectively considered as an organizational capital, and an input to resources, capabilities and the competence of a firm. Knowledge of a firm in the form of patents also acts as a tangible resource. While some studies describe competence as idiosyncratic knowledge of how to perform activities (Foss 2002), other studies (Kogut and Zander 1992) consider firm as repositories of different types of knowledge such as knowledge about the abilities of employees, human capital of employees, and informational capital and knowledge of how to perform activities.

On the basis of the above distinction, definitions of the terms ‘knowledge’ ‘capability’ and ‘competence’ as used in this study are given below:

### **Knowledge**

Knowledge of the firm is seen as a combination of organizational and the market knowledge. Although market knowledge once internalized becomes the organiza-

tional knowledge, it will be treated separately for analysis purpose. Organizational knowledge specifically refers to the knowledge of organizational process that firms use to acquire, shed and release export expansion related resources. Organizational knowledge seems to be involved from the resources to capabilities as well as competence levels.

Market knowledge in this study is seen as knowledge of customers' needs. This will be referred to as customer knowledge in short. As market knowledge may differ for firms at different stages of market development, this definition is specific to the context of this study only.

### **Capability**

Based on the definition of capability presented by Christensen (1996), in the context of export expansion, capability is conceived as 'capacity of a firm for structuring and orienting clusters of resources at the functional levels such as new product development, marketing and coordination with external partners – and especially their services for export expansion purposes that potentially provide the firm with a competitive advantage.'

In this study, the term 'export expansion capability' will denote the specific four kinds of capabilities under investigation in the main empirical part of the study, whereas the term 'export capabilities' will refer to capabilities of the exporting firms in general.

### **Competence and the market knowledge competence (MKC)**

Based on the earlier definition of competence - 'higher- order managerial capacity to mobilize, harmonize and develop combinations of resources and capabilities to create value and competitive advantage,' market knowledge competence in this study is conceived as 'the capacity of a firm to use resources to collect and utilize the firm- and market-level strategic knowledge for the purpose of developing export expansion capabilities' (Cavusgil and Li 2000).

The conceptualization focuses on the administrative and allocative ability of the managers to identify a particular cluster of resources that can be utilized in a new given situation or task, and to mobilize them with an objective of attaining competitive advantage. Further, Christensen's conceptualization also focuses upon the transactional ability of the managers – deciding which resources out of the cluster of resources to make or buy in-house or in partnership. While this study follows the conceptualization of competence by Christensen (1996), due to the limited

scope of the study, the administrative and allocative ability of the managers as well as the transactional ability will not be explored.

## 1.4 Research strategy

The exploratory and descriptive nature of the research questions of the study call for a mixed methodology approach. Furthermore, it was noted from the initial literature review that prior research contains fragmented views about the organizational and market-level strategic intangible assets which can be related to the speed and success of exporting. A straight forward analysis of the relationship between foreign market knowledge competence and the speed and success of export expansion may give still further fragmented results. It is considered worthwhile first to investigate, through a preliminary case study analysis, the intangible resources such as market and the organizational knowledge that firms from the software development industry require in order to develop specific export expansion capabilities. Then the preliminary findings of the case study analysis can be used to develop specific hypotheses at the firm and market levels and a survey instrument for the purpose of generalizing the preliminary findings for a larger sample. Only then are the implications of such resources and knowledge expected to be logically related to the speed and success of export expansion.

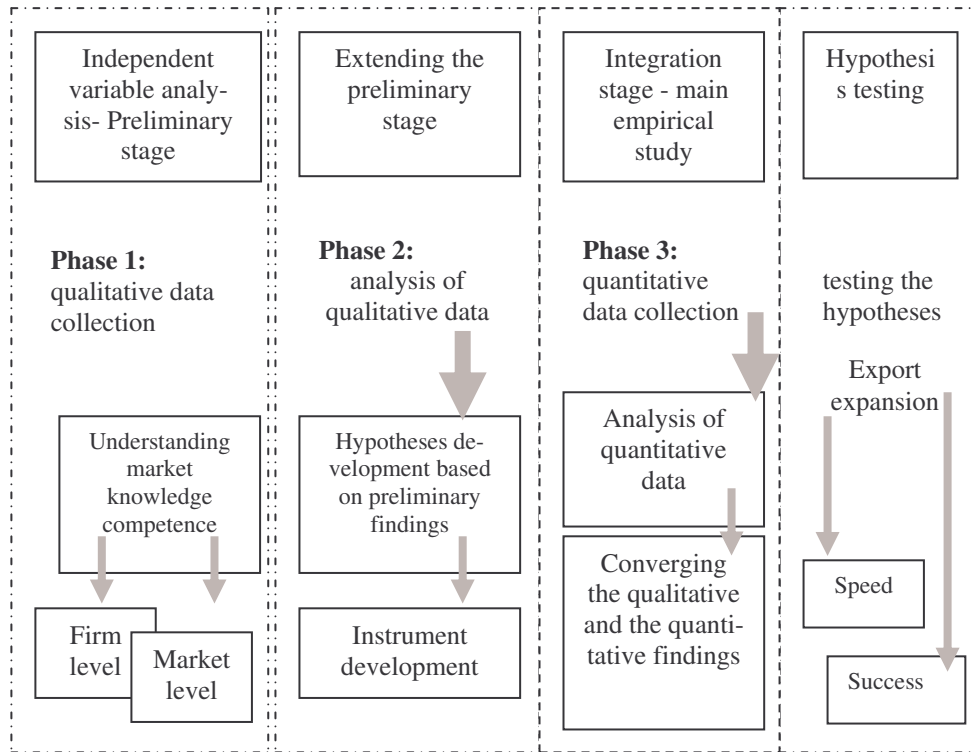
As shown in Figure 3 the data collection and data analysis has been divided into three phases. The research question and the research objectives guide the data collection methodology for the first and the third phases of data collection.

The first phase of the study is dedicated to exploring the independent variable in detail. This phase will consist of qualitative data collection from a series of interviews with two comparative case companies. The first phase is topic related (Hurmerinta-Peltomäki and Nummela 2006) and is used to generate a deeper understanding of the market knowledge competence phenomena within the specific context of software vendor firms.

In the second phase the findings of the preliminary case study analysis are utilized to develop hypotheses and the instrument to test the hypotheses. Thus, the second phase will build on the preliminary findings of the first phase for developing hypotheses and a survey instrument for the purpose of collecting quantitative data for the second research question and its research objectives. This is termed as 'extending the preliminary stage'.

In the third phase findings from the previous phases are integrated and linked to the dependent variable and is termed the 'integration stage'. In fact, the first and

third phases are data collection-based. However, as the third phase is more about the converging of data from both phases by linking it to a dependent variable, this phase is termed ‘the main empirical study’ (Creswell, Clark, Gutmann, and Hansen 2003).



**Figure 3.** Research strategy and phases of data collection.

One of the reasons for using mixed methodology in this study is the pragmatic approach (Creswell 2003:11). In this approach, the research question/problem of the study is considered important. For the purpose of this study understanding MKC from various perspectives is important, thus different methods should be used to approach it from various angles. In line with a critical realist perspective, the reality about market knowledge competence on the basis of managerial understanding needs to be explored first before testing it statistically with the speed and success of export expansion for a larger sample. This has also been the intension of the author. Hurmerinta-Peltomäki and Nummela (2004) also maintain that a mixed methodology provides a deeper, broader and a more illustrative description of the phenomenon. Moreover, due to the limited and fragmented information given in the existing literature on the concept of market knowledge competence, it is considered appropriate to combine a ‘multimethod matrix’ so as to explore the problem more thoroughly (Creswell 2003:15).

The most commonly used word for a multimethod matrix is ‘triangulation’ (Jick 1979). Triangulation is a means of seeking convergence across quantitative and qualitative approaches. The current terms for triangulations are ‘mixed methods’, ‘convergence’, ‘integrated approach’ and ‘combined approach’ (Creswell 2003: 1994). Creswell reports three general strategies for mixed methodology-based data collection as sequential, concurrent and transformative procedures. In the sequential procedure, the findings of one method are elaborated with the help of data from another method. In other words, the data collection process may begin with the qualitative study for exploratory purposes and follow up with a quantitative method with a large sample to generalize the preliminary results of the first phase. This study uses the sequential procedure as a mixed method strategy.

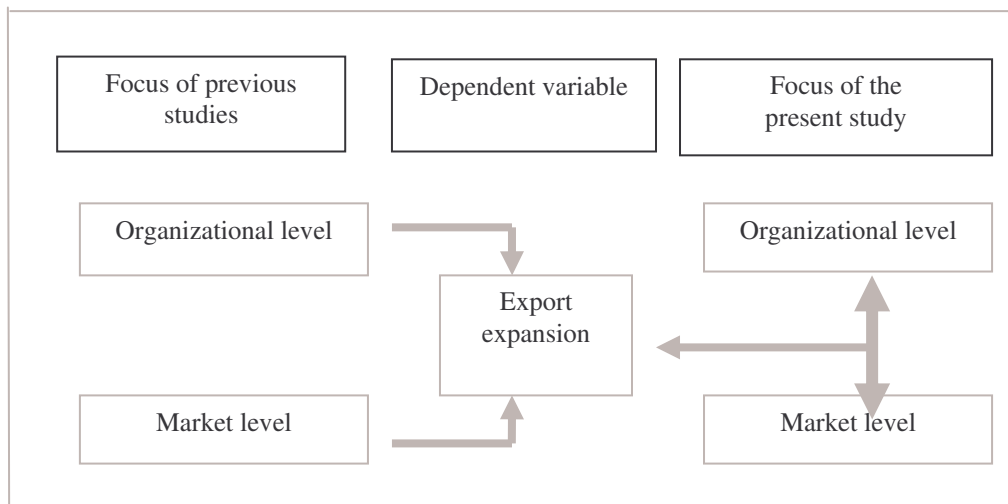
## 1.5 Preliminary contribution of the study

Knowledge acquisition and exploitation as a key resource for sustained international competitiveness is a well-established fact in international business literature (Rodriguez and Rodriguez 2005; Yli-Renko, Autio and Sapienza 2001; Tsai and Ghoshal 1998; Barney 1991). Cavusgil and Li (2000) explicitly mention that market knowledge competence is one of the most importantly assumed constructs in international business literature. However, its effects on exports are not empirically tested due to an insufficient understanding of its dimensionality. This notion plainly calls for added theory development as well as for more empirical evidence regarding market knowledge for export expansion purposes.

Some *theoretical* gaps can be identified based on the insufficient understanding of the foreign market knowledge competence dimensionality at the firm and market levels, and lack of empirical evidence of its implications with the speed and success of export expansion in the existing literature. The first theoretical gap that can be identified from the existing literature suggests that previous studies either focus on the firm or on market levels separately to analyze the market knowledge of the firms. Therefore a holistic view of the intangible firm assets from organizational and market sources and how they constitute the market knowledge competence of a firm, when utilized in the form of export expansion capabilities is lacking in the literature. There is a need to integrate the holistic view of the sources of the knowledge needed for export expansion. Second, despite its stated importance (Burpitt and Rondinelli 2000; Seringhaus 1993; Toften and Olsen 2003), the phenomenon of market knowledge competence appears to be the focus in only a few empirical studies. Third, empirical findings concerning relations between market knowledge competence and export expansion in terms of success and speed are scarce, even though there seems to be agreement that such relationships exist

(Hart and Tzokas 1999; Seringhaus 1993; Souchon and Diamantopoulos 1999; Toften and Olsen 2003).

A comparison of the focus in present and previous studies is shown in Figure 4. Further, the joint arrow from organizational and market levels towards the export expansion indicates that this study will analyze the export expansion by employing a holistic view of the sources of the intangible knowledge needed for export expansion.



**Figure 4.** Comparison of the focus in present and previous studies.

A number of previous studies linking firm-specific factors to the international growth and expansion of SMEs relate organizational learning as one of the main factors influencing market knowledge and view exporting activity as a process driven by internal factors (cf. Ling-Yee 2004; Ogbuehi and Longfellow 1994; Autio, Sapienza and Almeida 2000; Burpitt and Rondinelli 2000; Inkpen 1996). Organizational learning in these studies is considered as a firm-level construct explained from the perspective of organizational change, adaptation, routines, past history, target orientation and expectations of firms. Alternatively, another research tradition concerning firm-specific factors, views export expansion as a knowledge development process (Johanson and Valhne 1977). This knowledge is the knowledge of the foreign market that firms develop while operating in it. A large number of follow up studies (Johanson and Valhne 1990; Young, Wheeler and Davis 1989; Engwall and Wallenstål 1988; Nordstrom 1991; Linqvist 1991; Johanson and Sharma 1987; Benito and Gripsrud 1992; Luostarinen 1979; Petersen and Pedersen 1999; Björkman and Eklund 1996) confirm this assumption.



The internationalization process model (Johanson and Valhne 1977) relates learning with an increasing degree of resource commitment in foreign markets. The model assumes that market knowledge in turn affects the current activities and commitment of resources at the firm level. Morgan and Katsikeas (1998) also relate a lack of export market knowledge as one of the major exporting problems and impediments to export development. These studies however, do not consider the acquisition and internalization of knowledge acquired from the market-level either through experience or via partnership sources and focus solely on the organizational knowledge.

From the mentioned studies it becomes clear that a positive relationship in knowledge development and increased export intensity exists. It is however surprising that given the commonly expressed significance of knowledge as a source of sustainable competitive advantage, conceptual limitations as to what different combination of intangible resources such as knowledge and capabilities constitute market knowledge competence of firms and how market knowledge development can be used as a source of specific export expansion capabilities still remain underexplored. This demands more research on the subject. For this reason, Morgan and Katsikeas (1998) call for additional empirical research to identify the firm-specific factors on market knowledge development (Cavusgil and Li 2000; Ling-Yee 2004).

The implications of the contribution of the study can be interpreted at the *practical* level as well. Problems faced by firms in identifying and creating knowledge related to export expansion may imply two issues; first, firms have an ambiguous idea of the necessarily required knowledge and, second, firms lack key mechanisms or processes used in the acquisition and development of market knowledge. Both practical issues are interdependent and may significantly affect development of exports. This is, however, expected to be profound if export expansion for SMEs from the software development sector is taken into consideration. This is explained next.

Internationalisation for such SMEs is mostly an export agreement for the sale and services of the software via resellers in foreign countries. Thus, many of these firms have no establishments in foreign countries. For these firms market knowledge development is a process through partners. Firm-level practices and processes to manage these partners in order to absorb the knowledge of the foreign market become vital elements for successful export operations. This study aims to provide practical insights into these issues. As the knowledge-based economies of many industrialized countries have an enormous number of SMEs in the software development sector, the study seems beneficial for real business situations. For



such SMEs that are in the early phases of developing market knowledge, this study may provide some information about the right capabilities to nurture in order to expand internationally.

## 1.6 Limitations of the study

The first limitation of the study is in relation to the conceptualization of export expansion from a dynamic capability perspective. Although dynamic capabilities are a firm's processes to gain and alter resources, this study does not focus on analyzing the export expansion process per se, but rather on the antecedents of this process - the resources and knowledge which firms utilize to create and develop best practices for export expansion. This limits the focus of the present study to increasing our understanding of the intangible knowledge critical for export expansion, rather than understanding the processes through which firms develop the export expansion capabilities. Thus, the theoretical and empirical discussion will be limited to the perspective of export expansion as a dynamic capability so as to investigate the knowledge that firms utilize for expanding exports.

The second limitation of the study is in relation to internationalization versus export expansion. According to Johanson and Vahlne (1977), internationalization is a process in which firms gradually increase their international involvement. The process of internationalization is linked to a gradual increase in the acquisition, integration and use of knowledge about the foreign market and operations and a successive increase in commitment to these foreign markets. This may be similar to Reid's (1982) conceptualization of export expansion as a progressive organizational commitment ultimately leading to an international enterprise. International commitment or foreign commitment has been mentioned as an establishment of a sales subsidiary or an independent office. However, in the case of software development SME's, international commitment is understood differently. These firms, instead of establishing a sales subsidiary, may sell their products through independent resellers, distributors and through online channels. However, successively increasing foreign commitment is seen as a result of using the acquired market knowledge for developing continuous sales opportunities. Thus, rather than more broadly analyzing the internationalization behaviour of a firm, export expansion is specifically examined.

Third, market knowledge competence in this study is conceived as a managerial ability. However, there will be no emphasis on the individual role of the entrepreneurs/managers in the knowledge development process. Only the overall entre-

preneurial vision of the firm will be seen as a contextual factor to market knowledge competence development.

## 1.7 Structure of the study

Chapter one introduces the overall theme of the study and begins with an introduction. Next the purpose and objectives are presented, followed by the key terms and the research strategy of the study. Then, the preliminary contribution of the study is given. After discussing the limitations, the last section refers to the structure of the study.

Chapter two focuses on the theories related to market knowledge competence and the export behaviour of firms. First of all, a rationale to the choice of theories is given. The theories include the resource-based view and the knowledge-based perspective, market orientation, organizational learning including the Uppsala model and the lateral rigidity view. An analysis and discussion of the theoretical perspectives in the context of export expansion is presented. This is followed by a preliminary theoretical framework of the study. At the end a summary of the chapter is given.

Chapter three is related to the preliminary empirical study. It presents an interview-based analysis of the two case companies. The first section presents the methodology, the selection criteria of the firms, the method of data collection and sample for the purpose of preliminary empirical study. In the next section the case study of firm A is presented. The next section presents the case company B. Then a cross analysis of the findings of the case studies is presented. The analysis is related to the description of each of the market knowledge competence factors at the firm and market levels. Following this, a theoretical framework for the main empirical part of the study is presented. This is followed by a summary of the chapter.

Chapter four explores the literature to build on the findings of the preliminary case analysis. First of all, market knowledge competence is discussed as a competence for firms and its characteristics are presented. Then the role of market knowledge competence in export expansion is discussed with a specific focus on the speed and success of expansion and export capabilities. Next, two of the components of market knowledge competence and export expansion capabilities organized under these components are discussed. This is followed by the contextual factors in market knowledge competence. At the end a summary of the chapter is given.

Chapter five introduces the research methodology for the main empirical study. The purpose of this chapter is to describe the research instrument and the research process and procedures employed for the empirical testing of the study. It starts with a discussion of the quantitative study, a description of the sample, data collection methods and development of the research instrument. Next, an overview of the 'Partial least square' (PLS) method is given. In the next section the operationalization of the variables is presented. Then a description of the reliability and validity of the measures is presented.

Chapter six presents the empirical analysis and results of the study. This begins with a discussion of the software product industry and its sales channel. This is followed by a discussion of the overall sample characteristics of the study. Next an empirical analysis is presented. In the empirical analysis the reliability and validity of the measurement model is initially given, then the reliability and validity of the structural model is presented. This is followed by the empirical analysis of the two structural models. Then the assessment of the reliability and validity of the contextual factors and their structural model assessment is presented. In the end a summary of the result is given.

Chapter seven begins with a discussion of the key results of the study. Then a comparison of the results with previous studies is presented. Next, the theoretical and managerial implications derived from the study are given. This is followed by the limitations and future research suggestions of the study.

Figure 5 shows the overall structure of the study.

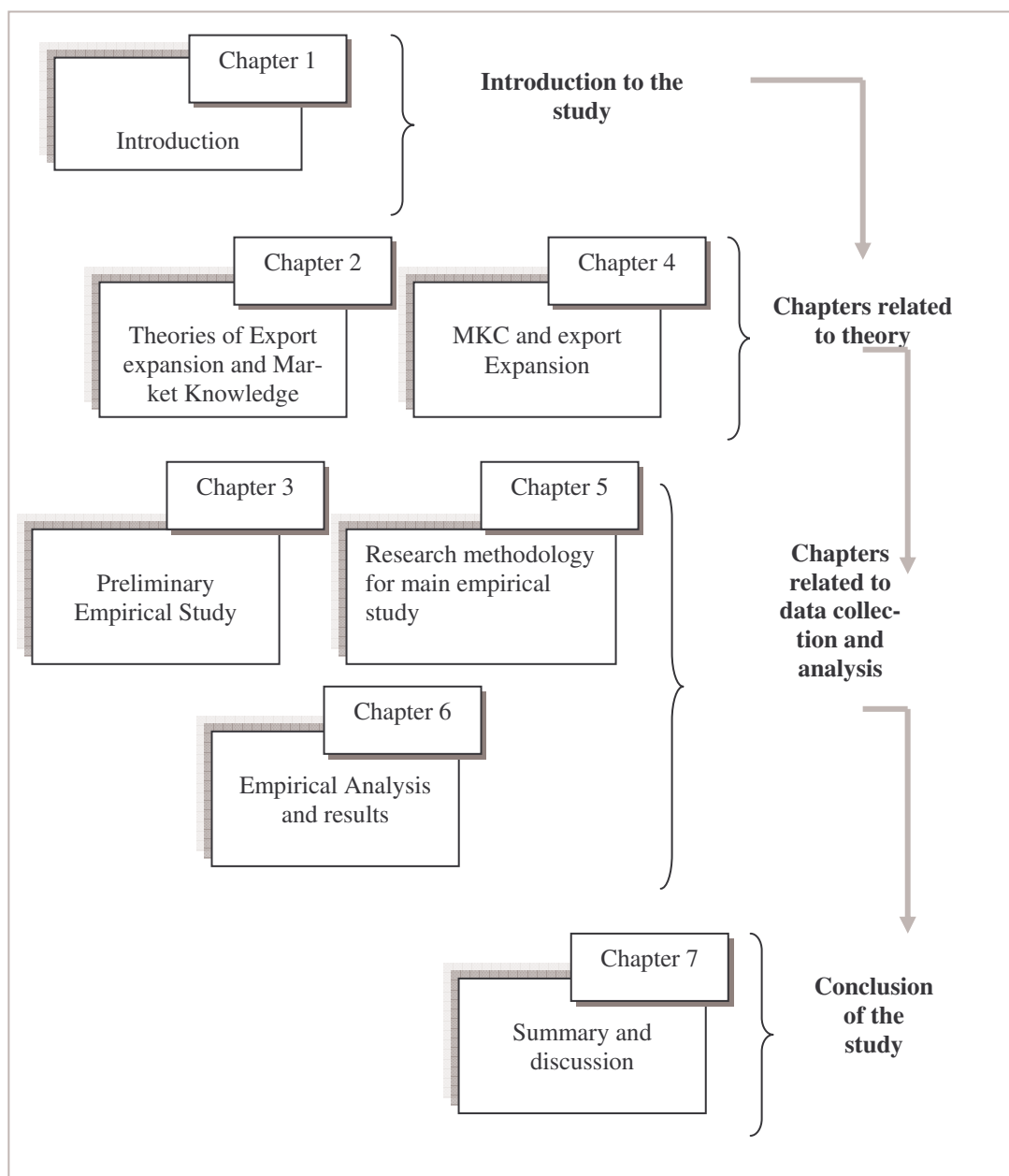


Figure 5. Structure of the study.

## 2 THEORIES OF EXPORT EXPANSION AND MARKET KNOWLEDGE

With an inter-disciplinary approach, the purpose of this chapter is to review the theories concerning export expansion, and organizational and market knowledge. The specific aim is to review strategic management and international business approaches to find out what theories address the issue of organizational and market knowledge and the impact of interaction between them on market knowledge competence.

As the unit of analysis of the study belongs to firm level organizational and the market level market knowledge, therefore, theories that address both levels will be discussed here. The rationale to the choice of theories is presented in section 2.1. The resources-based perspective and its extensions such as core competence, dynamic capability and the knowledge based view will be used as theoretical lens to analyze the organizational knowledge. This is presented in section 2.1. Market orientation perspective will be used to analyze market knowledge. A discussion of market orientation perspective and export expansion is given in section 2.2. However, market knowledge must be internalized as a part of the organizational knowledge so as to utilize it efficiently to develop capabilities. Although this calls for analyzing the processes leading to knowledge internalization, however this study only analyses how a learning orientation facilitates knowledge internalization. Therefore, organizational learning studies are also discussed in section 2.3. Then, section 2.4 discusses how the complementary aspects of the theories can be transformed into a preliminary theoretical framework of the study. Section 2.5 summarizes the important points of the chapter.

### 2.1 Rationale to the choice of theories

The resource based view considers organizational knowledge as key intangible resource with positive implications on firm performance and emphasize the acquisition and use of organizational knowledge. These studies maintain that organizational knowledge when continually reconfigured to meet changing environmental conditions results in organizational capabilities which inevitably retain competitive advantage (Teece, Pisano and Shuen 1997). However the other of the intangible resources, organizational knowledge as the knowledge of the processes of the firm, is not addressed in these views. Therefore, an overview of the knowledge-based view is also included.

Market orientation studies however, focus on the acquisition and use of market knowledge and by exploring the effects of marketing resources, capabilities and processes view market orientation as one of several organizational capabilities that influences firm performance (Foley and Fahy 2009). A number of studies, however question the linear and over simplistic relationship between market orientation and firm performance (Hult and Ketchen 2001; Eisenhardt and Martin 2000) and claim that market orientation is dependant on other firm-level factors such as innovativeness and organizational responsiveness to name a few. Other studies in the field, however also suggest to examine factors internal to a firm from the contingencies of the market orientation-firm performance relationship (Hult, Ketchen and Slater 2007; 2005; Menguc and Auh 2006) and call for analyzing the relationship more explicitly positing that market orientation would produce greater improvement in firm performance when combined with other internal complementary resources to create new dynamic capabilities (cf. Menguc and Auh 2006). Given that market orientation perspective only focuses on market level resources, processes and capabilities, to realize the potential of market orientation in explaining export expansion, a deeper exploration of the concept within the context of firm level internal complementary resources may provide sound understanding of the relationship between market knowledge competence and export expansion.

Within the context of market orientation perspective, the two emerging streams of studies also draw on the resource and knowledge-based views. The stream which views market orientation as one of several organizational capabilities and considers it as an intangible strategic resource, integrates the market orientation perspective with the resource-based view to fully realize its effects on firm performance (cf. Hult, Ketchen and Slater 2007; 2005). While the other stream which investigates the market knowledge utilization aspects integrates the knowledge-based and the dynamic capability insights with the market orientation perspective, however in an export venture context, and analyzes specifically the relationship between marketing capabilities and the export venture performance (Cavusgil, Sinkovics, Wu and Roath 2007; Cavusgil and Zou 1994).

The theoretical views presented above are complementary and present a balanced view of organizational and market knowledge related to export expansion. Due to the ability of the market orientation perspective to complement market information processing activities, Ketchen, Hult, and Slater (2005; 2007) mention that it can be adequately paired with the resource-based view. The RBV may provide a deep insight into the internal factors that are central to the market orientation perspective. Each of these perspectives may explain the rationales of the export ex-

pansion of small- and medium-sized firms, depending on their age, size and the industry's development stage.

Although both of these perspectives consider learning orientation of a firm critical for knowledge acquisition and utilization, however, lack in explaining what factors facilitate or inhibit learning at firm and market levels. Therefore, a review of studies based on organizational learning and its effects on export expansion is presented in the next section.

## 2.2 Export expansion and the resource-based perspective

Sustained competitive advantage (SCA) is the central concept in the resource-based view. SCA allows a firm to earn economic rents compared to competitors. The heterogeneity of firms, their varying degrees of specialization and the limited transferability of corporate resources are of central interest in the resource-based view (RBV). Amit and Schoemaker (1993) mention that scarcity, complementarity and appropriability as characteristics of resources limit their transferability to other firms. The limited transferability of such strategic resources consequently gives rise to opportunities for the firms possessing them. In this perspective, the unit of analysis is a resource and its use in equilibrium or to its maximum extent to achieve and sustain competitive advantage (Peteraf 1993). SCA is derived from rare, valuable, imperfectly imitable and non-substitutable resources and capabilities (Barney 1991). This implies that a firm is involved in a process of identifying and developing key resources and deploying them in the market to earn maximum rents (Fahy and Smithee 1999).

Within the resource-based perspective, some studies also consider the capabilities of a firm as the unit of analysis. In this view, capabilities refer to a firm's capacity to deploy resources by using organizational processes to achieve a desired end (Amit and Schoemaker 1993:35). As a result of the interaction of firm resources and processes, capabilities are developed over time through trial and error. Thus, capabilities are firm-specific and difficult to imitate by any other firm. This view is in line with the conceptualization of capability as in this study. However, our conceptualization refers not only to resource deployment, but rather, presents a holistic view of resource identification, structuring and orienting clusters of resources at the functional levels. Amit and Schoemaker (1993) further explain that capabilities are developed in functional areas, for example in brand management. Combining the physical, human and technological resources of a firm, capabilities such as new product innovations procedures, manufacturing flexibility, respon-

siveness to market trends and short product development cycles may result. The resources and capabilities of a firm are of a strategic nature when they are difficult to buy, sell, imitate or substitute. An example given by Amit and Schoemaker (1993) is the trust developed between parties, mentioning that competitors cannot replicate it. These kinds of firm-specific and tacit asset developments take a great deal of time and are path-dependent (Dierickx and Cool 1989). Thus, success relative to competitors means to develop path-dependent, non-transferable, non-imitable and firm-specific assets and then being able to transform these assets into superior commercial products and services.

The other notion in RBV that supports firm competence as conceived in this study is the fact that resources of a firm may exhibit complementarity in development or application (Dierickx and Cool 1989; Teece 1986). Complementarity implies that the strategic value of each resource's relative magnitude increases with a rise in the relative magnitude of other resource. In that way resources have bilateral dependence in application and the combined value of the firm's resources may be higher than the cost of developing each resource individually. Thus, the resources of a firm can be utilized by combining them with other resources of the same or other partnering firm. Such a combination of complementary resources may be difficult for a competitor to create and develop. In sum, the resource-based view analyzes firms from the resource side and maintains that resources could act as a source of strategic options which enable a firm to sustain its competitive advantage. Resources in this view are tangible and intangible assets, which are inherently attached to a firm such as knowledge of technology, skilled personnel and efficient procedures etc.

While in the RBV, resources are considered significant for SCA, there has been a debate on the issue of what resources and especially capabilities are for firms. Several studies furthering the concept and application of firm resources emerged. In line with the definitions of competence and capability in this study, core competence views the competence of the firm as a higher order management's capacity to mobilize, harmonize and develop resources and capabilities to create value and competitive advantage, whereas the dynamic capability view also analyses the higher-order capacity of a firm's management to create difficult to imitate combinations of organizational, functional and technological skills and processes. Both the views consider core competence and the capability as intangible resources.



### 2.2.1 *Core competence and dynamic capability views*

The origin of these two views is based upon Schumpeter (1942), Penrose (1959), Nelson and Winter (1982), Prahalad and Hamel (1990) and Teece (1986, 1988). Wernerfelt (1995) admits that the stream of research known under the label 'resource-based view' is the collective work of many scholars, and quotes Barney (1986), Dierickx and Cool (1989), Conner (1991) and Mahoney and Pandian, (1992) as key insights in further refining the central concepts of RBV. He acknowledges that Prahalad and Hamel (1990) extend the ideas of Wernerfelt (1984) and argue for an inside-out corporate strategy framework.

In line with the RBV, the underlying assumption pertaining to the core competence view advocates that firms need to concentrate on their core competence as the source of competitive advantage. Core competence is a bundle of skills and technologies, rather than a single, discrete skill or technology that might be termed as a capability or a resource (Prahalad and Hamel 1990).

Core competence is an intangible resource for a firm, where the management attempts to mobilize, harmonize and develop resources and capabilities to create value and competitive advantage. Therefore the objective of the management is to create an organization which facilitates communication and a deep commitment across all the levels of the organization and between people. Therefore, core competence basically resides in the firm, and the firm builds its capabilities, core products, business units and the end products around this core competence. The job of the management is identified as developing a core competency of the firm, which is required to run its activities efficiently. Thus, a core competence is one that is difficult to imitate and differentiates the firm's business from other similar businesses.

The dynamic capability view also emphasizes the development of management capacities, but emphasizes rather difficult to imitate combinations of organizational, functional and technological skills and processes. However, this view is an efficiency-based approach (Teece, Pisano and Shuen, 1997) meaning how sooner than the competitors firms identify difficult to imitate resource combinations that lead to formation of certain capabilities in different functional areas. Therefore, it emphasizes building competitive advantage through capturing entrepreneurial rents, which arise from firm-level advantages. It broadens the application of the original RBV perspective to cover other functional areas such as R& D management, product and process development, technology transfer, human resource management and organizational learning. This approach is similar to the RBV in recognizing isolating mechanisms (Penrose 1959; Teece 1986; Wernerfelt 1984) as the fundamental determinants of firm performance. Firm-specific capabilities

are considered as isolating mechanisms, which are combined with resources to develop, deploy and protect these capabilities further.

### 2.2.2 *Knowledge-based view*

The knowledge-based view (KBV) focuses on organizational knowledge as an intangible key resource of a firm that can be utilized and exploited by the mechanisms of firm-specific capabilities. The view posits that the acquisition and use of relevant knowledge is a key to understanding organizational performance. The rationale for this theory emphasizes the coordinating mechanisms (firm-level processes) through which firms integrate the specialist knowledge of their employees. The origin of 'knowledge' as an intangible strategic resource for a firm originates from the concept of 'sustained competitive advantage' from the RBV whereby knowledge is considered as a scarce and valuable resource (Barney 1991). The knowledge resource is considered capable of generating sustained rents for the firm possessing the knowledge when it is exchanged with other firms. The core assumption of the knowledge-based view assumes knowledge as residing within individuals and organizations where knowledge is integrated by applying the information in different situations and activities.

Within the knowledge-based view two streams of literature exist, which are distinguished on the basis of the role of the firm assumed in each stream. The first stream of studies views a firm as a knowledge-integrating entity. The role of the firm is assumed to be knowledge application rather than knowledge creation (Grant 1996b). Application implies that a firm should know the organizational processes in order to learn ways of combining different kinds of knowledge that is already residing inside the firm. This view emphasizes the learning of norms, rules, routines and the interaction of individuals as the organizational processes through which firms create knowledge. This stream of knowledge-based literature only focuses on an inside view of the firm and ignores the need to understand those specific organizational processes or mechanisms through which firm access knowledge residing outside the boundary of the firm (Spender 1981; Nelson and Winter 1982; Levitt and March 1988; Simon 1991).

The other stream of scholars is interested in emphasizing the processes related to the acquisition and application of knowledge residing outside the boundary of the firm. The role of the firm is assumed to be a knowledge creating entity, and knowledge creation is related to the acquisition and creation of organizational knowledge (Grant 1996b; Richardson 1972; Langlois and Robertson 1995; Kogut and Zander 1992; Dosi and Marengo 1994) from the knowledge residing outside the boundary of a firm. According to this view, firms exist because they manage

team production with other firms and are able to govern certain economic activities by integrating the knowledge of different individuals and firms. This is assumed to create superior knowledge. These studies view knowledge creation as a counterpart to the knowledge application process, occurring in a common organizational context (Grant 1996b). Therefore it focuses on the coordinating mechanisms of the routines and capabilities which firm use to acquire knowledge from different sources. The studies view ‘knowledge’ not as a resource but as a capability of a firm, and emphasize ‘the firm-specific knowledge’ which reflects the capacity of the firm to coordinate routines and processes to acquire outside knowledge. This is unlike the original RBV, where resources are the central concept and capability is an inherent part of it (Barney 1991).

**Export expansion rationale in RBV core capability and KBV:** The resource-based view (RBV) and its offsprings (core competence, dynamic capability and the knowledge-based view) emphasize firm-level determinants such as knowledge of the processes of firms, capabilities and its core competence when analyzing a firm’s expansion into foreign countries (Peng 2001). The key idea supporting international expansion in all these views is common – international expansion by exploiting the available firm-specific capabilities in another location in a way that gives further firm-specific capabilities. Peng and Wang (2000) assume that the tacit knowledge firms accumulate about their own firm-specific resources and as well as an expert capability to leverage such knowledge (Mitchell, Smith, Seawright and Morse 2000; Peng and York 2001), provides a surplus of tacit knowledge during internationalization which is likely to provide them with a competitive advantage in foreign markets. Therefore, a lower-order capacity of a firm, to understand the processes of knowledge acquisition and its application is considered as the basic source to capability development. Further, the higher-order capacity of deploying the capabilities and managing a competence of a firm may lead to success in foreign countries.

### 2.3 Export expansion and the market orientation perspective

Market orientation is a well-established phenomenon in market strategy research. This perspective views export expansion as a strategic behaviour of firms, where they strategically attempt to collect information regarding customers’ needs and the export markets. Market orientation is considered as an organization-wide priority to respond to changing customer needs and competitor activities in order to exploit opportunities and circumvent threats (Hunt and Morgan 1995; Kohli and Jaworski 1990; Narver and Slater 1990). Kohli and Jaworski (1990) explain

market orientation as an appreciation by the firm to understand present and potential customer needs and perform coordinated activities for the systematic gathering of information regarding present and potential customers and competitors. Kohli and Jaworski (1990) conclude that market orientation refers to the organization-wide generation, dissemination and responsiveness related to current and future customer needs and preferences. Market knowledge is considered as the knowledge of customers' needs and the export information.

There are two streams of literature on market orientation: one focuses on market knowledge acquisition and the other on the utilization of market knowledge. Studies related to market knowledge acquisition acknowledge knowledge of customers' needs as a key factor which influences a firm's export expansion (McAuley 1993; Kohli and Jaworski 1990; Diamantopoulos and Souchon 1999; Narver and Slater 1996; Day and Glazer 1994; Diamantopoulos 2003). These studies link export expansion to a customer orientation of firms. These studies describe customer orientation as the sufficient understanding of customer needs and preferences in order to create a superior value for them. A superior value is created by increasing the product-related benefits and decreasing the cost of these benefits to the customers. Information collection of the future needs of the customers is one of the factors that these studies relate to the success of a firm's export strategy.

The core idea in these studies relates market orientation to competitive advantage. The understanding of customer needs requires responsiveness from the firm's side in order to develop certain activities, processes, procedures and marketing strategies. When a firm uses the acquired information for the purpose of customer-related value creation such as new product development, it in fact develops internal core processes and certain capabilities which in turn enhance organizational performance. The customer orientation process in that way strengthens a firm's export-related core processes and firms develop a long-term orientation of their position in the market. With a long-term focus firms constantly discover and implement additional value for their customers.

The degree of market orientation appears to be significantly different for firms from varying industries, depending on certain processes, systems and procedures which can limit a firm's ability to respond to necessary changes and collect market information (Jaworski and Kohli 1993). Narver and Slater (1990) maintain that market orientation is an organization's culture and desire to create a superior customer value that leads a firm to develop necessary behaviours and activities to create and maintain that culture.

Some studies focus on export information and suggest that the aim of information acquisition for firms is to collect information for the purpose of detecting and/or

solving a specific marketing problem (Leonidou and Theodosiou 2004). This is further supported by Yeoh (2005), who describes export information acquisition as the process involved in bringing information about the external environment into the boundary of the organization (Moorman 1995). Further, Toften (2005) reports that export information are used to overcome decision-making uncertainty, originating from unfamiliar and uncertain foreign markets. The importance of export information as a key factor influencing a firm's export expansion has widely been acknowledged as responsible for a firm's success or failure in foreign markets (Diamantopoulos 2003; Hart and Tzokas 1999; Kohli and Jaworski 1990; Narver and Slater 1990). Indeed, a lack of export information is found to be a major barrier to expanding export activity.

In the market orientation concept, export expansion is explained by another organizational factor – the coordinated marketing effort. This suggests that market knowledge acquisition is a coordinated activity for which the marketing department is solely not responsible. Inputs from various departments such as new product development and the R&D teams as well as competitors' strategies are assumed to influence the market orientation of a firm. This factor also explains the relationship of market orientation to competitive advantage and enhanced organizational performance. A coordinated effort is again fundamental in creating a strategy fit for exports.

The other stream of studies related to market knowledge utilization in fact analyzes the export and market information use within firms. These studies stress a positive relation between export and market information use and market knowledge development (Toften 2005; Diamantopoulos and Souchon 1999). Toften and Olsen (2003) describe export information as the information which is collected with the intension of increasing export knowledge. They maintain (2005) that market knowledge is an outcome of export information use. More specifically, it implies that in order to create knowledge within a firm, individuals, teams and departments utilize the available information. Export information utilization leads to improvements in export information use, practices and market intelligence procedures (Diamantopoulos and Souchon 1999).

In this stream of literature however, it must be noted that it is not only the acquisition of market knowledge, rather its utilization for expanding export activity that has frequently been seen as a critical determinant to export performance (Diamantopoulos and Souchon 1999). The utilization of market knowledge is emphasized due to the fact that competitors may collect the information at the same time; firms which efficiently utilize the information are able to sustain competitive advantage. Thus, an efficient reaction to the available information is positively

linked to a better understanding of the market (Sinikula 1994). Consequently, if the market knowledge needs of a firm match the international experience, market knowledge is more likely to be utilized within the firm and in turn, evolves into export capabilities.

**Export expansion rationale in the market orientation perspective:** Export expansion in market orientation studies is conceptualized as acquiring knowledge of the customers' needs and other export related information. It is viewed as a coordinated and systematic effort by different departments to share an understanding of customers' current and future needs, factors affecting the needs, communication of the needs across inter-firm level and the implementation of activities to meet those needs. It must be noted here, however, that the aim of acquiring the customers' knowledge is not only to produce a new product for the market. Rather, through the use of this knowledge firms change and restructure certain procedures related to marketing. The market orientation approach views customers' knowledge as the intangible resource for successful export activity. Thus, Jaworski and Kohli (1993) specifically relate market orientation 'to mean the implementation of the marketing concept'.

In market orientation literature market knowledge competence is a synonym for market orientation and scholars from this research tradition view it as a valuable asset and an organizational core competence (Day 1994a; Glazer 1991; Wright and Ashill 1998; Cavusgil and Zou 1994; Cooper 1994). Market orientation is the ability of the firm to collect information regarding customers' needs and the export markets and to strategically utilize this information to respond to such needs in a timely manner. Thus, such firms address both expressed and latent needs of customers and their focus of producing products is to serve the current needs of customers as well as create products that may serve their future needs (Hult et al. 2007). Studies related to market orientation acknowledge information as a key factor influencing a firm's export expansion (Diamantopoulos 2003; Diamantopoulos and Souchon 1999; Narver and Slater 1999; 1996; Kohli and Jaworski 1990; Day and Glazer 1994; McAuley 1993).

## 2.4 Export expansion and the organizational learning perspective

Two streams of literature focus on organizational learning. One is analytical and descriptive, focusing on the learning processes describing the structural and formal process by which firms change or upgrade their existing processes of knowledge and skills acquisition or their training of human resources. The other stream



in organizational learning literature is prescriptive and action-oriented focusing on analyzing the effects of learning on organizational effectiveness (Tsang 1997). The process-based approach has received more interest from strategic management scholars, whereas scholars from international business research have been more interested in prescriptive analyses, linking the effects of organizational learning to firm performance. Therefore prescriptive studies on organizational learning link the learning orientation of the firm with performance and conceptualize the firm as a learning organization. A learning organization is a firm 'that facilitates the learning of all its members and continually transforms itself (Dodgson 1993). Individual members of the organization are encouraged to learn and the organizations extend their learning cultures to include suppliers and customers. A learning organization is continually under transformation, upgrading and acquiring knowledge to increase organizational effectiveness.

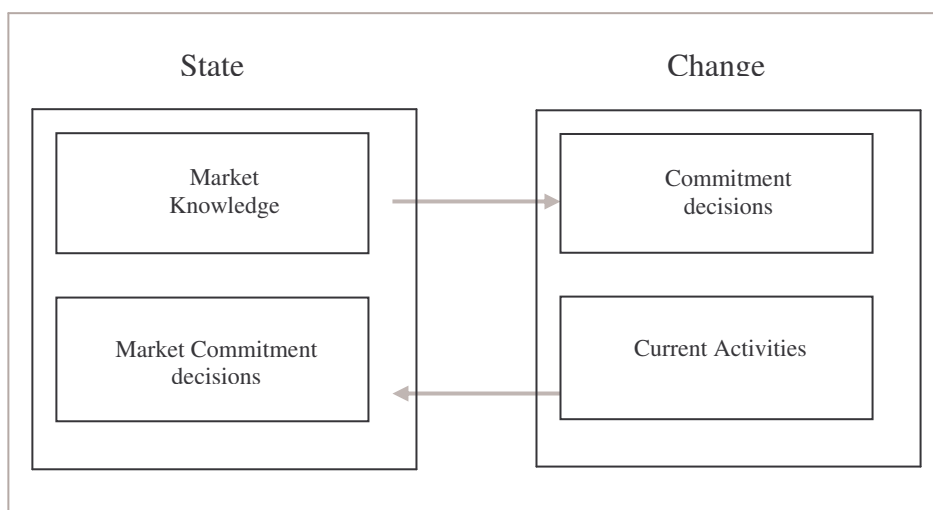
In the following, two of the theoretical approaches to export expansion are presented. The Uppsala model is a classical well-acknowledged and empirically tested approach. The other approach, 'lateral rigidity' to learning (Luostarinen 1979) refers to the behavioural barriers that firms face while learning. The barriers are manifested in slow learning, a lack of new knowledge creation and poor performance.

#### 2.4.1 *Uppsala model*

Johanson and Valhne (2003) mention two basic points of departure of the Uppsala model. The first starting point comes from the Theory of the Growth of the Firm (Penrose 1959), and describes a firm's growth as a result of its ability to use, combine and develop resources. Basically the assumption relates to the use of resources rather than having knowledge of resources per se. The second point of departure is rooted in the behavioural theory of a firm (Cyert and March 1963; Aharoni 1966) and describes that limited knowledge influences the firm's decision-making as it strives to develop and create knowledge to support this decision-making. Based on these two points of departure, the Uppsala model presents a dynamic interplay between knowledge development and increasing foreign market commitment.

Johanson and Valhne (1977) present a dynamic, cyclic model of a firm's internationalization, where the outcome of one cycle becomes the input for the next one. The cycles are distinguished from each other as state and change aspects of internationalization variables. The state aspect refers to the resource commitment to the foreign market. The resource commitment has two variables of internationalization: market commitment decisions and market knowledge. Market knowledge

is the information about foreign markets and operations. This knowledge is stored and retrieved from individuals, in computer memories and in written reports (Johanson and Valhne 1977:26). The change aspect has two variables as well: the decisions to commit resources and the performance of current activities. This is shown in Figure 6.



**Figure 6.** The basic mechanism of internationalization – state and change aspects. (adapted from Johanson and Valhne 1977)

The state aspects affect both the commitment decision and the performance of the current activities, which in turn are assumed to change the degree of market knowledge and commitment. Thus, export activity is seen as a cyclic process whereby commitment to foreign markets is positively correlated to the development of experiential knowledge. In this model, the process of increasing international involvement is seen as interplay between acquisition, integration and the use of knowledge about foreign markets and operations on one hand and an increasing commitment of resources in foreign markets on the other.

The Uppsala model is explicitly about knowledge development and learning. The main emphasis is on experiential learning through current activities, which relates to the behavioural dimension of organizational learning. The model focuses on incremental investment behaviour in foreign markets as firms gradually acquire knowledge about them. One of the key studies that explicitly explore the concept of learning in the Uppsala model is by Forsgren (2002), who mentions that positive learning increases a firm's knowledge of available alternatives and its competence to conduct foreign market operations. Regarding knowledge, Forsgren does not emphasize an increase in the number of potential alternatives, but rather refers



to a change in the given alternatives and an enhanced knowledge of how to use the potential alternatives within the given resources of the firm. Given the fact that organizational learning remains one of the main assumptions of the model (Penrose 1959), relatively little emphasis is given to the mechanisms that enhance the organizational knowledge of the firm and the way firms interpret the actions and their outcomes.

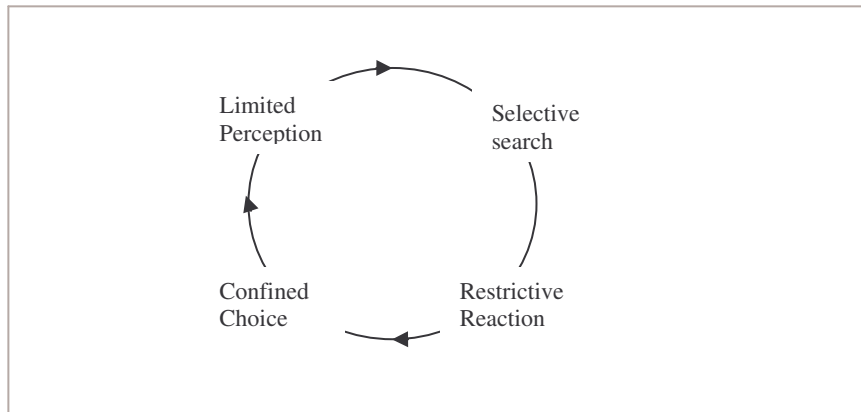
#### 2.4.2 *Lateral rigidity view*

Luostarinen (1979) develops the concept of lateral rigidity. Lateral rigidity refers to the inflexibility that a firm poses on new alternatives due to a lack of adequate information about them. Within this approach, barriers are explained by the firm's laterally rigid actions; it moves smoothly in a straight and forward direction. However, learning proactively in a lateral direction like this is not favourable. Stimuli from the external environment, such as an opportunity may bring change to the original plans of the firm. However, as different plans are synchronized with each other this affects the willingness of the firm to change its original plans. Thus, the firm is seen to be more active in a forward direction, but rigid in a lateral one. This lateral rigidity is influenced by the amount of knowledge the firm possesses, the lack of information about the stimuli, or perhaps due to the inadequate ability of the management to deal with the external stimuli.

Luostarinen relates the impact of lateral rigidity on the decision-making model of the firm's internationalisation. It assumes that the more knowledge the firm possesses about the decision variables, the less lateral rigidity it faces from within itself and the greater resources it commits to internationalization.

Luostarinen (1979:35) puts it this way 'in making the final decisions the company is usually willing to select those alternatives which are known to it and tries to avoid those alternatives which are unfamiliar'.

Lateral rigidity is assumed to be a typical feature at every stage of the learning process, and has four components which affect organizational learning: limited perception, selective search, restrictive reaction, and confined choice, as shown in Figure 7.



**Figure 7.** Behavioural barriers to organizational learning and knowledge creation. (author's own creation)

### Limited perception

It is assumed that the global environment is full of growth impulses for firms. However, a firm perceives only a small fraction of these problems or opportunities in a global environment. The limited perception of these impulses is due to the following three factors:

- position of unfavourable impulse exposure
- inactive search for impulses
- limited span of attention

The perception of external stimuli differs for each firm in the same industry, due to their lack of required resources, weak market position and reputation. The level of the firm's search activity for external impulses also affects the number received. Luostarinen (1979:37) describes that in firms there is a tendency to set pre-planned goals, but a changing environment is perceived as a problem for the implementation of such goals. Thus, firms reject changing their goals in the face of a changing environment. Finally, limited attention to time relates to the fact that the firm has a lack of motivation, a lack of skills, insufficient knowledge or human resources to respond to these external impulses.

### Selective search

Search here refers to the search for impulses; a search for different alternatives to solve a problem or utilizing an opportunity suggested by the impulse (Luostarinen 1979). Firms are very selective in looking for alternatives. Firms actively react to threats, rather than actively searching for alternative impulses. Such a search is

stimulated by a problem and in finding a solution to that problem; firms develop new knowledge, which can later be used to respond to similar kinds of problems which may arise in the future. Thus, a search for impulses is usually selective in that it is related only to finding solutions only to given problems. This characteristic makes it biased in nature. The solutions to the problem are searched for among the current alternatives and the firm is inclined to find solutions that are presented from within its given resources and abilities (Aharoni 1966; Luostarinen 1979). For this reason, such solutions are biased towards the previous opinions, attitudes, hopes and expectations of the management personnel.

### **Restrictive reaction**

Sometimes firms show a restrictive reaction to external impulses and newly created knowledge. This is maybe due to an inability or unwillingness to react. A lack of financial, physical or human resources causes an inability within the firm to react, especially if the situation demands new resources. Sometimes firms possess the required resources but there is very little time to respond to the exposed situation. The 'unwillingness to react' factor needs to be emphasized here. A prevailing satisfaction with the current situation is one issue that inhibits the firms from collecting more and new knowledge. In such cases, the management may face restriction from the personnel of the firm in adopting new knowledge. Luostarinen (1979:39) refers to this as mental commitment.

### **Confined choice**

As firms had previously developed knowledge about the alternatives in the selective search, the choice is confined to these alternatives. Thus, search and choice are interdependent. However, the choice between different alternatives is influenced by two behavioural factors: uncertainty avoidance and risk escape. Here, Luostarinen (1979) relates uncertainty to the stock of knowledge affected by the flow of information and experience. In this case, firms possess little knowledge of the qualifications of the product, its alternative uses, market alternatives and the outcome of these alternatives. Only those alternatives which have proved to be positive due to the earlier experience of such firms are preferred and new experiences are avoided due to a lack of knowledge. Similarly, only the new alternatives which are similar to the previous alternatives used are accepted. Risk in the lateral rigidity concept is defined as the sum of the degree of uncertainty felt, the perceived level of the resource commitment and the subjective probability of the loss. Higher probability of loss is related to higher uncertainty and higher commitment of resources. Thus, the risk will be greater in such situations.

**Export expansion rationale in the organizational learning perspective:** Within the context of organizational learning, export expansion can be explained from two points of view: learning from previous experiences and action-based proactive learning. Learning from previous experience has been mentioned as ‘learning by doing or experiential learning’ (Johanson and Valhne 1977). The success of exports depends largely on the mechanisms that firms use to interpret and transfer previous experience into an acquisition of managerial competencies that are further used for organizational purposes. The Uppsala model and the lateral rigidity views explain the mechanisms of the underlying processes which pertain to the acquisition and utilization of the market knowledge. Uppsala model suggests that as a result of a cyclic process of resource commitment and an increase in the experiential knowledge, firms learn better how and where to commit further resources.

The Uppsala model, however, provides no insight into how and why firms would learn from their experiences (Forsgren 2002; Forsgren and Björkman 2000). Similarly, explanations are lacking as to why and how firms learn by direct experience and acquiring the knowledge of the foreign market through indirect means such as partnerships, and how direct learning may influence the rate of (speed) of export expansion. Even in the case where firms are not involved in direct learning, learning from their partners must be internalized. However, the Uppsala model lacks explanations for indirect learning and also learning mechanisms at the firm level. Only experiential knowledge i.e. learning by doing is presented as a learning mechanism.

Lateral rigidity model, on the other hand, suggests the behavioural factors at firm level that hinder the commitment of resources at organizational as well as market levels. It focuses on a broad range of behavioural factors that inhibit the acquisition and utilization of market knowledge. Firms are considered to show laterally rigid behaviour to accept new change and knowledge. Thus, lack of knowledge is considered as a barrier to decision making concerning the resource commitment. However, no one such kind of knowledge is identified in this view. This view will be used to analyze factors at firm and market levels that facilitate and hinder the internalization of market knowledge competence.

Suitable theories for the purpose of the present study are considered to be the resource- and knowledge-based views and the market orientation perspective. An overall summary of the central ideas and key studies concerning the above-mentioned theories in the context of export expansion is presented in Table 2.

**Table 2.** A description of intangible resources in export expansion theories

Theory	Intangible resource	Unit of analysis	Mechanism of analysis	Major studies
Resource-based view  Core competence, and the dynamic capability view	Knowledge of the resources  +  Knowledge of the organizational processes of a firm	Firm	Resources, and capabilities	Penrose 1959; Wernerfelt 1984; Barney 1986; 1991; Teece 1986; Dierickx and Cool 1989 ; Prahalad and Hamel 1990; Grant 1991; Conner 1991; Mahoney and Pandian 1992; Amit and Schoemaker 1993; Peteraf 1993; Foss, Knudsen, and Montgomery 1995, Teece, Pisano and Shuen 1997; Fahy and Smithee 1999; Eisenhardt and Martin 2000; Priem and Butler 2001(a); Bromiley and Fleming 2002; Rodríguez and Rodríguez, 2005; Yeoh 2004; Morgan, Vorhies and Schlegelmilch 2006;
Knowledge based-view	Knowledge of the organizational processes	Firm + market	Core resources and processes	Spender 1996; Grant 1996a and b; Nelson and Winter 1982; Levitt and March 1988; Simon 1991; Richardson 1972; Langlois and Robertson 1995; Kogut and Zander 1992; Dosi and Marengo 1994
Market orientation	Knowledge of the customers' needs  Knowledge of export information	Firm + market	Learning	Deshpande and Zaltman 1982; Kohli and Jaworski 1990; Diamantopoulos and Souchon 1999; Narver and Slater 1990; 1996; Day and Glazer 1994; Diamantopoulos 2003; Leonidou and Theodosiou 2004; Moorman 1995; Toften 2005; Hunt and Morgan 1995 Hart and Tzokas 1999; Yeoh 2005; Hult, Ketchen and Slater 2005; 2007
Organizational learning perspective: Upp-sala model + lateral rigidity	Experiential knowledge	Firm level	Learning from the experiential knowledge	Johanson and Valhne 1977; Luostarinen 1979

After a review of theories to export expansion, the next section attempts to analyze important theoretical concerns derived from these theories in the form of a theoretical framework. The research objectives of the study will guide the analysis of these theories. Therefore the theoretical framework is built around the following concerns:

- Kinds of knowledge that may constitute market knowledge competence
- The link between knowledge and export expansion capabilities
- To analyze factors at the firm and market levels those facilitate and hinder the internalization of market knowledge competence.

## 2.5 Analysis and discussion of the theoretical perspectives

In addition to the recognition that firms employ several kinds of market knowledge for export expansion purposes, another important insight from the theory review is that knowledge and strategic resources critical to export expansion exist externally and internally to the firm. Secondly, external knowledge needs to be internalized through a firm's internal processes and coordination mechanisms. Extending this further for the purpose of the theoretical framework of the study, first of all, it is assumed that an efficient and smooth interaction between external and internal knowledge acquisition mechanisms can explain the link between knowledge acquisition and capability development. Because knowledge can only act as a source of capabilities once it is internalized and used within the firm. Therefore how smoothly interaction between knowledge acquisition processes and the market knowledge goes on may influence market knowledge competence of firms. Then, the factors that facilitate or hinder the acquisition and use of market knowledge at the firm and market levels shall be included. This assumption has also been supported in the review of theories.

### – **Kinds of knowledge that constitutes market knowledge competence**

The *knowledge of the resources* and *the knowledge of the organizational processes* of a firm are emphasized by the RBV and the KBV as critical to export expansion. The intangible resource that both of these views relate to export expansion is the ability of the firm to identify its core processes, procedures and strategic resources of the firm which can be used to transform external as well as internal resources and knowledge into capabilities for expanding exports. Through focusing on the processes the resource- and knowledge-based views, emphasize and analyze firm-level coordination mechanisms for integrating, acquiring and creating knowledge. The experiential knowledge in the RBV is referred to as procedural and know-how – knowledge concerning accumulated skills that allow required tasks to be effectively and efficiently accomplished. However, it must be noted here that the RBV, the KBV and organizational learning do not present any specific kind of export-related knowledge as strategic assets per se, rather these views emphasize the processes (capabilities) of a firm that enable it to transform

market knowledge into a strategic resource. These organizational processes are referred to as the ‘capability’ of a firm. Further, the core competence and the dynamic capability do not exist as individual theories, but rather, present a deeper clarification of the notion of firm resources and capabilities.

***Knowledge of the customers’ needs:*** The market orientation perspective uses the term ‘market knowledge’ collectively to denote the knowledge of the customers’ needs and export information. Some studies use the term ‘export knowledge’ (Day 1994a; Porter 1985) and refer to it as a strategic resource of a firm that enables it to strengthen its market-sensing capabilities and achieve a positional advantage over its competitors in the marketplace. Thus, the market orientation perspective identifies key knowledge as the knowledge of the needs of customers and export information critical to export expansion.

The market orientation perspective emphasizes the acquisition of knowledge of the needs of customers in the foreign market and its transformation for commercial use by utilizing the firm-level coordination mechanisms of knowledge transfer and sharing. According to this perspective, a lack of knowledge of the customers’ needs acts as a major barrier to entering new markets and/or expanding export operations (Diamantopoulos and Souchon 1999; Cavusgil and Naor 1987; Katsikeas 1994; Leonidou 1995; Leonidou and Theodosiou 2004). ***Knowledge of export information:*** The market orientation perspective also considers a lack of export information as a barrier limiting export expansion. Morgan and Katsikeas (1998) explain that involvement in exporting is largely a function of an organizational learning process requiring firms to acquire, analyze and evaluate information from pertinent environmental sources. They suggest that firms which acquire and use market information regarding overseas buyers, competitors, market behaviours and associated issues, are at an advantage over other firms in displaying a greater propensity to enter new markets and develop formalized systems for acquiring and managing information within the firm.

***Experiential knowledge:*** The Uppsala model emphasizes experiential knowledge as the intangible resource to export expansion (Cavusgil and Zou 1994; Reid 1984; Erramilli 1991). This form of knowledge is seen as collective firm-level learning and the increase in the knowledge of firms gained through experience of operations in foreign countries is linked to the commitment of resources in foreign markets. In this way, the rationale for foreign market resource commitment appears similar to the market orientation perspective.



– **The link between knowledge and export expansion capabilities**

While the link between knowledge and capabilities can be explained by knowledge utilization aspects at the firm level, the rationale behind knowledge utilization is explained by knowledge spillovers and the learning ability of the firm during the interaction process. The market orientation perspective and the knowledge-based view of the firm emphasize the use of market knowledge within the firm in order to internalize it. The use of market knowledge in fact leads a firm to develop capabilities thereby causing an increase in market knowledge and positively affecting export expansion. Further, the use of market knowledge enables a firm to efficiently discover markets and to exploit available opportunities ahead of its competitors. Furthermore, the market orientation perspective and the knowledge-based view consider organizational processes and the learning orientation of the firm as the factors that may limit or facilitate capability development.

Luo (2001) mentions three stages which are involved in the conversion of knowledge into a capability of a firm: a) knowledge acquisition (through learning from competitors or from the inherent resources of the firm), b) knowledge sharing across units and c) knowledge utilization (to produce products/services). Thus, organizational learning drives the conversion of knowledge into a capability of a firm. This is confirmed by Vorhies (1998) who states that a firm's market information processing capability have a positive impact on export capabilities development. Morgan et al. (2003) further emphasize that in order to encourage export success the market-based knowledge of a firm related to exports must be converted into organizational-level capabilities that should allow the exporting firm to successfully respond to new opportunities in foreign markets (Kogut and Zander 1992; Nonaka 1994).

– **To analyze factors at the firm and market levels those facilitate and hinder the internalization of market knowledge competence**

Even though it has been set as the limitation of the study how interaction between organizational processes and the market knowledge occurs, an explanation of the factors that facilitate or hinder the interaction is nonetheless given. The facilitating and the hindering factors will be termed as the contextual factors in common.

As the interaction between market knowledge and the organizational processes is found to be driven by the learning ability of firms, the learning orientation of the firm can be considered as a factor facilitating capability development from the knowledge. Cohen and Levinthal (1990) examined the specific factors that affect the ability of a firm to learn from the external and internal sources of knowledge. They argue that the absorptive capacity of a firm is a crucial competence that may



lead to the development of innovative capabilities. When firms match the external information with the prior related knowledge existing at the firm level, they are able to identify the value of new and external information and apply it to commercial ends. In so doing, firms may develop key capabilities.

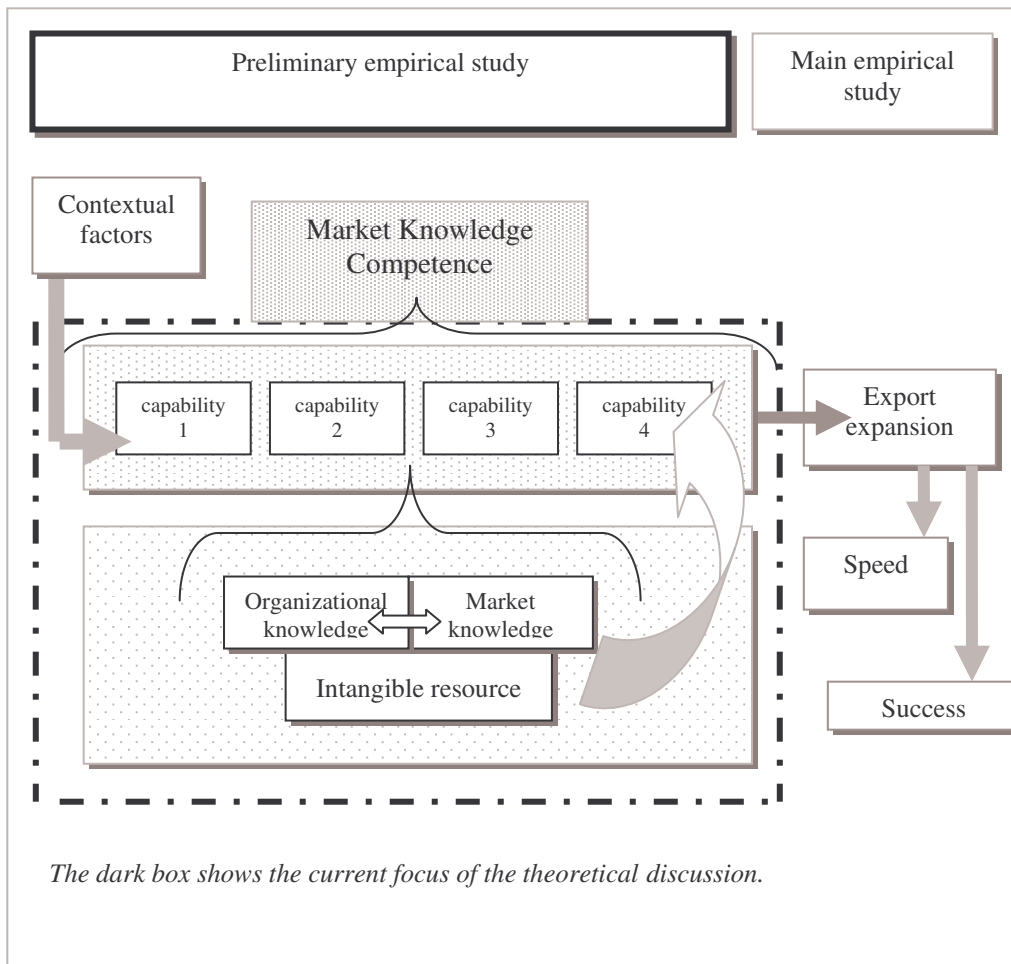
However, as Prahalad and Hamel (1990) also mention, it is not just sufficient to simply have the ability to identify strategic resources. Building on those strategic resources is important for success. Therefore the behavioural and market-related factors that inhibit market knowledge development must also be analyzed. When market knowledge and organizational processes interact, knowledge spills over the organizational boundaries deliberately (movement of experienced personnel, shared knowledge) or non-deliberately (tacit learning). Firms with a greater ability to learn may benefit from knowledge spillovers (Eisenstein and Hutchinson 2006; Slater and Narver 1995).

Furthermore, export-related capability development may depend on the existing knowledge base and the learning ability of a firm to take advantage of the spillovers for its own purposes. Because the organizational processes and the knowledge of its strategic resources limit a firm's ability to recognize and respond to new knowledge, knowledge-based and organizational learning studies emphasize the ability of the firm to understand these processes and the ability to identify strategic resources. Thus, capabilities in several areas may develop as a result of identifying knowledge and then building on it (Morgan et al. 2003).

### **Preliminary theoretical framework**

Figure 8 presents the preliminary theoretical framework of the study. In this figure, the market knowledge competence is shown to consist of the organizational and the market knowledge. As organizational knowledge also consists of the knowledge of the coordination mechanisms of the firm, the interaction between market knowledge and organizational processes is shown by a two way arrow on these two kinds of knowledge. The arrow from the intangible resource block towards the capability block indicates that intangible resources act as the source of capabilities. The contextual factor of learning orientation which plays a critical role in the conversion of knowledge into capability of a firm is shown by the arrow from the contextual factor's block towards the capability block. Finally, the arrow from the capability block is linked to the dependent variable of the study. The background concentration of dotted pattern in each block refers to the complexity of organizational knowledge that firms use in the transformation resources into capability and then firm competence.

Market knowledge will be analyzed from the viewpoint of knowledge of the customers' needs, export information and experiential knowledge. However, only knowledge which turns out to be strategic in nature from the preliminary study will be emphasized in the main empirical analysis. Export capabilities are difficult to identify from the literature at this stage. Therefore specific export expansion capabilities will also be identified from the preliminary empirical study.



**Figure 8.** The preliminary theoretical framework of the study.

In sum, in this theoretical framework, market knowledge competence is seen as the result of the mobilization of organizational and market knowledge for the acquisition and integration of organizational and market knowledge. The acquisition and integration of this knowledge within the firm is linked to the development or identification of export expansion capabilities. On the basis of the theoretical framework it can be proposed;

P1: The interaction of organizational processes and market knowledge is positively related to the market knowledge competence of an exporting firm.

P2: There is a positive relationship between market knowledge competence and the export expansion capabilities of an exporting firm.

## 2.6 Summary

The main aim of this chapter was to review strategic management and international business approaches to find out what theories addressed the issue of interaction between internal organizational processes and market knowledge relevant to export expansion and the impact of interaction on market knowledge competence. With this lens, several of the theories such as the firm characteristics view, the market orientation and organizational learning perspectives, plus the resource-based and its offspring knowledge-based views were reviewed. The reviewed theories were found to be complementary in their explanation of the export expansion and market knowledge relationship. However, for the purpose of the present study, the market orientation perspective and the knowledge- and resource-based views were selected as the main theories. These theories captured the relationship between the organizational processes and market knowledge interaction and suggested that intangible resource as knowledge critical to export expansion existed externally and internally to the firm. However, market knowledge competence constituted knowledge from both sources. Thus, for market knowledge competence, external and internal knowledge were found to be complementary to each other. The firm-based coordination mechanisms of knowledge acquisition and utilization played an important role in acquiring market knowledge and developing market knowledge competence.

It was concluded from the review of theories that several kinds of knowledge constituted market knowledge competence. Particularly knowledge of the customers' needs and experiential knowledge, knowledge of export information and knowledge of the strategic assets and core processes of a firm were found to be important. Due to the fact that knowledge relevant to export expansion might not be readily available at the firm level, and must be internalized from external sources through using the firm's internal processes and coordination mechanisms, the factors that facilitated or hindered acquisition and use of market knowledge at the firm and market levels were considered important for market knowledge competence. Further, as the interaction of market knowledge and the internal organizational processes was found to be driven by the learning ability of firms, the

learning orientation of the firm was considered as one of the factors facilitating the interaction between market knowledge and the organizational processes.

After presenting a critical analysis of theories, key points from a selected few were then developed into the preliminary theoretical framework of the study. The preliminary theoretical framework focused on the interaction between organizational processes and market knowledge. The objective was to find out what intangible resources constitute market knowledge competence of a firm and can be linked to specific export capabilities. The acquisition and integration of organizational and market knowledge was further seen to result in export expansion capabilities. However the relationship between export expansion in terms of success and speed of exports and export expansion capabilities was left to be analyzed in the main empirical part of the study. These arguments were developed into propositions for the preliminary empirical part of the study.

### 3 PRELIMINARY EMPIRICAL STUDY – THE EXPORT EXPANSION OF TWO SOFTWARE FIRMS

In this chapter, the export expansion of two small- and medium-sized firms from the software industry will be presented. The selection procedure, data collection method and construct validity and reliability of the preliminary empirical study are presented in Section 3.1. Important issues related to market knowledge and the organizational processes are discussed in the two illustrative case studies in Sections 3.2, 3.3, 3.4, and 3.5. In Section 3.6 a cross analysis of the main findings from the two case studies is presented. Based on the findings of the preliminary case studies, the theoretical framework for the main empirical part of the study is presented in Section 3.7. Section 3.8 presents the summary of the chapter.

#### 3.1 Case study methodology

Case study-based research methodology was used as a research tool for the preliminary phase of the study. The research question and the objectives of the study determined the choice of the case study research methodology (Yin 1991). In this first phase of data collection, major focus was on identifying intangible resources, particularly knowledge relating to market knowledge competence and developing an understanding of the relationship between knowledge, capabilities and firm competence. Concerning the first research question it was mentioned in the first chapter that knowledge relevant to export expansion may not be readily available at the firm level. Market knowledge was considered to be internalized by utilizing a firm's internal coordination mechanisms and some underlying processes of the firm. The nature of the first research question of the study is evidently exploratory and much of the information sought for is grounded in a real life context. Qualitative research methodology is recommended for such situations where the phenomenon of interest unfolds naturally (Patton 2001). Therefore qualitative research methodology seeks illumination, understanding and extrapolation to similar situations. Thus, the exploratory, descriptive and grounded characteristic of the first research question within a real life context (Yin 1991) determined the choice of the case study methodology for the preliminary empirical part of the study.

In addition to this, the contemporary nature of the information sought for contributed as a second reason. Investigating how and why firms acquired the specific knowledge to develop export expansion capabilities could reveal the interaction between current situations and past events that facilitated the development of stra-

tegic knowledge. Further, the dynamic interaction between organizational processes and market-level knowledge could not be understood by quantitative methods. This involves understanding the dynamics under single settings and Eisenhardt (1989) recommends employing case-study methodology to capture such understanding.

Another reason to employ case study methodology was to strengthen the findings gained from qualitative phase in the quantitative phase of the study. As Jick (1979) mentions that the qualitative data are useful for understanding the rationale or theory underlying the relationships which then can then be strengthened by quantitative support.

It was considered that exploring the phenomenon under investigation first by using the case study method could lead to pertinent hypotheses development for the main empirical part of the study. Further, the findings from the analysis of the case studies were also expected to facilitate interpretation of the results based on a larger scale survey in the main empirical part of the study. Therefore, while the main aim to employ case study-based research methodology was to build theory regarding the construct of market knowledge competence, on the other hand, the data were also used to develop hypotheses which could then be further generalized on a larger sample.

The research design for the first preliminary empirical phase followed the theoretical framework presented in the previous chapter. The reasoning for the theoretical framework was derived from existing theories based on a deductive approach, which also guided the empirical analysis (Saunders, Lewis and Thornhill 1997; Yin 1991).

### *3.1.1 The selection procedure*

The criterion for the firm selection was based on a comparative approach. Companies producing software/solutions for two different industries were selected as the target firms. The industries for which these firms produced software products belonged to the energy and banking sectors. The contact addresses of several firms producing software for these industries were retrieved from the yellow pages and initial contact was made through emails. Later on, one firm from each of these sectors was contacted with the aim of arranging interviews. While the European energy sector was growing rapidly, the banking sector was experiencing a steady growth. Both of the firms differed in terms of firm size, product types and industrial development. However, they were involved in the same business area i.e. producing and marketing software for their respective industries. The

varying industrial dynamics of the energy and banking sectors were expected to provide some explanations as to the differences in the speed and success of export expansion.

Another criterion for selection was based on firms' partnerships with subsidiaries of international firms such as Microsoft Ltd., and Oracle Ltd. For SMEs, these partnerships are known as technology partnerships and were considered as the global partnerships. These partnerships were selected as the yet another source of market knowledge while firm is operating in the foreign market. Further, firms' partnerships with marketing channel members such as distributors also acted as one other criterion. Firms reselling products from other foreign firms were not included in the sample. This was because such firms may not have been involved in all the knowledge sharing and transfer processes, as there is no need to transform market knowledge into a viable successful product. Thus, only firms having an international product of their own and with a minimum 20 % of foreign sales were included. Both of the firms conformed to the above-mentioned selection criteria.

### *3.1.2 Data collection*

Initially, contact was made via email to the managers of the selected firms. The email explained the rationale of the study. Both of the firms agreed to participate in the interviews with the promise of confidentiality. It was agreed with the managers that the respondents will either be the founders of the companies in question or their export managers and the interviews will be conducted with a single person at a time.

For both of the selected firms a total of six individual interviews – three with each of the firms – were conducted. Out of these six, five were conducted face-to-face and one via telephone. Initially, it was agreed that the duration of each interview would be 90 minutes. However, in practice, there were two interviews in company B which went on to over 90 minutes apiece. The time-line of the interviews is shown in Table 3.

**Table 3.** Timeline of interviews with the two case companies

<b>Interviewer</b>	<b>Medium of interviews</b>	<b>Date of interviews</b>	<b>Duration of interviews</b>
<b>Company A:</b>			
Single person - Senior Vice President	By telephone	December 2005	45 minutes
	Face-to-face	July 2006	90 minutes
	Face-to-face	July 2006	90 minutes
<b>Company B:</b>			
two persons - Export Marketing Managers	Face-to-face	July 2006	180 minutes
	Face-to-face	August 2006	180 minutes
	Face-to-face	August 2006	120 minutes

Besides the face-to-face interviews, several times emails were exchanged with the managers to ask for further clarifications of some important points. An outline of the questionnaire can be seen in Appendix 1a.

### 3.1.3 *Validity and reliability of the case study*

Validity refers to the degree to which instruments truly measure the constructs they are intended to measure (Peter 1979; Nunnally 1978:86). Validity in qualitative research methodology is described by a range of concepts such as ‘rigor’ or ‘trustworthiness’. Studies suggest specific strategies to attain validity such as persistent observation, cross and prolonged engagement (Lincoln and Guba 1981). Validity in the qualitative studies is a contingent construct which is grounded in the processes of particular research methodology and research projects. Thus systematic measures must be devised prior to data collection in order to ensure validity of the study (Creswell 1998). However, qualitative research approach provides freedom to the researcher to move back and forth between the research design and implementation to ensure congruence among research question formulation, literature review, data collection and analysis. Therefore due to the iterative nature of the qualitative research methodology, validity-check procedures ensure self-correction of the research design as well (Creswell and Miller 2000).

Reliability in qualitative research methodology has been a debatable issue. Some studies refer that ‘since there can be no validity without reliability, a demonstra-



tion of validity is sufficient to establish the reliability (Lincoln and Guba 1985:36), while some others argue that since reliability concerns measurement it is rather irrelevant in the judgement of qualitative research.

In this study, however the validity and the reliability of the qualitative analysis were ensured by taking few measures. As mentioned in section 3.1., the research question of the study matched data collection method. The case-study-based research methodology of the study enabled various relationships to be unfolded as data collection processes moved on. Further, because of a causal relationship, it was important to enhance validity by incorporating several different variables that could impact on the causal relationship. As suggested by Yin (1991:43; Peter 1981) data were collected on each of the contributing factors impacting on the causal relationship. The impact of one such causal relationship between organizational processes and market knowledge on foreign market knowledge competence was seen within the context of factors which facilitated or hindered interaction between the market knowledge and the organizational processes. These factors were considered as the learning orientation of the firm, and more importantly, the barriers to learning. The entrepreneurial orientation came up during the data collection procedures. A detailed explanation of the causal relationship itself and its impact on market knowledge competence, and consequently on the export expansion, were expected to enhance the construct validity of the study. Thus, an increase in the validity of the study was aimed at by examining the impact of the contextual variables. This kind of validity procedure has been termed as 'researcher's lens' by Creswell and Miller (2000).

Further, several theoretical foundations from literature on international business and strategic management were reviewed to find a mix of suitable variables that could impact on the causal relationship. Thus, the interpretation of the causal relationship and its impact on market knowledge competence was based on theory from two different disciplines in which the construct was embedded.

Peter (1981) mentioned that a mere single case study does not establish construct validity. For that reason, the issues in this study were discussed in two comparative firms which belonged to a dynamic and steady growth industry. Further, data was collected through multiple sources, such as individual interviews with three managers and also through secondary sources such as company annual reports. A final draft of the interview transcriptions was also sent to the managers and some of the transcriptions were edited according to updated clarifications. Then, a generalization of the impact of market knowledge competence was attempted by testing the preliminary findings of the case study on a larger sample through a survey-based procedure.

Triangulation, or mixed methodology, is considered as a research strategy that deepens the understanding of different aspects of an issue. However, this does not guarantee validity, but is expected to increase the overall construct validity of the study (Silverman 1993). Creswell and Miller (2000) recommend triangulation as a strategy where researchers search for convergence among multiple and different sources of information. By analyzing the export expansion phenomenon in two different kinds of causal relationships in the preliminary and main empirical phases of the study, a richness of empirical explanations was expected to be gained.

## 3.2 An overview of case company A

### 3.2.1 *Background*

Company A, founded in 1985, is an Information Technology (IT) house providing leading-edge software for the automation of financial processes in large organizations. The firm is headquartered in Helsinki and has been listed on the Helsinki stock exchange since 2002. By the year 2005 it became a leader in its field, with more than 450,000 end-users and served over 1,000 organizations in the private and public sectors. The firm currently runs its international operations in 20 countries and has 43 value-added resellers throughout the world. In 2005 net sales were EUR 42.8 million. Although this company was founded in 1985, exports started as late as 1997. Regardless of this delay, it has been successful in expanding its exports in foreign countries.

### 3.2.2 *Export expansion*

The first international product was developed in 1997, after which time the firm grew rapidly. The number of employees from the time of the company's inception until 1997 remained under 50. However, after the company received its first international order it developed at a fast rate and the number of employees by 2002 had increased to 200. By 2005 the firm had a total number of 500 employees. With research and development set up in Finland, 15 % of the total turnover was spent on product development and R&D up to the year 2005. However, in 2006 after the acquisition of another Finnish firm, the R&D investment increased to 19 % of the total turnover.

After its establishment the company had no products of its own and was only acting as a reseller and consultant for an American firm. The idea of product devel-

opment came from a foreign customer. Instead of performing customer-specific integration within the existing American software, the company decided to create its own product for the customer. In that way a new product and foreign customer came to the firm at the same time. As soon as the firm had a product that could be sold on the foreign market, it started working actively on finding international customers.

The exports of the company started in 1998 to Sweden. Finnish firms which were operating there were the initial sales contacts. After Sweden, exports moved to the Netherlands, Denmark, Norway, Germany, the UK and then the USA. In Norway in 2005 the firm acquired a reseller company as its sales subsidiary. The key strategic markets for the firm today are the UK, the USA and Germany due to their huge growth potential.

### 3.3 Organizational and market knowledge

The company senior vice president (SVP thereafter) mentioned the key knowledge of the company as their selling and marketing skills which have been internalized in the company through experience over the years. However, the real knowledge that the company lacks about foreign markets was described as the knowledge about the customers, and their needs. It was mentioned as;

*I ‘...we usually know that there are customers who would buy, but the biggest thing is the final decision-maker who is making the decision of buying from us and that means that we don’t know the local customers enough, we know that there are customers but we don’t know the market.’*

The USA market had been one of the tough markets in the context of understanding customer needs. Company A took a shot gun approach to initiate foreign business in the USA market and started targeting customers from the east to the west coast. However, the technique proved to be a failure, as it was hard to generate lead sales with the same product in all the areas with distant geographical locations. Due to the varied needs of the customers, the same product could not be sold to all the targeted areas. The failure in generating a good deal of sales led company A to concentrate on small segments or industry sectors and to first develop their reputation and experience in the US market. This kind of problem,

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<sup>1</sup> To preserve the meaning and context, managerial statements are presented here without editing the language.

however, was not so apparent in markets similar to Finnish ones. The SVP explained how the company managed to acquire knowledge of the needs of customers from the foreign market in this way:

*'For rapid development and improvement of products, the firm's strategy is to 'listen to their customers' and identify 'repeatable ideas or requests' from customers. If the request is received from multiple customers, then firm's R&D team works on turning the customers' ideas and suggestions for new product development into actual products. The focus of this work is on the kind of functionality customers like to see in the product. The raw product is then tested with other customers and when the product passes the trial period it is launched as a complete product.'*

Knowledge about foreign marketing practices: With their previous experience in marketing and acting as a reseller for the American firm, company A had experienced that similar methods of marketing worked in different countries. Through the experiential knowledge concerning the marketing practices, it was possible for company A to identify problems when locally hired personnel in the foreign country tried to reinvent their marketing methods. The local management in foreign countries was sometimes resistant to an idea and tried to give the impression to the headquarters that company A possessed less knowledge of the business and marketing practices for their country. However, company A had learned that marketing practices were roughly similar in every country. The hard work for company A in foreign markets was in fact establishing marketing operations, to develop their own capability in marketing, and establishing the lead pipelines of sales through understanding the customers.

However, tried and tested ways of marketing practices could not work in US market for company A. The vice president of company A described the difference between the US and European markets as: US is a segmented market whereas European market is more fragmented. The US market, despite the fact that it was big and diverse, still posed similarity in its operations, knowledge of the institutions, working style and business practices. The European market on the other hand, even though the European Union acted as one single economic area, was still a fragmented market to the company due to a number of countries with different languages, working styles and business practices. Due to previous experience in marketing the product, the company felt more confident about sales growth in the USA. As the vice-president of company A described:

*'In US market however, it is more important that our company has established a value in a similar business where the customer is present and that leads to a trust and good reputation for getting more sales.'*

Partnerships with a value-added reseller and the technology partners were a source to acquire knowledge about the needs of customers from the foreign market. However, partnerships were described as having good as well as some bad points for the company. Through these partnerships, the business was re-vamped faster. This meant that as the local resellers knew the market and had contacts, company A was able to sell the product faster. However, in some situations, partners failed to bring any new knowledge of the customers' needs in their countries and became more like a burden to company A. The vice-president explained:

*'If the profile of the reseller is wrong and the commitment of the reseller is low to the company's product, if the reseller is more interested in doing consultancy activities, rather selling our product then it is costly for us to have a reseller.'*

Company A had gold level technology partnerships with Microsoft Oy Finland and SAP Oy Finland. Technology partnerships were helpful for the firm in producing deals because it meant a seal of approval for the big customers that firms have demonstrated the ability to deliver solutions for SAP or Microsoft environments. These partnerships helped company A to generate more and more lead customers in the foreign markets.

Such technology partnerships were of strategic value for company A as well as for Microsoft Oy (a subsidiary of the Microsoft International in Finland). The technology partners also shared their future product development information for example which new product is coming in the market. Company A then checked whether the produced software programmes were in compatibility with Microsoft servers. A problem with compatibility meant problems from customers who were already running software from company A with Windows applications and they might not be able to run this software once they had upgraded to a new version of Windows. Thus, confirming to the standards of technology, company A could secure the sales deals with their customers. It was explained as: if we had no technology partnerships that means we would lose more deals against the competition.

Company A also learnt by dealing with the technology partners in how to negotiate with their own value-added resellers in an international environment. Further through dealing with value-added resellers company A learnt how to coordinate and manage with partners across borders.

### 3.3.1 *Interaction between organizational processes and market knowledge*

In the beginning export developments had been informal and company A lacked formal ways of collecting market knowledge. During that time period, the company mainly relied on collecting information about how to export and focused on building experiential knowledge. Learning from experiences and previous mistakes had been the main mechanisms to acquire market knowledge in the early stages of expansion. It was explained as:

*'At the current level the company is open to continuous change to improve the operations over time. That means it is important for us to transform and learn from previous experience and not follow the previous experience in a similar manner for new activities, rather company transforms the best practices according to the new situation and then develops new guidelines for starting, ramping up and measurement of any foreign operation in that country. After building formal methods of exports, we know what practices to measure to make sure that the business ramps up fast.'*

Company A developed its best practices for export development through a continuous measurement of routines. The SVP of the company explained it in this way:

*'Depending on the knowledge we collect from market, we changed several times some routines and introduced new routines. The reason that our company needed to change old routines comes up in the measurement process. If an old practice in the face of knowledge of the market generates less-favourable results, it needs to be changed and improved. The marketing routines, business management and methods, and marketing best practices are learnt over time and their depth is increased with experience. However, we are not in favour of introducing new methods of marketing. It is rather more important for our firm that the marketing personnel has a tool box of marketing skills and is able to choose the right tool for the new situation.'*

The development of the best practices of the company can be said as leading towards the evolution of export expansion capabilities. For exports, company A did not always rely upon previously set best practices. In the beginning of starting the export operations, firm-level flexibility was more important and the organizational processes were very loose at the early stage of any foreign operations. Therefore, learning came with experience within a specific foreign market and each market had its own specific best practices, in addition to having a portfolio of general kind of export capabilities. The SVP explained as:



*However, we needed best practices at the maturity stage of the foreign operations. Once we develop certain amount of critical knowledge about the foreign market, best practices started evolving and came into place. In that way each country behaves in its own manner. The key is to be flexible and learn.*

Best practices were established in the area of business practices, such as how to close sales, how to create lead generations and identifying the terms of selling and delivery. The knowledge in all the above-mentioned areas of best practices was shared within company A and this enabled it to test previous best practices. Further best practices were developed in the area of new product development and management of partnership relationships.

Product development processes: Introducing a new product on the market at the right time of the product's life cycle had been described as one of the important market growth factors for company A. In 2006 the company had 13 different products on the international market. However, with this increase in product portfolio, the product portfolio management became a challenge and company A needed formalized routines and rules to manage such a large number of products. As the SVP explained:

*'Some of our product development processes are still in development phase and our firm lacks a high level of formal processes such as formal channels of communication. This is because our firm was still integrating the processes of the acquired firms and bringing the acquired processes to a maturity level would take some time.'*

Changes in product development routines: By the year 2000, company A had only two international products. However, in 2005 the number of personnel and research and development investment had doubled. By the year 2006, the company had the potential of producing 40 products a year, which meant that whenever a new product was needed by the market, company A was ready to produce it: within the same resources, the company can deliver at greater extent. This potential in the product development processes arose after the firm introduced a new process for product development.

Before the new process, company A could only have been aware of the complaints and problems with the product only after it had been tested and used by customers. This late product modification led to quality problems and uncertain outputs. It took a year to produce the perfect product that the customers required. The company introduced a new model which required that the software package had to be integrated once a week. Every Friday the product development team tested the product with customers and noted the changes needed by them. This

required an investment of time and effort from the product development team. However, company A learnt that to shorten the product development time period and to be in the market at the right time with the right product, product testing and checking at intervals during its production was critical. This newly introduced product development routine reduced the product development time from one year to a couple of months.

### 3.3.2 *Contextual factors to organizational and market knowledge*

One of the barriers that company A faced in the US market concerned the hiring of a local person, which delayed the handing over of the operations by two years. The hired person had no experience in marketing, only in the product development and financial automation industry in general. In several cases the initial recruitment of a local person turned out to be a failure for company A.

In the same manner, one of the other obstacles preventing company A from increasing its international operations was to find the right local reseller. The right local reseller for the firm was considered as a reseller who had a large number of the end-users of the products. The other criterion was that the reseller must have had some previous experience with similar kind of a product and if the reseller understood the processes that assist the software, for example financial automation. Local language had been one of the barriers to the commitment of resources in the foreign country. The USA, despite its tough segmentation, was an attractive market due to one single language. France was yet another example of such a difficult market.

Entrepreneurial orientation: SVP of company A attributed one of the reasons for its export success to the vision of its top management team.

*'Our management teams has previous experience form international business and at the beginning of our company, three out of the ten are having native experience and rest of the team was from outside, form different companies, different business, so at the moment we have a very stimulating internal environment for international business development. Our management has lots of good views about how things could be solved and they possess a very constructive way of solving things which is important because there are always things that must be fixed and that requires an attitude from everybody to make things happen.'*

Concerning the role of the top management team he further explained.



*'Expanding operation in foreign countries is always a risk. People like risks. If you take risk you have bigger opportunity, if you don't take risk you don't have any opportunity. So the size of opportunity in many cases increases with the risk. The maturity of the market is used to measure different things from different countries. And when the operation is new, just established it includes more risks and that means we are more in an investment mode, so we need investment from our top management on hiring new people, training them and for developing new working methods according to the new market.'*

Company A faced behavioural challenges when it started export development. Some personnel from the company were afraid of entering the international environment and communicating by phone or email in the English language. To overcome such problems, company A hired people from other companies who had previous experience with exports.

At the stage when the company introduced a new product development routine, it faced severe resistance from the team from the product development area. It was only after, when customers started reacting positively to the new and fast product development routine, that the team were convinced. In the meantime, to implement the new model, company A delegated a new person to oversee the change. This person was strongly oriented towards changing the traditional model with his leadership and goal setting skills.

The reason why the team members resisted the new product development model was explained by the SVP as due to their previous experience with the old one. The new product development process was so different from the traditional model that they were afraid of trying a new one. However, after receiving positive feedback from customers, it was relatively easy for company A to apply the same model in other projects. Today, the company has well-developed guidelines for product modifications. Willingness to change therefore improved over time. The role of people who had been hired from other companies with previous experience of internationalisation had been here.

However market knowledge development has not been all that easy for company A. SVP for company A related market characteristics and firm's internal process to knowledge acquisition as given below.

*'The knowledge development depends on the country we are going to - for example in the United States we must understand what kind of implications different kind of strategies may cause. We didn't have critical mass of understanding of the market and we hired a wrong guy who was implementing a wrong sales model and using wrong marketing tools. It was not enough that two of us say its so, but*

*it took time that the rest of the company learnt from these mistakes but the learning curve would have been even longer if we wouldn't have been anybody inside the house to identify the problem. Our reaction time was little bit better based on the internal critics in place. What we didn't understand was that we didn't have the critical mass of information about the US market. And we didn't utilize all of the information available, as soon as we should have. So it's a learning curve for us.'*

Success: The success factors were described by the SVP of the company as:

*'Our company understood the customer needs better than the competition and managed to turn the customer's needs into a functional product faster than the competition. The first references and contact came from initial success. The other factor of success in our growing exports was the ability of the company for operational scalability –that means measuring the firm- and foreign market-level operations at intervals. To continue foreign operations, we ensured that there are no bottlenecks in the operations. This was done by measurement of the foreign operations at intervals. In this measurement process, certain skills were improved. The foreign operation seems healthy if there are lead sales in the pipe line. The measurement process of the foreign operation was however possible if the company knows, what needs to be measured and what goals are to be set for the foreign operation.'*

## 3.4 An overview of case company B

### 3.4.1 Background

Company B, an IT house specialised in information systems and applications for the energy business in the electricity sector, was founded around 1993-94. With a total number of 96 employees, company B had sales operations in Germany, Sweden, Norway and Switzerland. The Finnish electricity market was one of the first in Europe to be liberalized and company B has since held a strong domestic sales position. After the liberalization of the Finnish electricity market, the founders of the company had sensed a potential international demand for energy market products when the Central European energy market was reputedly to be liberalized. Company B started producing simulators, data management software and application tools in the electricity energy sector for the purposes of upcoming international sales. Due to this early opportunity in the liberalized energy market, company B succeeded in achieving continued sales in several foreign countries.

However, at the time of data collection, company was experiencing problems in international sales growth.

### 3.4.2 *Export expansion*

With new product ideas for the international market, company B utilized knowledge, technology and techniques from the domestic market. The first successful international product was developed in 1995 and its second generation was built in 1998. The second generation product was based on the market need for such an advanced product which came out of the opening of the energy market in Central European countries. The product was developed from scratch and customer modifications such as the change of language were subsequently made according to requirements. International sales began in Switzerland. The second generation product was based on company B's knowledge about energy data management software from earlier smaller product development projects for the international and domestic markets.

The first direct international order was a huge challenge. Up to 1998, Company B had been heavily involved in the domestic market and had only 20 employees. However, almost at the same time, sales agreements with value-added resellers in Sweden, Germany, Switzerland, Australia and New Zealand were made. It was only in Sweden and Norway that company B did not internationalize through sales partnerships. Due to the close geographical locality of these countries to Finland and a similar language, it was easier to set up offices there with 4-5 employees in each.

One of the other reasons why company B did not require partnerships in foreign markets was the nature of the products sold in foreign countries. For instance, a simulator product did not need a sales partnership. District heating software needed to be sold once and for all. However, company B did recognize that if they had had local presence (partnerships) in the countries surrounding Sweden and Norway, there could have been a greater probability of continued sales.

## 3.5 Organizational and market knowledge

The advantage that company B had from its experience as the leader in the deregulated domestic energy market was its knowledge concerning the deregulation phases. Company B was able to sell a product during the opening and post-opening phases of the energy business deregulation. The knowledge from the domestic market (experiential knowledge) about product development and the com-

pany's understanding of the phases that deregulated the energy market was the main asset for business growth in foreign countries. For each phase of the energy business deregulation, there was a need for a different product suitable for customers, or a need for some customer-specific modifications to an existing product. Without any previous knowledge of the domestic market it would have been hard for company B to convince foreign customers about their needs for certain products. The market was so highly dynamic that even the customers failed to understand or foresee their specific requirements. The export marketing manager of company B explained it this way:

*'From the domestic market, the knowledge was the main asset, because without the knowledge it was really hard to convince the customer. In this sector if you can put the argument and have knowledge then its easy to deal with the customers and then if you have the knowledge it's easy to put this into the package. With the growth in export, the knowledge may vary but we do it in a way that we use the same way to go to a new market as we have been doing in previous history.'*

For company B, knowledge of the customers' needs was important as it was challenging for any software firm belonging to energy sector facing deregulations, to integrate customer requirements into a useable product. For the acquisition of the customers' knowledge company B depended on its local sales partners and its own previous experience. If the partner did not bring the right knowledge to the company, it was costly and inefficient to produce a software solution where the customers' requirements were mapped into the product.

### *3.5.1 Interaction between organizational processes and market knowledge*

Partnerships were considered as a means to access foreign market knowledge, specifically regarding the needs of the customers and the sales and marketing of the final product to the end customer. However, company B, never solely relied on the knowledge of the needs of the customers transmitted by the partners. It relied more on its previous knowledge of product development and understanding of the different phases of the electricity energy market.

For Company B a partnership was primarily evaluated on the basis of the knowledge of the customers' needs in foreign countries. The customers' needs during the opening phase of the free energy market were similar from country to country. However, terminology and rules of operating the software could differ. In that case, the basic framework of the software solutions of company B provided general flexibility to create a custom-made solutions package for different customers. A partnership was further evaluated on the basis of whether the partner had good

connections to local potential customers. An additional important criterion was to see if partners had enough knowledge of the business. In some cases during the initial phase of opening up the energy market, when some customers were new to company B's product and had no knowledge of the liberalized energy market, the local sales partners had to be able to convince new customers of the software and its application, otherwise it could have affected sales. Thus, if the local sales partner had knowledge of the business, an increase in the customer base could be expected. The dependency on the sales partner was explained in the following way by one of the export marketing managers of company B:

*'For us it is valuable if the partner has good connections to local potential customer relationships for us. It helps if they know our business and things. We need partners as customers are already in the foreign country, partner has got the customer contacts, partner has friends in the end customers firm, partner can talk the local language, knows the culture of that country, and understands the decision-making process of the end customer already.'*

Further

*'Even in one case (one country) the customers didn't have any previous knowledge of the free energy market and what was coming, when the market is opening and that knowledge was transferred to our sales partners, they (value-added reseller partner for company B) caught up and managed to sell something and convince the customers of our software and applications. It was not necessary for us, but a challenge. So we had the knowledge and they had the connections. If they could have all the knowledge that we had, I guess we could have sold a lot more. When we have delivered the system, customer wants that there is someone near next door to talk to if there is a problem. In one way, the success of our foreign operations depends to a large extent on selecting a right sales partner for our business.'*

Due to the specific nature of the energy deregulation processes in energy sector, the interaction between organizational processes and market knowledge knowledge for company B concentrated around acquiring customer specific knowledge and transforming it into a viable product.

The most challenging job for company B had been product customization - to understand customer-specific features and market-specific formats and to transform them into a commercial product. Due to such developments, several versions of the products were produced for different end customers. Customers' specific requirements were diverse in each foreign market and managing these needs in each country and their product versions to suit 400 different customers was a

time-consuming job for the company. If product specifications were updated, they were updated in all the software versions. This took much of company B's time and managing the existing portfolio of customers was in itself a barrier to expanding exports.

The other challenging job for the company was quality assurance according to industrial standards. Customer-specific requirements and different market-specific versions somehow influenced the speed of exports for the company. Company B had to manage all 200 installations as long as its customers were using this software product. All this required a complicated process of acquiring knowledge about the customers' needs, exchanging several conversations via partners to understand the end-users needs and then sharing the information with the company to respond accordingly. With an increased customer base and less formal means of knowledge sharing, company B is having some problems in managing the process. It was explained as:

*'In our company the decision-making practices and planning are much more practical and simple, we don't only handle the matter in a precise way and things are not so organized in practice. In the beginning we have been very adaptable - easy to change things, distribute info, just ask in the coffee rooms. It's easier to organize and adapt when we have only 10-20 people. Now when we are 100 it's really difficult to get the info and inform everybody. Information sharing has been difficult. We have the same persons doing the parallel things, not separate persons. Now we need documents, planning as we are bigger company and can not adapt fastly.'*

Some of the common routine work in company B was managed through software. For example, the customers' contact information, summary of their specific requirements, their feedback and an automatic email reply system was managed through internal software. The small size of the company was one other advantage in that every employee knew by heart what had been sent to the foreign customers. Thus, the practices and organized routines of company B had increased efficiency. The management was rather demanding but fully supportive when problems arose. Furthermore, again due to the small number of employees, and especially to the very small team dealing with foreign operations, it was easy and efficient to informally share information at the beginning of international operations. Company B was learning to build formal processes of knowledge sharing to remain efficient in dealing with international customers. It was explained as:

*'One of our feature is the continuous development, we have gained the experience and also tried to accumulate the knowledge, and then the knowledge is stored somewhere, its available for new person, who comes to the organization or to the*



*project, so that information is documented. In the beginning when there are few people who work you don't have a big organization, everyone does everything, and when the number of installations increased, then we had to analyze our own business processes, how we serve our customers, and then our organization was structured according to these processes. That was one step further, first there was handful of people and no organization, and then we had 60 people and formal processes.'*

Concerning the best practices of the company, it is clear that the evolutionary nature of the energy deregulation, company developed best practices in the area of product development and learning the customer's needs through their value-added resellers. Further, best practices were also developed in the area of partnership management with foreign distributors. It was explained by the export manager as:

*'Knowledge and experience of our business is the core capability of our business. Our core capability to develop a successful product and then to be able to manage our sales partnerships has given us an edge above others.'*

### 3.5.2 Contextual factors to organizational and market knowledge

Knowledge about market dynamics: In the free energy market customers did not fully understand how the market would grow over a certain period of time. Simultaneously, it was hard for company B to convince customers that the free energy market needed a variety of different data management products for different phases during the growth period. For example, for German customers it was a little too early to understand the data management needs for the opening phase of the market.

Further, export expansion barriers were also partnership related. In addition to a lack of understanding by the German customers regarding their market needs, company B's foreign distributor in that country had no substantial experience in data management systems and furthermore lacked a good local network of customers. The foreign distributor was only interested in selling electricity meters and hardware. Company B learnt from this experience that the contact network and the sales track record of the foreign distributor needed to be checked as a selection standard for future partnerships in other foreign countries. However, an over all learning orientation by the company B in areas concerning business, customers and its partners were regarded as critical to export expansion. The export expansion barriers were explained by one manager in following:

*'When we have already decided to enter a new market, we must understand how the customer needs to handle the energy information processes. If we think what our customers are, we must understand the limitations of the business, how our customers, retailers, distribution companies work. We must understand the mechanism of the hierarchy of the energy transmission system. We must understand the process how does the liberalized energy market works, we must understand how our partners (foreign distributors) communicate, what are the formats they are using and must know the processes of the individual player in the market to whom we are supplying our software. In principle, when you go to one market, you understand the other market too but certain things maybe are organized in different ways. Language of the foreign market is another practical problem, because your product must support the local language.'*

As another manager mentioned:

*'The optimal case for our business is that in the beginning it is good to get more contacts number of customers, but with time you need to establish your own operations everywhere. We must learn to move into that direction. Our previous success in the track record sales has been limiting us from opening up our own sales offices in foreign countries. We had lot of things to do and currently need to prioritize things. We are one year late in that.'*

**Success:** The managers of company B described that in order to expand into further foreign markets, they must focus. At that moment the company was involved at both the horizontal and vertical levels. This was a too broad an area for the company due to the increasing and demanding needs of the customers. It was explained as:

*'We must choose a market segments, because a small company can't be present in very many places. We must choose the strategy how to further internationalize. One alternative is that we have got a standard product, we have got very good software, however we still need to establish strong markets. We are good in project modification aspects and are able to handle the existing projects which need common modifications. However, we have to learn to run bigger projects also, and must develop internal processes and cumulative knowledge. A practical challenge for company B is to improve the quality of the software, and the quality of the processes within the firm.'*



## 3.6 Cross analysis of case studies

The main aim of the case study had been to find out the key organizational and market knowledge that constitutes market knowledge competence for SMEs from software industry. Further, the other aim was to understand how interaction between organizational processes and available market knowledge could contribute for market knowledge competence of such firms. The relationship between market knowledge competence and export expansion capabilities was also investigated. Both of the case studies were cross-analyzed on the basis of two of the propositions outlined in Chapter 2. In the following, an analysis of both of the propositions is given.

### 3.6.1 *Analyzing market knowledge competence*

In this section the first proposition (presented in Chapter 2.6) of the study is analyzed. The proposition stated: the interaction of organizational processes and the available market knowledge is positively related to the market knowledge competence of an exporting firm. For this purpose, first of all from the available data of both case studies, the interaction between organizational processes and market knowledge is analyzed and then the implications for market knowledge competence are identified.

**Market and organizational knowledge:** From the case study two types of knowledge were identified as strategically contributing to market knowledge competence of the firms: experiential knowledge and the knowledge of customers' needs. On the premises that experiential and the organizational knowledge reside in the firm and as knowledge of customers' needs, is acquired from the market, firms consider knowledge of customer's needs as the market knowledge. However, the knowledge development process was interesting though. Market knowledge could only be considered as the organizational knowledge after it is internalized; and was considered as an experiential knowledge when firms were able to utilize it. Therefore, the organizational knowledge base development of an exporting firm was a dynamic cyclic process where firms constantly were involved to convert market knowledge, acquired through direct or indirect experience, into organizational knowledge base of the firm.

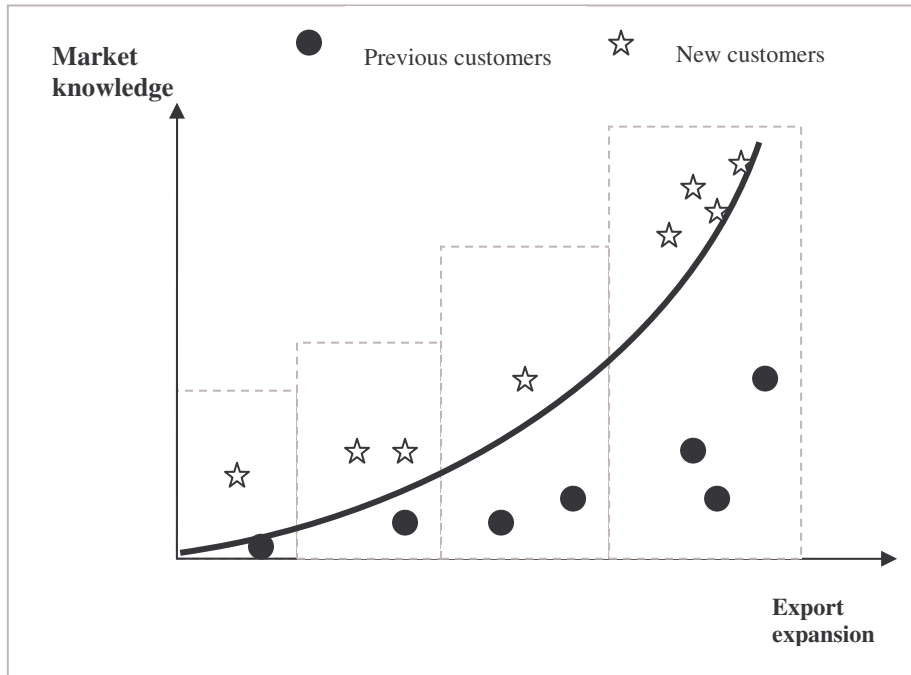
Experiential knowledge, on the other hand, could be classified under the organizational knowledge base. According to the organizational learning and the knowledge-based view, experiential knowledge was the accumulated learning of the firm. Whenever firms started selling and marketing operations in a new country, the previous experiential knowledge contributed as the initial input for under-

stating customers' needs of new customers. Therefore knowledge of customers' needs after being internalized and utilized in the firm acted as the experiential knowledge for next export expansion operation.

The market knowledge of both firms was based on previous experience. Previous experience of the company founders was found to be related to opportunity identification at the beginning of export expansion. While firm A emphasized the previous domestic experience of selling and marketing the product, firm B emphasized the previous experience of doing business and experience in product development in the domestic energy market. This means that the firm developed knowledge of how the energy business had grown through certain growth phases and what product features were accordingly needed by the customers. The learning from this experience was then stored in the firm with the personnel who actually performed the activities. With time, as more and more learning from both firms' experiences was acquired, an increase in their experience bases was achieved.

Firm B concluded that their previous experience of dealing with energy market customers and product development for an industry which was going through phases of establishment was a key asset. This was typical for a firm operating in a dynamic industry in which customers want to satisfy a variety of their own needs from one product. However, for both firms, irrespective of the fact that they possessed experiential knowledge of product development, selling, marketing or doing business, it was the knowledge of the needs of customers which was lacking in export markets and which greatly influenced export expansion.

By comparing both of the firms' nature of customer needs, it can be said that knowledge of customer needs was primarily influenced by the heterogeneity of the needs, meaning that customers from the same industry required a variety in functionality of the product which suited their own needs. The more functional aspects the customers required, the higher the production costs could be. However, a greater knowledge and understanding of the needs of the customer created a vast potential for developing customer-friendly software with less costs. As the number of customers gained by the companies increased, their experiential knowledge related to the market (needs of the customers), product development and ways of doing business increased. This increased knowledge in relation to a wider customer database could be positively related to export expansion. This is shown graphically in Figure 9.



**Figure 9.** The relationship between market knowledge and export expansion.

However, an increase in market knowledge also occurred when the interaction between organizational processes and market knowledge was followed by a strategic approach; when the firm specifically focused on acquiring market-specific learning. For example, when company A relied on its existing experiential knowledge from previous markets and adopted a shot gun approach in a product launch in several states of North America simultaneously with the expectation of making profit, it failed to generate a sales cycle.

**Interaction between organizational processes and market knowledge:** Although resource and the knowledge-based views share the idea that interaction between organizational processes and knowledge is necessary for internalization of knowledge, the interaction between organizational processes and market knowledge was not fully understood by the managers of companies A and B, because of its process-based nature. They were further unable to explain clearly how the interaction process occurred. Moreover, this process was fast, and the export managers of the firms were more inclined to emphasize the outcome of the process rather than to describing its several phases. However, investigating the process-based nature of the interaction was not the focus of data collection. The export managers were clear enough to mention how structural changes in the organizational processes were adapted by the firms though, when the aim of the companies was to acquire certain market knowledge which was lacking.

In order to accommodate market knowledge within the firms, some interactions were relatively easier to adapt by using existing structures/processes and already established rules, while for others new organizational processes were developed. This was clearly evident when company A changed product development procedures and company B mentioned that structured ways of knowledge sharing must be developed due to an increased complexity in the export market.

Both firms greatly benefited from the flexibility of the process management in the early stages of export expansion, which helped them to learn and change processes and routines. The behaviour of the top management team and key personnel working on product development and marketing contributed to the development of the learning capability of the companies.

In order to respond to the heterogeneity of customer needs, both firms attempted to secure market knowledge via partnerships. Partnerships and channel relationships were generally regarded by both firms as key means to access the knowledge of customer needs. Initial and personalised visits to potential customers were made to secure market knowledge on a first-hand basis. Further, personnel within sales partnerships and with foreign market experience were seen as potential resources for export expansion, as they possessed knowledge of the foreign market due to previous experiences. Thus, both companies committed to sales and distribution-related partnership development in foreign countries so as to secure a larger database of customers. The larger database of customers brought a deeper understanding of the market and the knowledge of the customers' needs. The experiential knowledge of the companies also increased accordingly.

**Problems:** Due to the dynamic market environment in the energy sector, company B faced difficulties in standardizing the market and achieving operating economies. The company also experienced production slack, which was solely due to market characteristics and industry growth patterns and not to lacking a capability for product development. This production slack and the dynamic nature of the market characteristics including the heterogeneity of the customer needs influenced the extent to which company B committed itself to exporting. On the other hand, concerning company A, the financial automation industry was relatively stable in terms of customer needs as compared to the energy sector and the industry did not go through several phases of rapid changes.

**Implications of the interaction between organizational processes and market knowledge for market knowledge competence:** The interaction between market knowledge and organizational processes can be directly traced to those factors which are likely to promote knowledge development and its transfer from the market to the firm. From this adaptation process it can be said that market knowl-

edge competence is not only realizing what knowledge a firm lacks about a market, but also the learning of the capabilities and limits of a firm regarding market knowledge acquisition in that specific market. It is somewhat irrelevant if a firm has had previous experiential knowledge; dynamism and adaptation to the market is more significant to cater to new opportunities. Thus, in order to analyze the market knowledge competence of a firm, an investigation of market knowledge development behaviour is crucial.

It can be noted that the export expansion process of both companies had been dynamic. Both of the firms passed through a series of sequential and evolutionary stages of export expansion in which the transition from one type of sales mode to another was clearly evident. During the evolutionary stages the firms adapted their organizational structures to acquire market knowledge in order to respond to a market opportunity. Thus, over all, export expansion was an organizational adaptation process of the structures and processes within the firms, in the context of knowledge that was acquired from the market.

Further, firms would be unable to develop market knowledge competence unless possessing a learning orientation as the interaction involved an adaptation in the organizational structure/processes in order to accommodate new knowledge. The analysis suggested foreign market knowledge acquisition as a situational-specific process<sup>2</sup>. Knowledge from market to market varied due to the diversity of customer needs and market characteristics. The key to market knowledge acquisition was found to be a firm's ability to adapt organizational processes so as to maximize market knowledge acquisition. However, foreign market knowledge was also influenced by the heterogeneity of customer needs, previous experiential knowledge of the firm and the firm's learning ability. In this respect both firms differed and exhibited diversity in export expansion behaviour and a variation in the choice of foreign sales strategy and partnership structures. Diversity in learning ability and the market characteristics of the respective industry of each firm affected their competency in utilizing a foreign market strategy for subsequent export expansion. Company A focused on developing a coordination capability with its partners and also channel management, while company B focused more

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<sup>2</sup> In the economics of organization literature, the interest of the early Austrian economists has been on understanding the link between the economic organizational outcome and the knowledge of particular circumstances, time and location. This was later adopted by the evolutionary and knowledge-based theories of the firm, which focused on the learning capacity of a firm to utilize location-specific knowledge, its transfer to and from the firm and the implications of the relationship for capability development. (*cf.* Boerner, Macher and Teece 2001).

on developing a product-based capability in order to respond to the diverse needs of the customers.

### 3.6.2 *Analyzing market knowledge competence and export capabilities*

This section relates to the analysis of the second proposition presented earlier in Chapter 2.6. Here, the relationship between market knowledge competence and export expansion capabilities is analysed. The second proposition stated: there is a positive relationship between market knowledge competence and the export expansion capabilities of an exporting firm.

The interaction between organizational processes and market knowledge was a dynamic process and foreign market knowledge was internalized as result of the adaptation that a firm went through during the interaction process. The accumulated learning resulted as an outcome of the interaction and enabled the managers to adapt organizational structures in order to accommodate and utilize specific knowledge acquired from the market. Such adaptation directed the firms towards the utilization of market knowledge for market-specific needs of customers. Market knowledge when utilized was later used to develop firm-specific capabilities suitable to the foreign market characteristics of the firms. Moreover, market knowledge competence enabled a firm to update its market knowledge when firms entered and expanded into a diverse market and further incorporate it into existing capabilities. It was due to the dynamic nature of firm-specific capabilities that new knowledge from the diverse market could be incorporated. When the knowledge transfer mechanisms were in place there was a better chance of utilizing capabilities to generate profit in the new markets. Thus, market knowledge competence was found to be the ability of a firm to develop market-specific capabilities that enabled it to search for and respond successfully to market opportunities, and also in a timely manner.

As the theoretical review (Chapter 2) suggested, capability development could occur when firms attempt to form new combinations of knowledge and reconfigure firm-specific assets. The accumulation of market knowledge within the firm was crucial for creating and renewing export expansion capabilities, which were strategically important due to their competitive nature. When focusing on new markets, present capabilities were used. Due to the dynamic nature of the capabilities, it was possible for firms to adapt and upgrade them whenever market trends changed.

Company A focused on marketing, selling and coordinating capabilities, and export expansion was seen when the firm established sales subsidiaries in several

markets. Company B focused on the product development capability and further growth in export markets was achieved as the firm was able to produce a competitive product. For both of the firms, in order to secure market knowledge, market commitment was made mainly in the area of alliances with distributors and value-added resellers and also through technology and sales partnerships. These relations provided access to new knowledge and initial references in the foreign market. Therefore, partnerships not only acted as mechanisms of market knowledge acquisition, but rather, as a source of continuous market knowledge acquisition that made upgrading the existing capabilities possible for firms not operating via their sales subsidiaries in foreign markets. Later on new knowledge was combined using organizational processes in order to develop commercial products.

**Contextual factors:** Investigation of the relationship between export expansion capabilities and the market knowledge competence revealed another of the contextual factors as ‘knowledge transfer mechanisms’, in addition to the contextual factors of entrepreneurial and the learning orientation of firms. One could argue that the interaction between organizational processes and market knowledge is mediated through the knowledge transfer mechanisms employed at firm levels. Company B was not interested in the documentation of shared knowledge due to its small size. Several of the practices were still informal and not organized. A small number of team members were found to be related to greater informal information sharing between members. However, on the other hand, a small number of team members dealing with foreign operations seemed to reflect a low level of commitment towards exports. This can be explained by considering company B, where only 6 members were dealing with foreign operations and managing the existing customer base simultaneously. The export manager of company B mentioned that if the company had allocated 3-4 members to solely addressing the management of existing customers and 2-3 members to actively searching for new foreign opportunities (target customers), it could have greatly impacted the speed of exports.

Company A, on the other hand, had evolved formal methods of knowledge sharing such as routine-based meetings and document sharing. To accumulate organizational learning, personnel with previous experience were hired. They were found to be negatively- as well as positively- related to the development of export expansion practices. Due to certain previous experience, they were sometimes unwilling to change and adapt to the environments of the new company. It also took them some time to adapt to the new system. However, when they were willing to change and learn, it was more useful for the firm to utilize this previous experience for export expansion.



Below, an account of the firms' strategically relevant export expansion capabilities is presented.

**New product development capability:** It was found that the more standardized a product was the easier it was to add customer-specific needs and update the product. For this reason, company A was more efficient at producing customer-friendly products. On the other hand, the advanced technical skills of company B showed that the firm was able to turn customer-specific needs from a dynamic industry into a packaged product, although the time period to acquire a customer database was greater than the managers' expectations.

Company B belonged to an industry which was in evolutionary stages in many countries. Software product development for an industry undergoing phases of growth was considered challenging because each phase required specific interfaces (functional product features) to fulfil new tasks. Introducing several new interfaces and managing to update them in all the existing client work stations increased the challenge of the job. Further, due to the evolutionary nature of the market, many of the customers were not so aware of their own specific needs and had no idea of the kinds of functional features they might need in the product. Due to such reasons, company B targeted a smaller volume of sales. However, as the energy market in Finland was one of the first to undergo deregulations in Europe, the company had accumulated good knowledge and experience of the product's functional aspects. This information could be needed at different stages of the energy market deregulation in other countries.

**Alliance learning and alliance management capability:** The partnership motives were very similar for both companies. The companies' prime motives from their partnerships with foreign distributors and technology partners were to learn about the needs of the customers and the business methods of the foreign country. However, company B developed stronger relationships with foreign distributors as the customer needs were changing in every phase of the industry growth. Company A on the other hand focused on finding suitable partners, transferring the knowledge of the product features to the partners and handing over the operations to the local personnel, thus establishing a foreign sales subsidiary. In a way, the sales of the product for both companies depended to some extent on the ability of the partner's understanding of the customer needs and the ability to market the product.

Further, technology partnerships were utilized strategically to gain the credibility and trust from the bigger customers in foreign countries. Also, many of the foreign customers were using application tools by Microsoft and Oracle and it was very important that the software for financial automation management and de-



regulated energy data management was compatible with such application tools. Such compatibility verified that the software product had passed through the European Union's software laboratories universal standards. Through technology partnerships the firms remained well aware of new product specifications and new application tools launched by Microsoft or Oracle. If the software failed to be compatible with upgraded applications and tools then it was a waste for the company. Thus, every year when Microsoft or Oracle launched updates of applications, these firms also updated their software. It was then easier for the software development firms to convince the foreign customers of the quality and suitability of their products. Similarly, it was easier for the resellers to sell the product and convince the customers.

Further, the scope of the partnership learning capability was not only to learn from partners, but also to maintain a long-term partnership so as to maximize learning. Such long-term partnership management facilitated learning about how to coordinate export activities across borders with partners. It was mentioned by the export manager of company B that the new area on which the firm needed to focus to expand exports was the management of a wide customer database and partnerships in foreign markets.

Partnerships with foreign distributors were important, as they possessed the knowledge of customer needs and the software business situation in their respective markets due to a local presence. The more knowledge the distributors possessed about market operations related to the software business, the more attractive and indispensable they were to both of the companies. Therefore, it was either easier to hand over the business or to acquire them to internalize the market knowledge.

To induce sales in foreign countries initially, sales partnerships with Finnish firms were used. When the domestic firms were satisfied with a good software product, they drew-up contracts with the same company responsible for their foreign business. For example, company B sold the product to a Finnish company operating in Germany. Such a partnership developed the initial sales reference in the foreign countries where these domestic firms were operating. It was possible for both companies to obtain an initial sales reference in exports through maintaining a good relationship and providing a satisfactory product and service to the domestic firms. This helped the software firms gain a foothold in establishing their businesses in foreign countries.

**Marketing planning and implementation capability:** Company A explicitly mentioned its experience in sales and marketing as the key to success in foreign exports. Marketing skills were described by the SVP of the company as the plan-

ning and marketing implementation skills to sell the product in foreign countries. Because the company had ten years of experience in domestic sales and marketing, it was relatively easier to understand the product marketing planning and marketing strategies when exports started.

In the next section, the theoretical framework is presented based on the key points of the analysis of both propositions.

### 3.7 Theoretical framework for the main empirical study

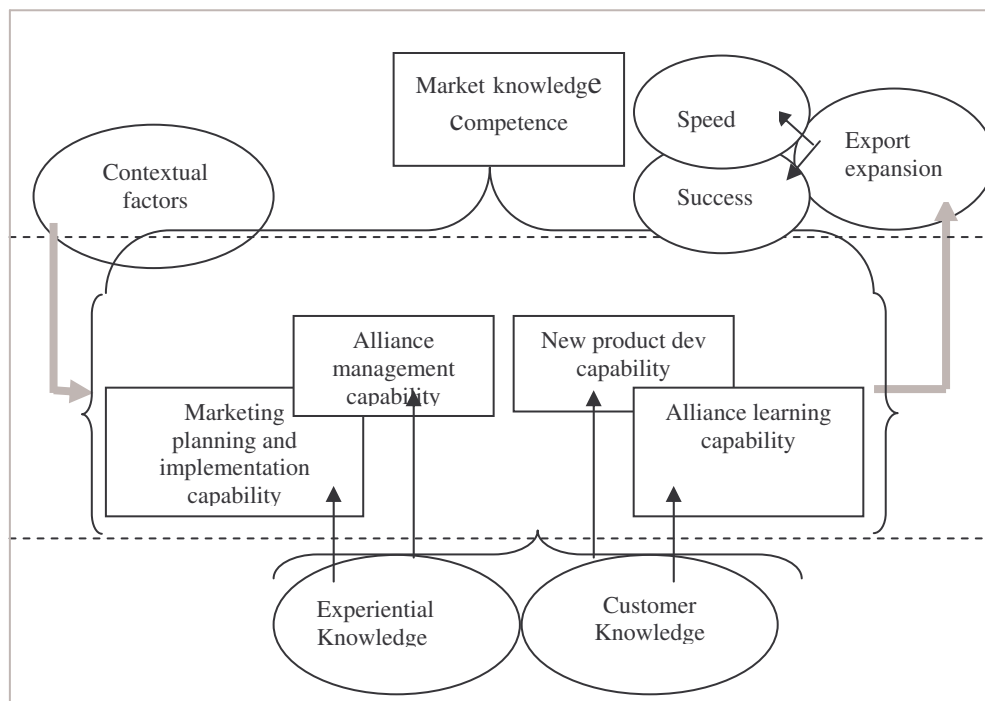
The results of the data analysis from both companies revealed that knowledge of organizational processes that firms used to acquire, shed and release export expansion related resources influenced the interaction between market knowledge and organizational processes. Therefore, market knowledge competence was not only just realizing what knowledge a firm lacked about a market, but also the lacking organizational knowledge that limited a firm to acquire market knowledge in that specific market and learning and development of the export expansion capabilities specific to a foreign market. Nevertheless, the experiential knowledge and the knowledge of customers' needs were found to be the key organizational and market knowledge constituting the intangible resources to market knowledge competence. The interaction between organizational processes and market knowledge resulted in the development and acquisition of both these kinds of knowledge.

Further, the market knowledge competence of the firms was found to be positively related to export expansion capabilities. Due to the interaction between market knowledge and organizational processes, the firms went through a process of choice and change of the processes towards knowledge sharing and organizational adaptation to create new knowledge. When the firms' structures were modified to acquire and accommodate new knowledge, a co-evolutionary process of foreign market knowledge evolution and capability development followed. Thus, as said earlier, foreign market knowledge competence comprised not only of the knowledge creation related to the knowledge of the needs of customers and experiential knowledge, but also included the knowledge of the capabilities and the limits of the firms in the context of foreign operations.

In the preliminary theoretical framework as presented in Chapter 2 the specific knowledge belonging to organizational and the market knowledge were not then identified. This was identified through cross case analysis as the experiential

knowledge and the knowledge of customers' needs. Please see Chapter 3.6.1 page 75 for a discussion of what specific organizational and market knowledge level knowledge contributes to market knowledge competence of SMEs from software industry.

Although all the four kinds of export expansion capabilities rose from experiential knowledge of the firm, for analysis purposes, capabilities were categorized as arising from either experiential knowledge or knowledge of customers' needs. From the analysis of case studies it is evidently clear that alliance management and the marketing planning and implementation capability required input from the previous as well as existing experiential knowledge of the firm in these areas. Therefore, these two capabilities were categorized as arising from the experiential knowledge (see Figure 10). The proposed relationship between foreign market knowledge competence and the speed and success of export expansion is shown in Figure 10.



**Figure 10.** Theoretical framework for the main empirical part of the study.

It is also acknowledged that the other two capabilities of alliance learning and new product development indeed were developed by initial input from the existing experiential knowledge in these areas; however, these capabilities required a continuous renewal and integration of learning through alliances about the new customer specific knowledge and then customizing it in the form of products. Therefore the nature of these capabilities turned out to be more dynamic, and as

more of the input in development of these capabilities was required on continual basis in order to upgrade them, alliance learning and new product development capabilities were considered as arising from customer knowledge (see Figure 10).

Further, the contextual factors as in the context of software development firms, were not either identified as well until the review of theories. Therefore were not mentioned in the preliminary framework of the study. The contextual factors were later identified as entrepreneurial orientation, learning orientation and the knowledge transfer mechanisms through cross case analysis. The contextual factors of a firm played a critical role in the smooth interaction between organizational processes and market knowledge. It was found that firm-level knowledge transfer mechanisms, the orientation of the firms towards learning and the managements' commitment to exports influenced export expansion capabilities.

To generalize the preliminary findings, the typical knowledge which were belonging to the organizational and the market knowledge, then the specific capabilities belonging to experiential knowledge and the knowledge of customers' needs and the contextual factors to export expansion capabilities were used to formulate a theoretical framework. Furthermore, the export expansion capabilities were linked with the speed and success of export expansion. The dotted lines represent the key issues addressed so far in the theory and preliminary case study analyses. Further, specific export expansion capabilities were not then identified.

Based on the theoretical review of theories in Chapter 2, contextual factors that appeared significant from the preliminary review of literature and the preliminary findings of the case studies as the learning orientation and the management's orientation towards and the firm-level knowledge transfer mechanism will be emphasized. Further, concrete hypotheses regarding the relationship between export expansion capabilities and the speed and success of export expansion will be developed in the next chapter.

The findings of the two comparative case studies are substantial enough to generalize for a larger sample of firms in the software development industry. However, the main purpose of the case studies was to understand the phenomenon of market knowledge competence by exploring the interaction between organizational processes and market knowledge. It was recognized by both case companies that inter- and intra- organizational factors and mechanisms acted together, and the ways this interaction took place was influenced by the organizational learning processes at the firm level. The interpretive or adaptive ability of the firm further determined which of the knowledge needed to be changed and which retained. The interaction of organizational processes and the available market knowledge will not be further discussed in this study.

### 3.8 Summary

The main aim of this chapter was to employ a preliminary research methodology to understand how interaction between organizational processes and market knowledge could influence market knowledge competence. To investigate this, it was considered important to explore what intangible resource constituted market knowledge competence in software development firms and what factors facilitated/hindered market knowledge acquisition. For this purpose, the chapter started with a discussion of the case study research methodology and continued with a consideration of the selection procedure of the case companies followed by an analysis of the data collection method and the validity and reliability of the study. Next an overview of the export expansion behaviour of two of the case companies was given. The overview presented a general discussion of how the companies acquired and utilized market knowledge to expand exports. This was followed by a specific discussion pertaining to the two proposed propositions. Here, market knowledge competence and export capabilities were specifically emphasized.

In emphasizing market knowledge competence, attention was paid to the interaction between organizational processes and market knowledge. The investigation of the relationship between organizational processes and market knowledge interaction revealed two important insights. First, export expansion appeared as an organizational adaptation process of the structures and processes within the firm, whereby the firm acquired knowledge needed for the expansion of exports. Second, the interaction directly traced to those factors which probably promoted knowledge acquisition and transfer from the market to the firm. Regarding the second insight, the learning orientation of the firm towards maximizing market knowledge internalization was one of the critical factors facilitating market knowledge competence. The adaptation of the firm's processes to accommodate market knowledge underlined the fact that foreign market knowledge competence was not only knowing what knowledge the firm lacked about a market, but also the learning of capabilities and limits of the firm with regards to market knowledge acquisition in that specific market. Two kinds of knowledge: experiential and customers needs were found to critically constitute market knowledge competence for export expansion.

Supporting the theoretical ideas related to capability development, an analysis of the relationship between market knowledge competence and export expansion capabilities confirmed a positive relationship. New combinations of knowledge and the reconfiguration of firm-specific assets for marketing, selling and coordinating partnerships and international operations resulted in export expansion capabilities of new product development, alliance learning and management as well

as market planning and implementation. These capabilities were useful not only for the existing market but also for creating opportunities in new markets. Due to the dynamism of the interaction process and the continuous learning approach, the firms were able to regenerate and reconfigure export expansion capabilities according to specific market situations.

In the end, the findings from the preliminary empirical part of the study were used to develop a comprehensive theoretical framework for the main empirical part. In this comprehensive framework, contextual factors, knowledge belonging to the organizational and the market knowledge and export expansion capabilities were included. Moreover, the relationship between export expansion capabilities was linked to the main dependent variable of the study. Further discussion of each of the export expansion capabilities and their link to the dependent variable of the study was left for the next chapter.

## 4 MARKET KNOWLEDGE COMPETENCE AND EXPORT EXPANSION

In the preliminary analysis of the case studies, market knowledge competence was reported as influencing export expansion capabilities with the contextual effects of entrepreneurial orientation, learning orientation and market knowledge acquisition factors. In line with the second research question of the study and in order to investigate the relationship between export expansion capabilities and the speed and success of export expansion, this chapter attempts to thoroughly explore the constructs of the independent variable such as market knowledge competence, export expansion capabilities and the contextual factors of entrepreneurial orientation and barriers to market knowledge acquisition. In this discussion, their link with the dependent variables of the speed and success of export expansion is developed as well.

Therefore, the aim of this chapter is to build on the preliminary findings of the case study analysis to develop hypotheses for the main empirical study. More specifically, the origin and foundations of the construct of market knowledge competence within strategic management and international business literature are analyzed in the context of export expansion capabilities. These capabilities are then linked to the speed and success of export expansion.

The chapter is structured as follows: Section 4.1 reviews the characteristics of foreign market knowledge competence. Section 4.2 discusses the link between market knowledge competence and export expansion, focusing on the speed and success of export expansion. After this review, Section 4.3 continues with the discussion of export expansion capabilities whereas specific hypotheses are also developed in this section. This is followed by contextual factors contributing toward export expansion capabilities in Section 4.4. In 4.5 a summary of the chapter is presented.

### 4.1 Characteristics of market knowledge competence

Firms accumulate the most fundamental intangible resources of knowledge and skills in an incremental manner, specifically those related to the foreign market. Market knowledge is also available to rival firms, and it can only be regarded as a competence when it leads to sustainable competitive advantage. Firms which utilize market knowledge for export-related capability development have the advantage of developing sustainable competitive advantage. However, to view market



knowledge as a competence for export expansion it is necessary to analyze the nature of this form of knowledge.

The knowledge-based view describes competency as an intangible resource which is valuable, rare and difficult or costly to imitate because of time-consuming learning processes involved in its development. Both the organizational learning and resource-based views of firms relate the tacitness of the knowledge to competitive advantage. In contrast to 'objective knowledge', which can be gathered through market research (Andersen 1993; Johanson and Vahlne 1977), these perspectives stress the tacit aspect, generated primarily through learning by doing or experience-based learning (Johanson and Vahlne 1977; Barkema and Vermeulen 1998). General knowledge related to international operations and country-specific knowledge pertaining to the target market's institutions, businesses and industry structures has also been mentioned as an intangible resource within a firm which influences its lateral growth into other markets (Andersen 1993). However, some other studies also mention the characteristics of knowledge associated with a competency as valuable, heterogeneous, imperfectly imitable and difficult to substitute (for a reference to such studies, see Table 2). Further, King, Fowler, and Zeithaml (2001) discuss the characteristics of competency as tacitness, robustness and embeddedness

The tacitness of competency refers to knowledge and skills which are related to the competency and which are intrinsic and rooted in a firm's previous experiences. Furthermore, they are difficult to articulate and share. Thus, knowledge and skills are embedded in the firm's routines, structures, processes and personnel's behaviour. Due to its tacit nature, the development of competency is context-specific and based on the history of the firm. Considering market knowledge competence from this perspective, it is deeply rooted in the firm's organizational context, developed over time as the international experience of the firm grows and is not easily transferable to other firms.

Robustness, the second strategic characteristic of competency, is the extent to which the competency retains its value in a changing environment such as technological change or changes in the political or economic structures of a foreign market (King et al. 2001). Market knowledge competence can be assumed to deliver significant value to internationalizing firms in the face of changing environments. This is discussed as follows:

First, relating information as a prerequisite for effective planning and decision-making, Morgan and Katsikeas (1998) explain that export involvement is largely a function of an organizational learning process requiring firms to acquire, analyze and evaluate information from pertinent environmental sources. They sug-



gest that firms which acquire and use market information regarding the overseas buyers, competitors, market behaviours and associated issues, are at an advantage over other firms in displaying a greater propensity to enter new markets, and developing formalized systems for acquiring and managing information within the firm.

Second, the robustness of market knowledge can be assessed on the basis of its influence on formulating appropriate strategies. The influence of market knowledge on strategy has mostly been analysed in the context of the choice of a foreign market and the selection of entry mode (Andersen 1993; Erramilli 1991; Erramilli and Rao 1990). A firm with relatively less previous knowledge of doing international business is typically reluctant to expand its affairs in a new market which is different to its current foreign market. Thus, in cases where the environment is changing, prior knowledge still provides input for the development of further knowledge about the new market.

Third, market knowledge can be related to the ability of sense-making which enables a firm to signal market changes (Stopford 2001) and act accordingly. This is referred to as 'market signalling' and its relationship with organizational learning and knowledge accumulation has been emphasized in several studies (Weick 1995; Hedberg and Wolff 2001). Other scholars (Vorhies 1998; Morgan and Strong 1998) report a firm's organizational structure and market information processing capabilities as positively related to superior market performance.

Embeddedness, the third characteristic of competency, is the extent to which the knowledge and skills related to the competency are embedded in the firm, so that when employees leave the knowledge remains within the organizational knowledge base. The embeddedness affects the transferability of competency to other firms and is determined by where the competency is located. For example, it can be found within technological systems, managerial systems or organizational cultures and values. Competencies which are located in the knowledge and skills of employees are most mobile as compared to those embedded in the organization's culture, routines and systems which are highly immobile. Within this context, market knowledge can be said to be immobile due to the intrinsic understanding and development of the affairs of a particular firm in foreign markets. However, the learning accumulated by the personnel should be transferred in case they leave the organization. As strategic resources are sticky, firm-specific and largely idiosyncratic to the firm (Cohen and Levinthal 1990), market knowledge accumulated at an organizational level may thus be regarded as immobile in nature.

Because the market knowledge of a firm is tacit in nature, has a value of robustness within the context of a dynamic environment, is inimitable and embedded in

the firm (Day 1994a; Prahalad and Hamel 1990), it can thus be assumed as a competence for exporting firms in foreign markets. However, any general kind of market knowledge, although tacit in nature such as country-specific institutional knowledge that firms acquire and accumulate from markets, may not be treated as market knowledge competence; such competence can only be realized when it is utilized within the firm and is capable of giving rise to sustained export capabilities. Understanding the linkage between knowledge and capabilities is essential, not only for addressing the relationship between knowledge and capability development, but also for examining the consequences of export expansion capabilities on the speed and success of export expansion.

## 4.2 Market knowledge competence and export expansion

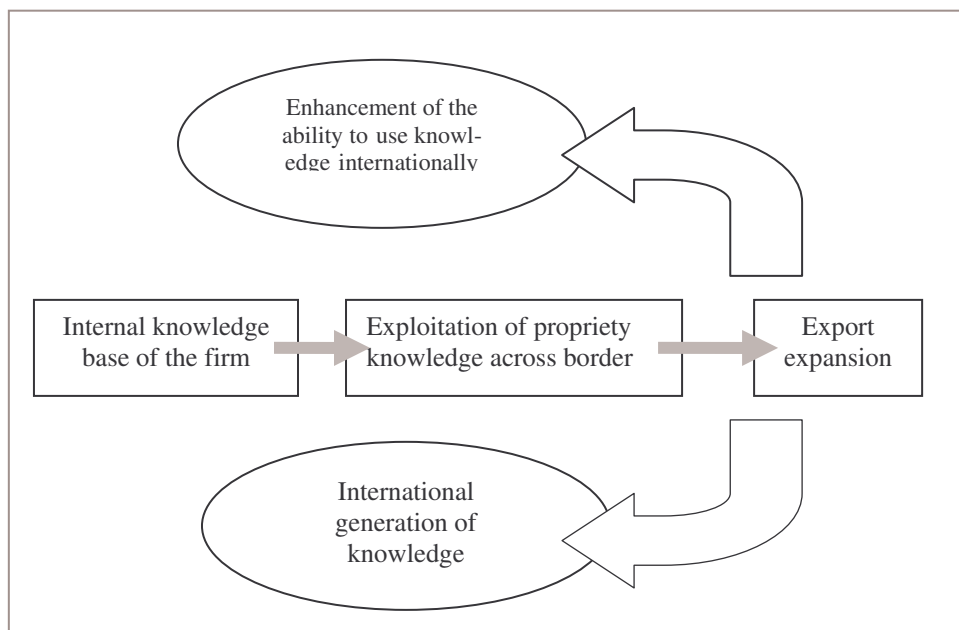
In the context of the theoretical framework of the study, this section attempts to understand how market knowledge competence is relevant to export expansion capabilities. Later, in sections 4.2.1 and 4.2.2 the relationship between market knowledge competence and the speed and success of export expansion are discussed.

The significance of export-related capabilities for developing and deploying the foreign market knowledge of an export venture has been the subject of current interest in international business literature (Cavusgil et al. 2007; Morgan et al. 2003; Kogut and Zander 1992; Makadok 2001; Teece et al. 1997). The KBV scrutinizes the deployment of strategic knowledge through the routines and capabilities of a firm, since knowledge needs to be converted to organizational level capabilities in order to enhance its value. In the KBV capabilities are treated as coordinating mechanisms through which the knowledge base of an organization is developed, deployed and combined for accomplishing strategic tasks. The resource-based view which treats knowledge as a strategic resource emphasizes resources as central to firm performance (Peteraf 1993) and capabilities as the organizational processes by which the knowledge base of an organization is developed, combined and transformed into value offerings for the export market (Morgan et al. 2003; Day 1994a).

The role of market knowledge on export expansion is expected to be significant when dealing with a complex international environment and diverse foreign operations. Firms from the software industry face the following complexities at various levels: first, industrial complexity, which is related to a dynamically-growing industry; second, product complexity, when consumers' need and the

technology to develop a product changes rapidly, and competitive complexity, when competitive products quickly appear on the market. Internationality adds further complexity to the activities of knowledge acquisition, transferring and exploiting it for subsequent expansion.

In such situations, the internal knowledge base of the firm serves as an input for the development of specific capabilities concerning expansion into foreign markets. Thus, through capability development, firms enhance their ability to use previously accumulated knowledge in new situations and simultaneously create new market knowledge. Creating new knowledge of the foreign market is important because foreign firms do not possess the same knowledge as indigenous and competitive firms. The foreign firm must possess an advantage over these firms which already operate in the market. Thus, capability development not only acts as an instrument of strategic knowledge exploitation previously existing in the firm, but also as knowledge creation in the new market. See Figure 11 as an illustration of this point.



**Figure 11.** Knowledge creation and exploitation in the export expansion of firms. (adapted from Macharzina, Oesterle, and Brodel 2001)

Figure 11 highlights the point that firms dealing with the internal and external management of complex knowledge achieve export expansion objectives by creating and applying knowledge about export operations simultaneously. In this process, to survive the complex environment and competition, internally available knowledge is utilized to enhance existing capabilities across border. Moreover,

new knowledge of the international market is generated by creating new capabilities specific to the foreign market.

To effectively accomplish export expansion tasks, the market knowledge base of an exporting firm must be utilized. Zollo and Winter (2002) mention in their model of knowledge development that capabilities arise when strategic knowledge is utilized, deployed and combined to an extent which produces enhanced values. Thus, capability development is linked to embedding the knowledge base of an organization into various value-creating activities (Morgan et al. 2003). The ability of the firm to leverage and exploit the knowledge base for value-creating activities by transferring and combining knowledge can be linked to the formation of capabilities in the areas of product and process innovation and managing strategic partnerships etc (Kogut and Zander 1992; Teece et al. 1997). Therefore, a relationship exists between market knowledge deployment and the export-related capabilities, when strategic market knowledge is acquired, utilized and transferred to firms with a specific purpose of utilizing it for expanding exports.

Several types of export-related capabilities are identified in literature. From the resource-based view, resources and capabilities such as informational and relationship building capabilities have been positively related to foreign market knowledge competence. Information capabilities have been linked to the reduction of uncertainty in export marketing (Katsikeas and Morgan 1994; Diamantopoulos and Souchon 1996). Relationship building capabilities, for instance with suppliers, customers and other channel members, have been mentioned as enabling a firm to respond to export market requirements. Product development capabilities include existing product modification and new product development processes. However, the focus here is only on capabilities which are found suitable for the software development business and identified through preliminary case analysis.

#### *4.2.1 Market knowledge competence and the speed of export expansion*

As export expansion is driven by managing the internal knowledge base and the externally available market knowledge, the speed of export expansion is significant for firms belonging to a dynamic industry such as software development. The basic assumption relating speed to export expansion assumes that firms vary in the amount of time they take to acquire and internalize knowledge specific to export expansion. Therefore, the time duration for market knowledge competence acquisition may eventually affect the speed of export expansion (Blomstermo and Sharma 2003).

In this study, rather than an individual perception of time, the emphasis is on organizational time. In previous studies time has been conceptualized on the basis of 'objective' as well as 'subjective' time. 'Objective time' refers to minutes, days, weeks and years, is largely standardized, is separate from individual experiences and is finally linear. On the other hand, 'subjective' time is attributed as an 'individual dimension resulting from the values held by the actors, from the significance ascribed to a situation, from limiting factors, from attendant circumstances and so forth' (Weber and Antal 2001:352). Thus, time can be conceived qualitatively or quantitatively. Organizational time is still a relatively complex phenomenon. This is because firms are social systems, embedded in a multifaceted environment and organizational time is a subset of social time (Hassard 1996; Weber and Antal 2001), economic time and world time. For that reason, firms are under dynamic time pressures and organizational time can be seen as unique from firm to firm.

It is though, unknown to firms how long market knowledge competence takes and whether the duration to its development can be reduced. Barriers and the contextual conditions are also important, since these conditions may significantly influence the time duration for market knowledge acquisition and creation. The time perspective in terms of speed of export expansion may reveal some insight into how firms perceive the event of export expansion, what needs to be done, whether the firm is oriented towards the future or present only and the kind of temporal boundaries such firms apply to decision-making and actions regarding export expansion. The speed of export expansion therefore is a behaviour filter in the analysis of organizational activities directed towards export expansion.

However, it is extremely difficult to generalize the amount of time it takes a number of firms to create and acquire knowledge, specifically when the duration is also externally influenced. For this reason, the speed of export expansion is seen from a qualitative and human (subjective) perspective. As a subjective concept it is conceived as the relative time duration within which managers expect to achieve targeted sales in foreign countries. Thus, speed is a firm-level subjective indicator of managerial perceptions of attaining targeted strategic goals for expanding the exports of the firm. Speed in this context may also be perceived as an indicator of organizational learning. In order to achieve the targeted goals of the firm for a certain project in a foreign market firms must know how learning processes can be accelerated or slowed down. Within the context of this study, speed of export expansion may indicate both lags in market knowledge acquisition and the creation of new market knowledge.

Even though length of time may not be a perfect behavioural filter in the analysis of organizational activities directed towards export expansion, it may however indicate how smoothly the interaction between underlying inter-connected variables occurred for foreign market knowledge acquisition and new knowledge creation. This aspect has been referred to as 'synchronization' – the act of coordinating events and recognizing when something should or must be done (Weber and Antal 2001). Smooth synchronization is attributed to an understanding of how firms coordinate their own actions with those of others, such as their partners for example. It may also refer to how they coordinate these actions with external time pressures. However, synchronization is not all that easy for firms and finding optimal moments of time for actions (windows of opportunity) can be a difficult task. Thus, speed as a subjective indicator may determine the relationship between export capabilities and export expansion (Ancona, Okhuysen and Perlow 2001a; Mitchell and James 2001).

#### 4.2.2 *Market knowledge competence and the success of export expansion*

With reference to the success of export expansion and in the context of the framework of the study, market knowledge competence can lead to the identification and exploitation of opportunities where firms utilize specific capabilities for export operations (De Clercq et al. 2005). Success seen in this study, by getting continued lead sales through development of new opportunities to develop business, can be an indicator of how well firms utilize previous and new knowledge. Success can be measured by how satisfied a firm is with their products in the international markets, how the timeframe has been managed from the launching of their products until the realization of the first sales target and how well relationships with alliances in the foreign market have been maintained.

As Forsgren (2002) suggests, positive learning increases firms' knowledge about existing alternatives. The firms learn to carry out operations more effectively through the accumulation of knowledge and skills (Fiol and Lyles 1985). The integration of heterogeneous knowledge acquired from different sources reduces the uncertainty about the inherent capabilities within firms. Firms perceive export activity as an opportunity and are more likely to continue export operations in subsequent foreign markets (Burpitt and Rondinelli 1998; 2000).

Increased knowledge can also be related to seizing an opportunity which is available for a short time, rather like a strategic window. However, due to a lack of knowledge, firms may lose this opportunity. In this scenario, existing market knowledge competence not only enables a firm to capture the opportunity, but also to combine potential resources and use them in order to take advantage of it.

Thus, opportunity development is considered as a matter of competence management (Ghauri, Hadjikhani and Johanson 2005; Alvarez and Busenitz 2001).

From the analysis of the case studies, alliances with local distributors and technology partners are found to be one key source for opportunity development and for the successful increase in lead sales in a foreign market. Similarly, software development firms work with global technology partners such as IBM Ltd, or Microsoft Ltd to generate and introduce new solutions according to the user-specific requirements of the customer. In the case of alliances, software development firms enhance the value of the cooperative relationship only when there is sufficient understanding of the value of the heterogeneous resources that the partnering firms bring into the relationship. Thus, in order to take advantage of the opportunity in the foreign market, a combination of other resources is rather more significant to enhance the value of the existing resources and knowledge. In sum, market knowledge competence and success in a foreign market can be said to be linked.

In the next section a discussion of the two components of market knowledge as experiential and the customer knowledge plus the export expansion capabilities arising from them is presented. The relationship between export expansion capabilities and the speed and success of export expansion is developed through hypotheses.

### 4.3 Capabilities, the speed and success of export expansion

#### 4.3.1 *Experiential knowledge*

The current experience of a firm has been analyzed in a variety of previous studies to see its impact on the choice of foreign operation mode (Eramilli 1991; Agarwal and Ramaswami 1992; Bell 1996) and international development (Johanson and Vahlne 1977; Sullivan and Bauerschmidt 1990; Chetty and Eriksson 2002). Although prior studies mainly addressed the relationship between experiential knowledge and the choice of operation mode, the stance of the argument is different when a relationship between experiential knowledge and export-related capability development is considered (Morgan et al. 2003). Experiential knowledge is viewed here with a specific focus on how it results in organizational learning and capability development when widely adopted within the firm.



The knowledge base of an export venture is shown in Table 4. Two types of knowledge constitute the experiences of a firm: experiential knowledge (Penrose 1959) and objective knowledge.

**Table 4.** Knowledge base of an export venture

Knowledge types	Characteristics
<p><b>Experiential Knowledge</b></p> <p>General Knowledge</p> <p>Specific Knowledge</p>	<ul style="list-style-type: none"> <li>▪ accumulated through learning by doing</li> <li>▪ knowledge needed for performing export-related operations</li> <li>▪ Transferable from firm to firm</li> <li>▪ specific to individual markets</li> <li>▪ tacit</li> <li>▪ sticky to its origin</li> <li>▪ informational knowledge as the specific knowledge of the market</li> </ul>
<p><b>Objective Knowledge</b></p>	<ul style="list-style-type: none"> <li>▪ Accumulated through market research</li> <li>▪ Explicit</li> </ul>

From Table 4, experiential knowledge can be divided into general and specific knowledge. Carroll, Rudolph and Hatakenaka (2002) mention that firms facing rapid changes in the environment (industry uncertainty conditions) struggle to utilize interdependent sets of knowledge and combine skills and knowledge derived from specific as well as general knowledge. General knowledge is the knowledge needed for performing export-related operations and is transferable from firm to firm. Specific knowledge is that which is specific to individual markets and is tacit and sticky to its origin (Johansson and Vahlne 1977). Experiential

knowledge accumulated through learning by doing is a source of input for decision-making when problems or opportunities arise; specifically in situations of uncertainty when information is difficult to acquire from other sources. General and specific market-related knowledge influences the relationship between the target market choice and firm performance. Other studies mention informational knowledge as the specific knowledge of the market of either consumers or distributors which is needed to perform certain activities (Morgan et al. 2003). Morgan et al. (2003) conclude that the knowledge base of export venture consists of a combination of interrelated general, specific, informational and experiential knowledge.

Experiential learning may occur when knowledge is created by direct observation of or participation in events, or from a positive and negative reinforcement of prior choices. It allows required tasks to be effectively and efficiently accomplished (Levitt and March 1988; Fiol 1994; Helfat 1997; Corbett 2005). Naturally, experiences with positive outcomes are reinforced and adopted in firms and experiences with negative outcomes are discarded.

Nelson and Winter (1982) relate the conversion process of experiential knowledge into learning through organizational capabilities such as routines. In their opinion, prior experience helps to gain an understanding of the outcome of a routine for solving an organizational problem. Furthermore, repeated use of previous routines for performing export-related tasks may eventually turn them into organizational processes called capabilities (Morgan et al. 2003). In this sense, experiential knowledge can be used as a tool to formulate organizational processes that enable the effective and efficient accomplishment of tasks, allowing firms to successfully adapt to the foreign market and follow market commitment.

Eisenstein and Hutchinson (2006) mention in their study about the acquisition of market knowledge that learning from experiences is of value when it is used repeatedly for making decisions about concrete actions, observing the outcomes and then further changing the organizational behaviour to adopt changes. Feedback and evaluation of the outcomes of the decisions are important for the development of general knowledge which is used for performing specific tasks in the firm. In their study, three experiments that investigate the effects of what is learnt and how transferable that learning is across related decision tasks are examined. The results of the study reveal that experiential learning is likely to be a risky proposition as it could either be completely accurate and efficient or completely biased and full of errors.

In rapidly changing and complex markets, the benefits of experiential knowledge are somehow limited, unless entrepreneurs interact with various types of knowl-

edge(s) in order to develop new knowledge and adopt a proactive view of knowledge development and risk-taking. Further, in complex markets, where technology and customer-choice change rapidly, the complexity of the problem increases. In these situations, experiential knowledge may not provide a full benefit and firms go through the process of a cognitive search to acquire knowledge related to the new situation (Chihmao, Jack and Todd 2007).

However, other studies analyze the effects of experiential learning within the process of opportunity identification and exploitation (Corbett 2005). Prior knowledge of customer problems and also markets and the ways they can be served has been positively linked to successful opportunity identification if used in combination with new knowledge. Chetty, Eriksson and Lindbergh (2006) in their study of three types of firm experiences: international, country and ongoing business experiences, consider how such experiences influence the perceived importance of institutional knowledge in the internationalization process. The study cross-analyzes experiences at different levels and in varying time frames. Analyzing 1010 firms, they find that a variety in experiences from ongoing as well as multiple past business deals in various countries has a positive effect on institutional knowledge development, as compared to multiple past experiences in a specific country.

In sum, experiential knowledge can be related to firm-specific capabilities, provided the market information acquisition and dissemination processes as mechanisms for learning about markets exist at the organizational level. Two of the capabilities arising from experiential knowledge are discussed below.

#### *4.3.1.1 Alliance management capability*

Experiential knowledge concerns accumulated learning relevant to doing business in the foreign market. However, in the context of managing strategic alliances, experiential knowledge would concern utilizing it with alliances in new foreign markets. Previous experience in dealing with alliances in foreign countries enables a firm to better match a partner's characteristics and to acquire local knowledge from them. Thus, to efficiently utilize experiential knowledge in the alliance management area, it must be embedded in the routines and processes that firms adopt to deal with partners. It can be proposed that:

H1 a: The alliance management capability of an exporting firm will have a positive relationship to export expansion speed.

H1 b: The alliance management capability of an exporting firm will have a positive relationship to export expansion success.

#### 4.3.1.2 *Marketing planning and implementation capability*

Cavusgil and Zou (1994) identified that an export marketing strategy is the means by which a firm responds to the interplay of internal and external forces to meet the objectives of the export venture. The export marketing strategy broadly includes all aspects of the conventional marketing plan, including product, promotion, pricing and distribution. In their view, the choice of the export marketing strategy is profoundly influenced by the knowledge base of an organization. Specifically, this refers to the capabilities which enable a firm to execute a marketing strategy, such as marketing planning and implementation capability. The relevant skills and knowledge used in the implementation of the marketing strategy are significant to success in foreign markets. Therefore, marketing related skills and prior experience enables a firm to identify specific characteristics of that export market, to develop an appropriate marketing strategy and to execute it effectively.

Several kinds of marketing-related capabilities have been mentioned in literature which enables a firm to execute its marketing strategy. Day (1994b) identifies market-sensing capabilities as the key sources of market competence in market-driven organizations. A market-sensing capability determines how well the firm is equipped to continuously sense changes in its market and to anticipate the responses to marketing actions. The KBV presents similar ideas using the term 'marketing capability' (Weerawardena 2003; Kotabe, Srinivasan and Aulakh 2002). However, the marketing capability phenomenon is a narrow construct and specifically focuses on the ability of the firm to produce a differentiated product and to sustain a brand position. Kotabe et al. (2002) refer to marketing capability as 'the ability of a firm to differentiate products and services from competitors and build successful brands.'

Morgan et al. (2003) however, identify through a survey of 445 companies in China and the UK that the marketing planning and implementation capability of exporting firms is one of the primary mechanisms by which accumulated experiential knowledge can be utilized to better adapt to their market environment. Marketing implementation capability refers to implementing the planned marketing strategy into the foreign market so as to achieve expected targets. To put planning into actions, firms adapt to the existing market, change or upgrade previous tasks not suitable to a given foreign market and allocate resources required for the implementation of the planned strategy. Thus, utilizing accumulated learning in the area of marketing planning and implementation can be positively linked to the development of such capabilities.

Thus it can be proposed:

H 2a: The marketing planning and implementation capability will have a positive relationship to export expansion speed.

H 2b: The marketing planning and implementation capability will have a positive relationship to export expansion success.

#### 4.3.2 *Customer knowledge*

The second component of market knowledge competence that arises through the analysis of the preliminary case study is the knowledge of customer needs, choices, preferences and requirements. This will be referred to as customer knowledge in short. Market orientation studies describe customer orientation as the sufficient understanding of customers in order to create a superior value for them (McAuley 1993; Kohli and Jaworski 1990; Diamantopoulos and Souchon 1999; Narver and Slater 1996; Day and Glazer 1994; Luostarinen 1979; Diamantopoulos 2003). A superior value is created by increasing product-related benefits and decreasing the cost of these benefits to the customers.

The understanding of customer needs entails responsiveness from the firm's side in order to develop certain activities, processes, procedures and marketing strategies to respond to the need. The customer orientation process in that way strengthens the core capabilities of firms when they aim to develop a long-term orientation of their position in the market. With a long-term focus firms constantly discover and implement additional value for their customers and invest in foreign markets. Customer knowledge development is a coordinated and systematic effort by different departments focused on providing an understanding of customers' current and future needs, factors affecting these needs and communication of the needs across inter-firm levels. Furthermore, it means implementing and coordinating activities to meet the customers' needs. The main external sources of customer knowledge acquisition for software development firms are their strategic partnerships with distributors in the foreign market.

By pooling complementary resources and increased bargaining power for joint activity, strategic partnerships enhance the strength of firms operating in foreign markets. Complementary technology partnerships provide the software vendor firms with complementary resources such as knowledge of upcoming technology, user applications and new products. In turn, these firms invest in their own resources to build technological competence. Software development firms utilize vertically integrated indirect export channel partnerships to sell and market prod-

ucts in foreign countries. Partnerships in foreign markets with local firms provide fast access to local market knowledge, as the host country firms have the advantage of greater information of the language, culture, laws and politics of their own countries (Hymer 1976). The aim of partnership development is to gain market access and to build a profitable customer base. Partnership members gain common benefits such as training in new technology and foreign market knowledge acquisition. Mutual dependency on resource utilization and acquisition results in continued cooperation and both parties willingly invest in developing such mutual partnerships (Child 2001). Thus, for software development firms, partnerships in foreign markets are a way of internalizing market knowledge (Buckley and Casson 1976; Hennart 1982; Child and Czegledy 1996) and learning to utilize it for export-related capability development.

#### 4.3.2.1 *Alliance learning capability*

Due to knowledge acquisition needs from the foreign market, partnerships with distributors are of strategic importance for software vendor firms. The purpose of learning is to acquire knowledge and information which can be applied in the production of products and processes of the firm for commercial purposes. From the preliminary case analysis, it was found that the major problems that impacted on the acquisition of market knowledge are related to knowledge acquisition from partners and the management of partner relationships, such as the hiring of a wrong representative/distributor in the foreign market.

Strategic alliances have been considered as providing a platform for organizational learning (Kogut 1988) aimed at mutual learning between partners. However, this is assumed to depend on the organizational mechanisms of knowledge acquisition. Literature concerning organizational mechanisms of knowledge acquisition and mutual learning emphasizes the organizational processes and characteristics of one of the partner firms as main factors influencing mutual learning (Hamel 1991; Kogut 1988; Parkhe 1991; Hennart 1991; Inkpen and Beamish 1997; Lane and Lubatkin 1998). Alliance learning studies also emphasize a firm's ability to transfer knowledge to their partners. Lane and Lubatkin (1998) suggest that the ability of a firm to learn from another depends on its capacity to recognize the value of new knowledge, assimilate it and apply it for commercial purposes. Further, Inkpen (1998) emphasizes that learning is only effective for firms when it is put to use for product development purposes or any other marketing or technical activities. Thus, practical experience is significant while learning.

Further, Inkpen (1998) identifies knowledge connectedness between a partner firm and its alliance; the relatedness of alliance knowledge as conditions that influence a firm's effectiveness at knowledge acquisition and transfer. Several other

scholars (Cohen and Levinthal 1990, Lane and Lubatkin 1998; Lyles and Salk 1996) also signify the importance of knowledge similarity between partners, emphasizing that new knowledge is related to the knowledge that one of the partnering firms already knows and that cognitive values are shared by both firms. Thus, new knowledge developed out of learning from each other is beneficial and can be put to commercial use by either of the firms in the alliance. In sum, when partner firms search for alliance learning based on mutual problems, the resulting learning or newly developed knowledge can be utilized by both of them. In that way, as the cognitive value of the firms matches (Prahalad 1995) due to the similarity of the problem in question, the knowledge development process is smooth.

The concerns mentioned by Lyles and Salk (1996) regarding the matching of the organizational characteristics of the partners in order to acquire knowledge imply a strategic selection and choice of partners. Choice of partner selection in alliance development is one of the difficult phases of the process. There must be a match between the strategic motivation of the partners and the partner selection criteria. Apart from faster market expansion via partners, learning efforts of the partner firm increase when there is significant matching of mutual organizational characteristics and similar needs. However, the partnership motives of partnering firms have widely been found to vary for firms from different countries.

The important factors related to a successful partner choice in software vendor firms have been found as the adaptability, openness and the experience of the partners, human resource practices and the partners' learning capability during the implementation phases of the marketing model. Learning capability of the alliance partner is vital for software development firms. During the implementation process of services, the alliance partner has to deal with customer problems and solve them effectively. The better an alliance partner understands the technology and product features of the software vendor firm, the better it can serve the customers (Wang and Nicholas 2005). Thus, the choice of a partner with learning capability is an important criterion for software development firms.

Trust also plays an important role in the choice of an alliance partner (Cavusgil et al. 2007; Parkhe 1998) and collective learning. The past and future exchange between partners is reported to impact positively on the building of trust between them (Zucker 1986). Such partnerships are usually long-term relational contracts in the export channel and involve commitments to current and future exchange. Parkhe (1998) also identified the similarity of culture-based characteristics as one of the trust building factors positively related to collective learning. Wang and Nicholas (2005) identified that the learning intent and learning ability of partnering firms is related to collective learning. Intent on learning is the propensity to



view collaboration as a learning opportunity (Hamel 1991), impacting on the firm's decision to initiate learning and create new know-how (Inkpen 2000). Learning ability, or absorptive capacity, favours the absorption and application of different types of knowledge (Cohen and Levinthal 1990) acquired from partners in the context of their own firm. A poor absorptive capacity may result in little learning from the partners (Kale, Singh and Perlmutter 2000).

H 3 a: The alliance learning capability of an exporting firm will have a positive relationship to export expansion speed.

H 3 b: The alliance learning capability of an exporting firm will have a positive relationship to export expansion success.

#### 4.3.2.2 *New product development capability*

New product development processes are one of the strategic concerns for market-oriented firms. Market knowledge acquisition and utilization processes of firms have been regarded as crucial inputs to new product development (Day 1994a). Similarly, Nonaka, and Takeuchi (1995) find that effective new product development processes involve continuous information sharing and utilization, and support the idea that the way knowledge is used within a firm is a function of its organizational systems or processes. The information processing systems related to new product development affect new product outcomes which in turn affect export expansion.

From the preliminary empirical analysis of the study, the interaction between firm- and market-level knowledge is related to the development of a knowledge base within the exporting firm. Similarly, the relationship between new product development and market knowledge utilization and integration at the firm level has also been advanced and proposed in studies related to new product innovation. These studies suggested a user-producer interaction and integration of the acquired knowledge within firm-level practices to create superior value-oriented products. The origin of new product innovation research goes back to 1968 with a project conducted through SPRU. The project was based on analyzing process innovation in the chemical industry and product innovations in the scientific instruments sector. Subsequent studies supported the findings of the new product innovation project conducted earlier (Cooper 1983; Cooper and Kleinschmidt 1990; 1993; Nightingale 2000). The major findings of the initial project and the subsequent studies mention three factors: understanding user need, internal cross functional knowledge coordination and technical capabilities as key to innovation. All these three factors have also been emphasized by market orientation studies

and the preliminary case study findings concerning the gaining of market knowledge competence.

In line with market orientation studies, the objective behind understanding customer needs is to ensure the final product matches customer requirements. Von Hippel (1976) also referred to users or customers as sources of innovations. These studies also highlighted the performance differences between firms that integrate functional disciplines and those having a sequential innovation process (Clark and Fujimoto 1991; Nonaka and Takeuchi 1995; Clark 1999). Internal cross functional knowledge coordination is still important for software vendor firms due to the complex nature of the product.

It is assumed in this study that new product development outcomes are affected by the firm- level utilization of the customer knowledge. The customer knowledge is collected from the market. However, it is only utilized and put to use for production purposes within the firm. Thus, a higher value product for customers is an indication of market success. Further, market knowledge is seen to affect new product timeliness (Nonaka 1990; Clark and Fujimoto 1991). This is the extent to which new products are introduced at a time when environmental conditions promote their success. Previous research suggests that three types of market information processes: acquisition, transmission and utilization determine the effective timeliness of new product development. Thus, the efficient utilization of market knowledge for new product development purposes may bring timely products to the market. Information transmission processes would speed up the new product development process, as it shows that needed information has been transferred to the relevant departments. Moreover, the firms have been able to cut down on overlapping between the new product developmental stages and overload of multifunctional teams (Moorman 1995; Clark and Fujimoto 1991; Nonaka 1990).

Further, market knowledge is also seen as affecting new product creativity. New product creativity is the degree to which a new product is novel and to which its introduction changes marketing thinking and practice (Moorman 1995; Wilton and Myers 1986; Zaltman, Heffring, and LeMasters 1983). For product creativity, organizations rely on information about customers' current and future product requirements and needs, and new product development personnel stay up-to-date with new advances in the industry.

Cavusgil and Li (1999) describe the relationship between new product development and market knowledge through marketing-R&D interface. Marketing-R&D interface refers to the process in which marketing and R&D functions communicate and cooperate in new product development for export markets. Cavusgil and

Li (1999) also acknowledge that close interfacing improves the prospects of new product acceptance in a foreign market. However, in their opinion a lack of integration increases the degree of mismatch between customer needs and the product that firms develop.

The other idea behind close marketing-R&D interface is assumed to enable a firm to see through its own capabilities of new product development, such as technological capability, more than the competition is able to. Other authors present a very similar notion emphasizing that market knowledge and its utilization positively affect new product advantage (Song and Dyer 1995; Souder 1988). From the above it can be proposed:

H4 a: The new product development capability of an exporting firm will have a positive relationship to export expansion speed.

H4 b: The new product development capability of an exporting firm will have a positive relationship to export expansion success.

In sum, the primary role of the knowledge of the customer needs in firms is considered to be the fostering of innovation (Weerawardena 2003). Studies rooted in market orientation and innovation view new product development activity as the key to targeting new customers with superior products and services. For new product development purposes, mobilizing firm-level resources to integrate market knowledge within the value creating activities of the firm is emphasized. Thus, new product development is seen to be utilized as a mechanism to implement the knowledge of the customer needs accumulated from the market.

#### 4.4 Contextual factors to market knowledge acquisition

Due to the fact that customer knowledge exists at various levels, it is clear that its acquisition is a complex task for software vendor firms. Thus, a well-coordinated effort is needed by firms to acquire market knowledge (experiential as well as customer knowledge). Furthermore, it is vital that the knowledge is transferred within the departments of the organization so it can be transformed into a commercial package for the customers. Even though interaction between market knowledge and the organizational processes of knowledge acquisition and internalization facilitates the generation of new knowledge and its subsequent accumulation in the firm, for the successful transfer of foreign market knowledge to the organization, the influence of contextual factors should not be ignored. In the next section, for further analysis only the contextual factors identified from the pre-

liminary case study research will be focused on. The entrepreneurial orientation of the firm is identified as one of these contextual factors, with a specific focus on the top management's strategic orientation towards expanding to foreign countries. The other contextual factors contributing towards market knowledge competence development are the organizational barriers to market knowledge transfer mechanisms. Both of these factors are discussed in detail in the following section.

#### *4.4.1 Entrepreneurial orientation*

The relationship between entrepreneurial vision and internationalization is a long established (Etemad 2004) but relatively unexplored area in the field of international business literature. This section does not explore international entrepreneurship per se, but rather investigates the implications of entrepreneurial orientation in market knowledge competence. For this purpose, entrepreneurial orientation is seen in a variety of contexts: the orientation of the firm's top management team and employees towards expanding exports, the building of a knowledge sharing environment and the learning orientation of the firm. Within the context of this study and the knowledge-based view of the firm, international orientation is approached through linking the managerial ability to utilize resources effectively and efficiently for the purposes of export expansion. More specifically, entrepreneurial orientation focuses on the efforts the top management team of a small- and medium-sized firm put on creating a proactive strategy to search for foreign market knowledge, on setting up an open and decentralized organizational environment and on the sharing of key knowledge.

The knowledge-based view explains a firm's success from the viewpoint of its ownership of difficult-to-imitate resource combinations (Wernerfelt 1984; Barney 1991). Resources are assets which enable a firm to conceive and implement strategies to improve competitive positions. Because the knowledge and learning of members of the top management team is individual and specific and which cannot be transferred unless an individual moves to another company, the top management can be said to represent a strategic managerial resource for a firm. The experience, strategic vision and the behaviour of the managerial resource have been mentioned as crucial to international success (Oviatt and McDougall 1994).

The analysis of the case studies reveals information concerning the distinctive tasks of top management and export managers in software vendor firms. Collectively, top management and export manager roles are found to be related to an active search for international opportunities to sell the product and to organize knowledge of the market within the firm. While the top management's efforts relate to providing the conditions for this active search and the free flow of infor-

mation within the firm, the export managers act as the front-line personnel who explore international opportunities. In the case of smaller- and medium-sized firms, the smaller the firm is the more the role of top managers and front-line export managers tends to overlap. For SMEs from the high technology sector, when the external environment is constantly changing, the commitment of resources to the market is impossible without creating internal resources; top and front-line managers must have a common vision in creating resources for the market. Thus, the roles of top management and front-line export managers seem to converge here as well.

The above-mentioned overlap can also be explained by the phenomenon of 'organizing for knowledge', as both top and front-line managers act to organize the knowledge of the external and internal markets, particularly relevant to those activities which require managerial orientation and input. These arguments also coincide with one of the main themes in entrepreneurship studies, which concentrate on why, when and how opportunities for the creation of goods and services come into existence. Shane and Venkataraman (2000) mention entrepreneurial opportunities as those situations in which new goods, services, raw materials and organizing methods can be introduced and sold at a greater cost than the cost of producing them. It is clear that the top management's vision to support an open environment in the firm and to transfer and share knowledge is one factor which facilitates front-line export managers to perform the necessary activities to introduce and sell products and to develop procedural knowledge related to exports within the firm.

Organizing knowledge from various sources has been stressed as critical in the search for international opportunities (Shane 2000). Knowledge related to the foreign market and customers is organized from external sources such as local partners and disseminated within the organization. Shane (2000) argues that a flow of information from these external sources to within the firm creates symmetries between external and internal information. This information symmetry is further linked to increased opportunity identification by managers. For example, if technical (R&D) and market planning teams do not share a common vision, the matching of internal and external knowledge may not take place. In a similar vein, Cohendet, Llerena and Marengo (2000:107) also support the idea that this entrepreneurial function is a source of competitive advantage for firms, as entrepreneurs create an external environment by developing certain business relationships. Moreover, they build an internal configuration of the firm-specific resources that meet the requirements of the external environment. Thus, through an entrepreneurial function, entrepreneurs create a link between the external and the

internal environments. To internalize the external information, firms sometimes need to experiment with new products and upgrade internal routines.

Morgan et al. (2003) state that firms belonging to a turbulent and dynamic environment must pursue a persistent change in behaviour, and learn to deal with information acquisition, dissemination and transfer processes in order to sustain improved performance. Jaworski and Kohli (1993) have also identified that a positive attitude, meaning the willingness of individual persons to change and innovate, is a key to organizational adaptability in the face of a turbulent environment.

Further, vision regarding the growth of business in foreign markets is purely an entrepreneurial input. The crucial role of the entrepreneur is to develop and diffuse a specific vision of the firm's context and future (Cohendet et al. 2000:108). This is because to recognize strategic resources and knowledge such as specific capabilities to exploit international opportunities and matching them with the external and internal environments demands entrepreneurial input. A specific vision is important, as it develops a set of beliefs in the firm which guides resource commitments in international markets when opportunities arise. In accordance with this vision, an entrepreneur will strive to develop the position of the firm, adjusting its strategy in the internal as well as external environments. Entrepreneurial vision has also been linked to change in strategies, or strategic renewal, when new resources are created or acquired during the matching process (Dess and Lumpkin 2005). Further, entrepreneurial vision has also been linked to a 'shared belief' in the organization that facilitates managerial efforts to introduce or change routines /processes. Creating a shared pool of common knowledge may resolve conflicting opinions in organizations by influencing beliefs. This appeared in the preliminary case study when a product development routine was changed and the SVP faced problems in convincing the product development team of its positive effects.

In sum, entrepreneurial orientation can be approached from the viewpoint of the creation of an environment that fosters the implementation of entrepreneurial strategies. Entrepreneurial vision diffuses throughout the firm and collective commitment from employees arises. For technological firms, a clear vision to coordinate resources and direct strategies in the face of a rapidly changing environment is a key to the synthesis of external and internal information and knowledge. Thus, it can be proposed:

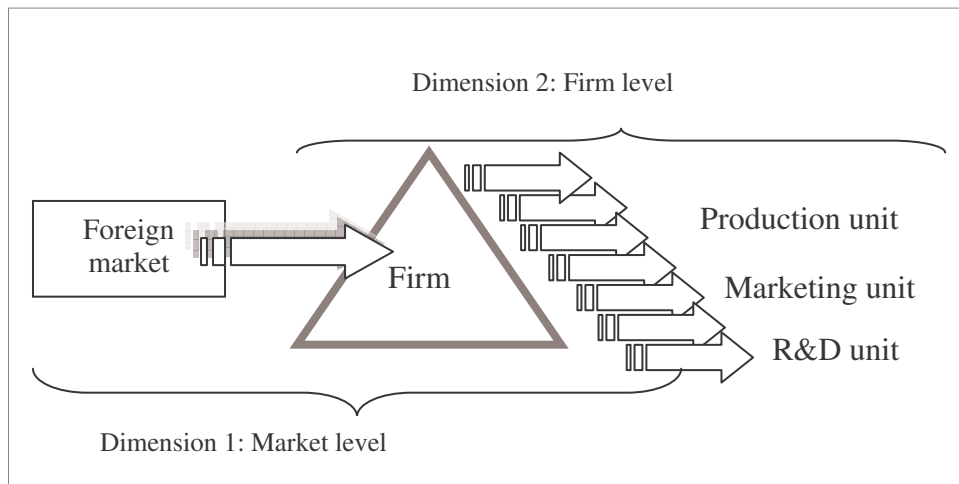
H5: The entrepreneurial orientation of an exporting firm will have a positive relationship to export expansion capabilities.

In the statistical analysis, this relationship will be tested for all four kinds of export expansion capabilities.

#### 4.4.2 Barriers to market knowledge acquisition

Knowledge transfer barriers have been approached in literature from different viewpoints; some are based on the characteristics of the knowledge to be transferred (Kogut and Zander 1993) and others from the viewpoint of the characteristics of the situation or the context from which knowledge is being transferred. Communication aspects and the nature of interpersonal relationships have also been reported as influencing effective knowledge transfer between parties (Szulanski 1996; Sullivan and Bauerschmidt 1990).

In this study, barriers to foreign market knowledge transfer to the organization have been conceptualized on the basis of situational context and ‘knowledge transfer’ denotes the holistic process of knowledge acquisition and internalization. This is due to the fact that the knowledge is originally located in a different setting from where it must be transferred to the organization so that it can be transferred into commercial use. Barriers to knowledge acquisition at the market level refer to the constraints that hinder or prohibit a foreign firm’s ability to acquire local market knowledge, thereby influencing its ability to initiate, expand or sustain export marketing operations. Knowledge transfer is seen to occur in two dimensions. This is shown in Figure 12.



**Figure 12.** The context of knowledge acquisition in the study.

The first is the transfer of foreign market knowledge from external parties such as local partners to the foreign firm, and the second is the dissemination of this knowledge within its marketing, R&D and production departments. Both of the



dimensions are assumed to complement each other for effective knowledge transfer.

Several scholars claim that all resource transfers are 'sticky' or inert, as the complexity, codifiability and tacitness of knowledge itself create barriers to knowledge transfer (Kogut and Zander 1992, Szulanski 1996, Foss, Knudsen and Montgomery 1995). The knowledge evolution cycle (Zollo and Winter 2002) also assumes that the ability of a firm to create new knowledge varies, as all firms differ on the degree to which the knowledge is articulated and codified.

Knowledge is disseminated through the social interaction of individuals, where shared mental models and communities of interaction allow individual know-how to be transformed into organizational knowledge (Kogut and Zander 1992, Nonaka 1994). The acquisition and utilization of knowledge requires firms to implement managerial processes to transfer and receive knowledge (Teece et al. 1997; Eisenhardt and Martin 2000). The utilization of knowledge depends on the user firm's capabilities; specifically the integration and coordination of routines, which allow the user firm to reconfigure, reintegrate and transform its resources into new competencies and competitive advantages (Teece et al. 1997). Thus, if the user firm's knowledge creation mechanisms are not developed, it will face problems in foreign market knowledge competence development and the speed and success of export operations may be affected.

Knowledge without the right organizational mechanisms to transfer it into productive use is relatively worthless for firms (Grant 1996a). To achieve competence in market knowledge, its transference must occur in both dimensions; from local market to foreign firm and from foreign firm to its departments. In this process the foreign firm has the central role in transferring knowledge from the market to other units within itself. Because knowledge acquired from the external environment must be utilized within the firm in order for it to be transformed into commercial use, firm-level knowledge coordination mechanisms are considered important in acquiring market information and disseminating it throughout the organization. However, some significant barriers to knowledge acquisitions at the market level need to be discussed.

In general, market-level barriers are numerous in number and may differ from market to market. With this in mind, it is beyond the scope of this study to list them all down. However, as the study is limited to the software vendor industry, importance is placed on those market-level barriers which have appeared in the preliminary empirical analysis.

Specific obstacles that may influence the transfer of knowledge from the foreign market to the organization have been listed as conflicts in strategic partnership relationships, the mismatch of expectations and required performance from distributors and value added suppliers (Kauser and Shaw 2004), a lack of knowledge of the local language, insufficient knowledge of local market opportunities and a lack of foreign market connections (Howard and Herremans 1988).

Organizational memory has also been discussed as a firm level barrier to knowledge transfer (Levitt and March 1988; Sinkula 1994). Organizational memory is path-dependant and has a long life time. It is only due to organizational memory that an individual's learning is retained in the firm in case of personnel turnover and the passage of time. Market knowledge is codified or recorded in information systems, operating procedures, white papers, mission statements, organizational stories or routines. For new activities, previous knowledge and learning is used. However, the extent to which these memories are used and are useful may determine how long they are retained within the firm.

In some instances, organizational memory may constrain new learning, in which case traditional capabilities of a firm become its core rigidity (Leonard-Barton 1992; Levitt and March 1988). The firm is unwilling or unable to reject the capability in which it has invested so heavily in the past. New procedures or capabilities might turn out to be more effective than the older ones, but still the firm is rigid in adopting them. In such situations, market-driven firms promote unlearning (Schein 1996) and motivate their personnel to take risks.

In the case of software vendor firms where some projects are temporary or carried out on short-term contracts, organizational memory plays an important role in retrieving past knowledge and utilizing it timely. Such behavioural flexibility carries importance as such firms can quickly reconfigure processes and reallocate resources to focus on the emergent opportunity or threat.

It has been mentioned that meaningful learning only occurs when there is behavioural change in firms (Sinkula 1994; Slater and Narver 1995). However, in the case where new knowledge confirms managerial perceptions or what was already suspected, behaviour can be pursued even more confidently (Menon and Varadarajan 1992; Slater and Narver 1995). However, several other studies confirm that in the long term behavioural change is an essential link between learning, knowledge creation and performance improvement (Fiol and Lyles 1985; Lane and Lubatkin 1998).

In short, it can be said that following a market entry, the structural and behavioural adaptability of a firm can be linked to foreign market knowledge acquisi-

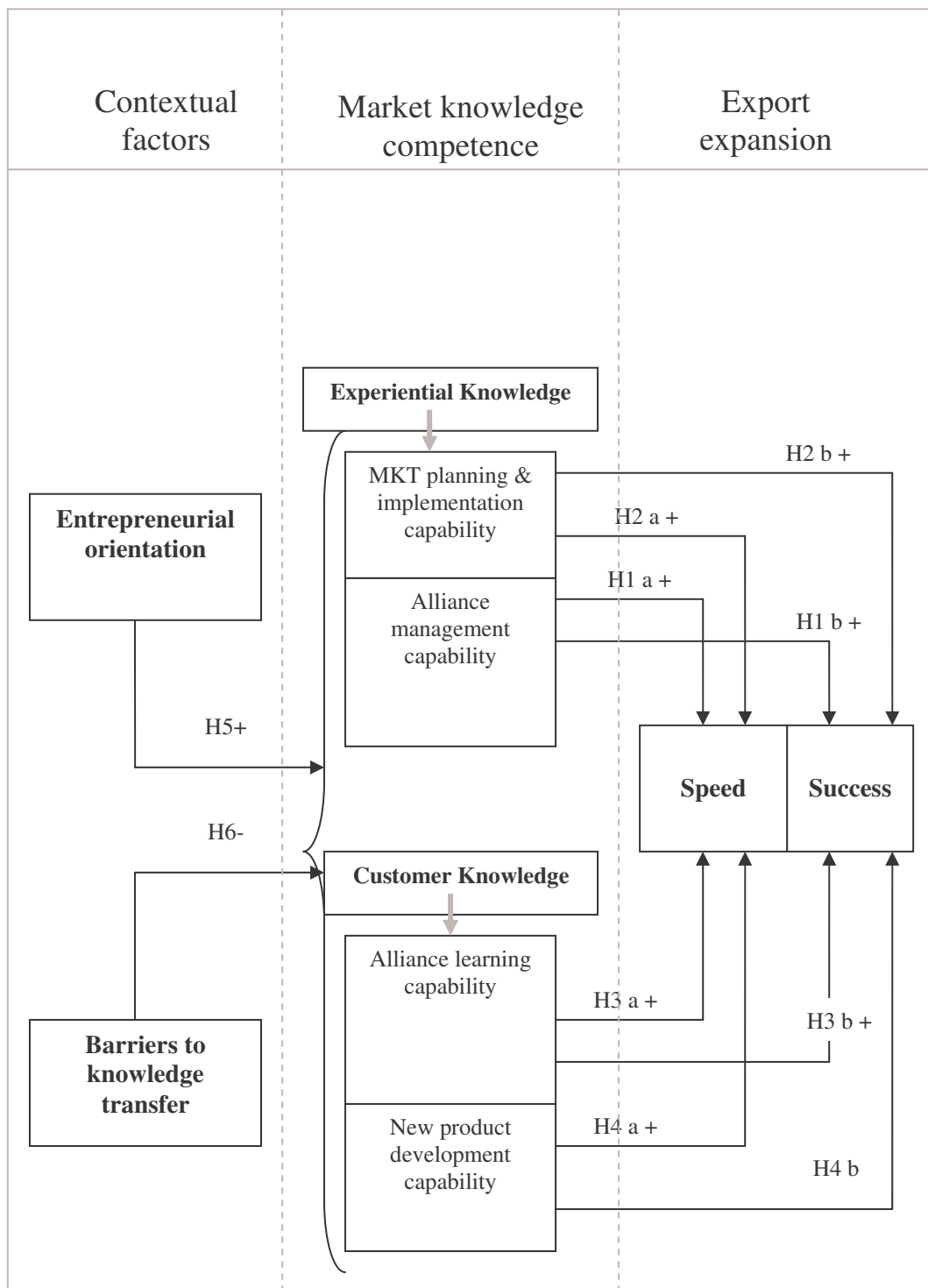
tion and also that this relationship is likely to affect export expansion in a foreign market. From this it can be advanced that:

H6: Barriers to market knowledge acquisition will have a negative relationship to export expansion capabilities.

## 4.5 Summary

The discussion in this chapter mainly focused on relating market knowledge acquisition and utilization in firms developing an export-related capability. The preliminary case study findings were expanded by investigating existing literature. The central theme of the arguments in this chapter emphasized and linked knowledge acquisition and its utilization for the purpose of specific export expansion capabilities. Both of these phenomena cannot be adequately explained separately, as they are interdependent and coexist in a firm. This interdependence may increase the complexity of the whole process. Such complexity may also influence the speed and success of export expansion. Knowledge acquisition was considered significant for the international generation of knowledge from market to market. The utilization of knowledge, on the other hand, was seen to be significantly positive in the ability to use it for specific markets.

The hypothetical relationship between the variables is shown in Figure 13. The chapter started by establishing market knowledge as a competence of a firm. Two of the components of market knowledge competence were emphasized: experiential knowledge and the customer knowledge. Then, both components of market knowledge competence were linked to export expansion capabilities by developing hypotheses between the relationships. The contextual factors contributing towards market knowledge acquisition and its dissemination in the firm were seen as facilitators and barriers to knowledge transfer from the market to the firm. Entrepreneurial orientation was seen as a facilitator, whereas behavioural and procedural barriers to market knowledge acquisition and internalization were seen as hindering factors. At the end, through the mediating role of these capabilities, market knowledge competence was linked to the dependent variable.



**Figure 13.** The hypothesized model of the study.

## 5 RESEARCH METHODOLOGY

### 5.1 Research design

In the main empirical part, this study employs a survey-based research methodology. Creswell (2003:14) suggests employing a quantitative approach in order to generalize key findings of a sample to a larger population. Following Creswell, the reason for employing a survey-based research design was to generalize key components and export expansion capabilities. This chapter describes the research design for the main empirical part of the study.

Due to the nature of the research problem and the hypotheses a mixed methodology research design was employed. The literature review revealed that the construct of market knowledge competence implied multiple meanings for firms from different industries. Thus to generate a consensus of its meaning for firms from the information communication technology industry, a preliminary qualitative study was conducted prior to proceeding with the quantitative data collection. The main aim of the preliminary qualitative study was to investigate the theoretical construct for developing a theory for foreign market knowledge competence. The preliminary findings of the qualitative study and insights from the literature review were used to develop the hypotheses and the instrument for the main empirical part of the study. The managers' statements (mentioned in italics in Chapter 3) were utilized to find the relevant measurement items in instrument development.

The chapter starts with a discussion of the research design of the main empirical part of the study in Section 5.1. The research design includes a discussion of a sample, data collection methodology and instrument development. Then, in Section 5.2 the partial least squares (PLS) approach to structural equation modelling is discussed. This is followed by a discussion of the measures of the independent variable and the dependent variable constructs and their operationalization in Section 5.3 and 5.4 respectively. In the end a discussion of the measure validation is presented in the Section 5.5.

#### 5.1.1 *Sample and data collection*

This study utilized the random sampling technique for the sample selection. The target population of the study consisted of software development firms from the ICT industry which sold software solutions in foreign countries. The firms were mainly from Scandinavia, Asia Pacific and a relatively smaller number from the

USA and the UK also participated. Initially, a contact list of 500 companies was drawn-up from internet searches and online yellow pages. The target respondents were international sales and marketing managers of companies whose contact information was collected from firm homepages. For some cases, when information was not readily available in the English language, further investigation into the background of the firms and a general inquiry about the firms' stages of internationalisation was carried out through email exchanges with the respective managers. Eventually, the number of usable contact-firms was reduced to 300. The following criterion was used for the selection of the firms:

- Having a minimum of two years' experience of sales to foreign customers
- Having partnerships with resellers and/or some foreign technology partnerships with firms such as IBM, Microsoft, SAP or Oracle
- Having an international product developed by the firm

In May 2006, prior to sending a detailed questionnaire, a preliminary email describing the purpose of the survey was sent, which was designed to inform the firms about the study and to request their participation in it. Unfortunately, only a few positive answers were received. In June 2006, the detailed questionnaire was emailed to all 300 companies through a research software programme. This provided the advantage of sending a large number of collective emails and also supplied each respondent with a personal survey answering page. Respondents could visit the survey web page as many times as they wished and answer at their convenience. The software saved the answers automatically. In the first attempt only 8 answers were received out of 300. Two weeks later three more answers were generated after a reminder email had been sent. A process of sending reminder emails and retrieving 2 or 3 completed questionnaires continued until 25 answers had been collected. However, due to the slow response rate, it was decided to change the strategy for retrieving answers. Thus, direct contacts to the respondents were made through phone calls. It was suggested to the respondents that they fill in a few answers at a time and then return later to fill in more answers when they had free time. With this strategy a continuous stream of answers was received. With reminder phone calls and further emails a sample of 100 firms was finally retrieved, making an approximate 33% response rate for the sample of 300 firms.

### 5.1.2 *Instrument development*

On the basis of theory-in-use and the main constructs of the theoretical framework subjective state measures were developed into a questionnaire. The main parts were divided into: 1) background information 2) entrepreneurial orientation 3) the product development capability 4) the marketing planning and implementation capability 5) the alliance learning and management capability 6) the barriers to market knowledge 7) the satisfaction (success) of the managers with export expansion and 8) the speed of export expansion. The questions were prioritized in such a way that the most important and shorter ones were at the beginning of the questionnaire, while questions concerning company and background information were at the end. The web page of the questionnaire contained an introduction cover letter with instructions on how to fill it in and information about the background of the study. To familiarise the respondents with the subject matter preliminary details of the topic were given in the cover letter.

All the questions had been developed as multi-items options. Multi-items were used in order to increase the correlations between the attribute being measured, to attain a fine differentiation among the respondents and to achieve reliable scores.

#### **Description of scale**

By using the method of equal-appearing intervals, all the subjective state measuring questions were based on a 7-point Likert scale. This range was chosen so as to provide the respondents with a greater spread of possible answers. Verbal labels representing subjective states from 1 to 7 intervals were used. For example, in a scale ranging from agreement to disagreement of a subject, verbal labels such as 'strongly disagree' and 'strongly agree' were used.

#### **Pretesting**

To find out whether the respondents of the questionnaire understood the questions as presented, pre-testing was carried-out with academicians and practitioners. Two professors studied the questionnaire and then provided feedback. Face-to-face meetings with one manager from each of the companies involved in the preliminary empirical study were then held to pre-test the questionnaire. During the pre-testing procedure each respondent's comments were recorded. Their understanding of a question was matched with the researcher's intended meaning. When the correct understanding had been achieved and the question had been answered, the respondent then proceeded to the next question. Sometimes the researcher's intended meaning of a question did not match the respondent's un-



derstanding; in which case such questions were modified. These questions were further re-tested through email exchanges with the relevant managers.

## 5.2 The PLS approach to structural equation modelling

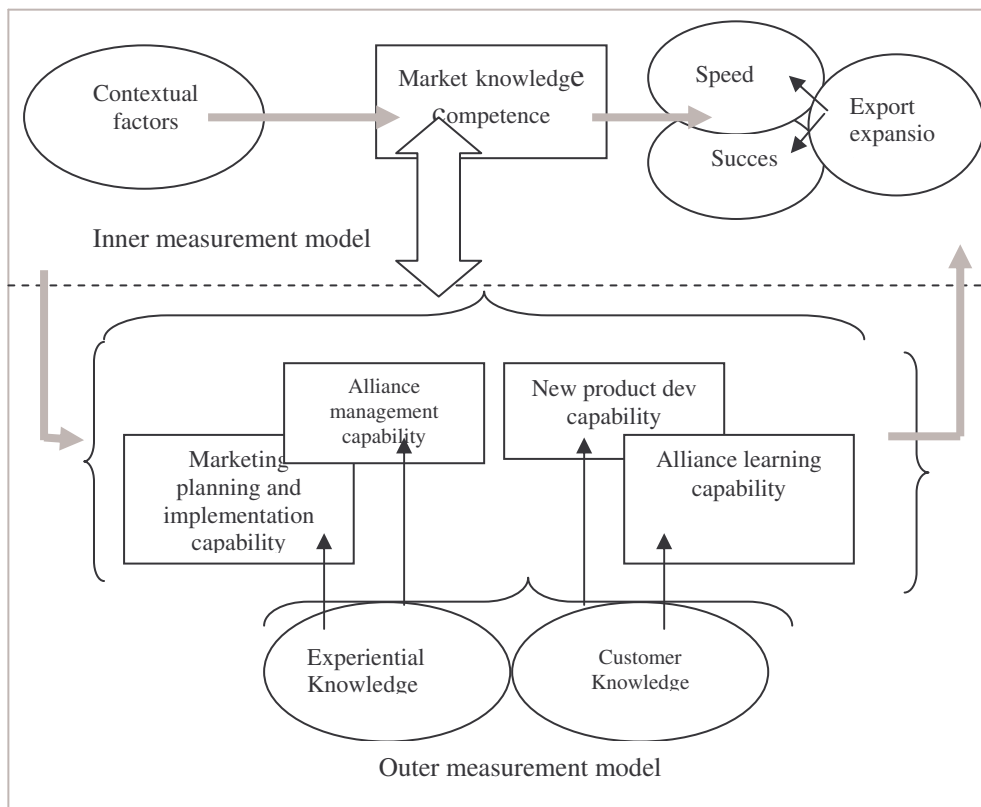
In this study, the structural equation modelling (SEM) method has been applied for the purpose of statistical analysis. SEM allows the simultaneous modelling of relationships among multiple independent and dependent constructs and differentiates between dependent and independent variables such as the endogenous and exogenous latent variables. The exogenous latent variables are not explained by the postulated model (acting as the independent variables) whereas the endogenous variables are explained by the relationships contained in the model (Haenlein and Kaplan 2004). Thus, SEM is particularly suitable for measuring and estimating a theoretical model with linear relations between variables, which may be either observable or directly unobservable and may only be measured imperfectly. SEM enables an explicit modelling for the measurement error for the observable variables and avoids potential bias, thus allowing constructing unobservable variables which can be measured by indicators.

Two approaches have been suggested in literature for estimating the parameters for SEM; covariance-based and the variance- or component-based approach. The covariance-based approach minimizes the difference between the sample covariances and those predicted by the theoretical model, whereas the variance-based approach minimizes the variance of the dependent variables explained by the independent variables. As Chin (1998:295) mentions, 'to many social science researchers, the covariance-based procedure is tautologically synonymous with the term SEM'. However, an alternative method for estimating parameters of SEM in the variance-based approach is partial least squares (PLS). The variance-based PLS approach has been applied in this study.

The trade-off between covariance- and variance-based SEM is guided by the research objectives, the epistemic view of data to theory and the properties of data at hand. This study utilizes PLS variance-based SEM due to the small sample size (the number of observations is slightly higher than the number of variables) and the epistemic view of data to theory. First, none of the independent and dependent variables are absolutely measurable. Further, rather than aiming for producing the covariance matrix as close as possible to the theoretical model, the aim has been set as analyzing the degree or level of speed and the success of export expansion. In such a situation the variance-based PLS approach seems suitable.

In the PLS approach, the theoretical model is shown in the form of a path diagram which is a graphical representation of how the various elements of the model relate to one another. Similar to a complete covariance-based structural model, a PLS model is also composed of two parts: the outer (measurement) and inner (structural) models. The outer model describes how each latent variable is measured by corresponding observed indicator variables. This part of the model provides information on the validities and reliabilities of the observed indicators. The inner model describes the relations between the latent variables (independent and dependent) themselves and indicates the degree of variance (Diamantopoulos and Siguaw 2000:4).

The structural and measurement models of the theoretical framework are shown in Figure 14. The third component of the PLS model however, is the weight relations, which are used to estimate case values for the latent variables.



**Figure 14.** The structural and measurement models of the theoretical framework.

Sample size requirements for PLS: The PLS technique uses simple or multiple regression depending on the mode of each block of indicators and the inner weighting schemes block for the sample size consideration. Only the part of the model that requires the largest multiple regression (arrow schemes linking to various other blocks) is important. Furthermore, the number of variables associated with the latent variables in this part must be considered for sample size requirement. In another case, the block with the largest measurement equations or the dependent latent variable with the largest number of independent latent variables impacting on it could also serve as a guide for the sample size selection (Chin 1998:311). Using the regression analysis-related rule of thumb, a minimum of 5 or a maximum of 10 cases per indicator should suffice. In the theoretical framework of the study, the outer measurement model contains the largest number of measurement equations. The total number of indicators for the outer measurement block of the framework is 50 in the case of this study. Thus, a sample size of 250 would suffice for 100 % of the sample size requirement. A total of 100 usable samples constitute 40 % of the required sample size of 250 in this study. However, the PLS method allows flexibility in achieving good results for a smaller sample size as low as 50 (Chin and Newsted 1999).

### 5.2.1 *Description of PLS path modelling algorithm*

The PLS modelling lacks a global goodness-of-fit measure. For that reason a rigorous method of testing the reliability and the validity for the outer and inner models is considered important in this technique. Chin (1998) suggests a systematic two-step process to assess partial mode structures. In the first step, the assessment of the outer models reveals the measurement reliability and validity associated with their particular formative or reflective modes of the model. If the latent variable scores indicate sufficient reliability and validity, the assessment of the inner path models is followed as a second step.

The basic algorithm of PLS modelling calculates the estimated values for each latent variable in the data set by estimating the unobservable variables as exact linear combinations of their indicators. Similar to a principal component analysis, weights are assigned to each case value in a way that the result captures most of the variance of the independent latent variables, which may predict the dependent variable. Then, weights approximation is determined for the inner model by calculating a weighted average of indicators for each unobservable variable. Afterwards, a simple ordinary linear squares regression is followed up. The process of inside-outside approximation is repeated until convergence of the case values is achieved. In sum, first a weight relation for the outer and inner models is esti-

mated, and then this is followed by an ordinary linear squares regression to determine the parameters of the structural relations (Haenlein and Kaplan 2004; Fornell and Bookstein 1982).

The model evaluation for PLS involves prediction-oriented significance testing. For estimating the stability of estimates, the individual item loadings assessment and the composite reliability measurement, jackknifing and bootstrapping measures are employed. For model prediction purposes, the Stone-Geisser test for predictive relevance and Fornell and Larcker's average variance extracted (AVE) measures are used. Below a short description of each of these measures is given.

In order to assess the measurement models, the individual item indicator loading is considered first. To assess the internal consistency for a given block of indicators the composite reliability  $\rho_c$  is measured by utilizing the standardized regression weights for indicators and latent variables. The acceptable value of the individual items loadings with their latent variable has been suggested as 0.5 at the early stages of scale development and as 0.7 or greater (Chin 1998:325) for developed theory. The acceptable value of 0.5 suggests that a latent variable may explain on average half of the variance of its indicators.

To assess the convergent validity of the reflective block the average variance extracted (AVE) is applied. The AVE is the amount of variance that is captured by the construct in relation to the amount of variance due to the measurement error. Next, to assess the discriminant validity of the measures, the Fornell-Larcker criterion of the square root of AVE for each latent variable and the cross loading is applied. The AVE signifies that a latent variable shares more variance with its own indicators than with any other latent variable. Thus, the AVE of each latent variable should be greater than the highest squared correlation with any other latent variable. However, it has been acknowledged in literature that clear guidelines as to how much larger the squared correlation should be are not provided. Chin (1998) suggests taking the square root of the AVE for each latent variable to assess the discriminant validity of the reflective latent variables.

Another measure to assess the discriminant validity at the indicator level is by the cross loadings for the reflective mode. Here, the loadings of each indicator should be greater than all of its cross loadings in other latent variables. Thus, the correlations between latent variable component scores and other indicators besides its own block are calculated. If an indicator loads higher on another latent variable, it shows that the indicator shares more variance with that latent variable. In such situations, it is recommended that the indicator should be removed.

### 5.2.2 Assessment of the structural model

The inner structural model specifies the relationships among the exogenous and endogenous latent constructs. In the assessment of the inner model, the coefficient of determination  $R^2$  of each latent endogenous variable is looked at first.  $R^2$  of 0.67, 0.33 and 0.19 have been mentioned as substantial, moderate and weak respectively (Chin 1998). Moderate value applies when in an inner path model, a latent endogenous variable is explained by few (one or two) latent exogenous variables. On the other hand, when a latent endogenous variable relies on several latent exogenous variables,  $R^2$  should indicate a substantial value. For further evaluation, the total effect or sum of all the direct and indirect effects of a particular latent variable on another are recommended as the next step. Chin (1998:316) also recommends exploring the change in  $R^2$  by calculating the effect size  $f^2$  to see the impact of a particular independent latent variable on a dependent latent variable.  $f^2$  of .02, .15 and .35 represent small, medium and large effects respectively at the structural level.

Next, another criterion for the assessment of the predictive relevance of the structural model, the Stone-Geisser criterion,  $Q^2$  is applied. Depending on the form of prediction, different forms of  $Q^2$  can be obtained. If the prediction of the data points is made by the underlying latent variable score, a cross-validated communality is obtained. On the other hand, when the latent variables from the block in question are used for prediction, a cross-validated redundancy  $Q^2$  is obtained.  $Q^2$  represents a measure of validating the predictive relevance of the model for parameter estimates.  $Q^2$  greater than 0 indicates predictive relevance, whereas  $Q^2$  less than 0 represents a lack of predictive relevance of the model for parameter estimates. Similar to  $f^2$  the values of  $Q^2$  are .02, .15 and .35 for small, medium and large effects.

To analyze the acceptance or rejection of hypotheses in partial least squares, bootstrapping is the standard recommended procedure to generate standard errors and t-values. In this study, the size for the number of samples for a bootstrapping run was set to 200 and the degrees of freedom as N-1. For a 90 % significance level, t-statistics values above 1.96 % indicated a significant threshold. To assess the acceptance or rejection of an individual hypothesis the probability of the t-values for each structural relationship are compared to the standard probability values. Further, the values and signs on the individual beta path coefficients of the inner, structural model are assessed for hypothesis significance of the theoretically assumed relationships between latent variables. Insignificant path coeffi-

cients or an algebraic sign contrary to the a-priori hypotheses from the theoretical model are considered as rejected. Chin (1998) recommends that standardized path coefficients should be 0.2 in order to be significant.

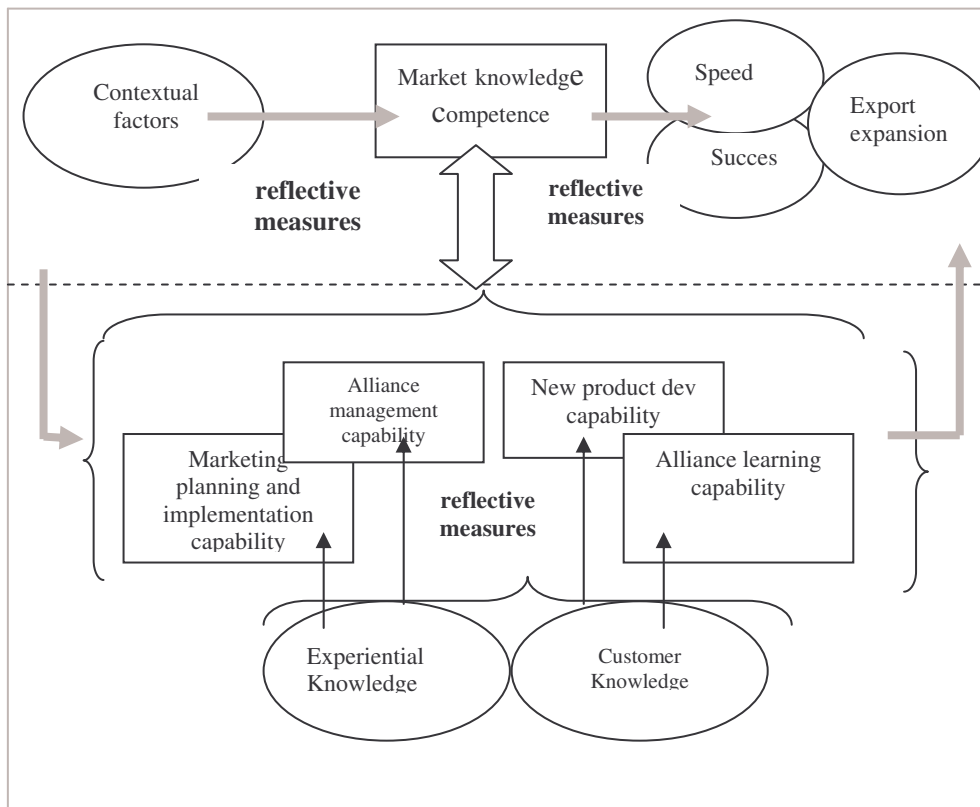
### 5.3 Operationalization of variables

As the constructs of the study are subjective and behavioural-based, mainly relative indicators were used to develop the measures. Mostly multi-item indicators are constructed from previous studies. However, the constructs are subjective phenomenon relative to firms from the ICT industry and observations from the preliminary case study analysis are also combined for multi-item scale development. The multi-items from previous studies and the preliminary case study analysis were supported and reflected in different aspects of the underlying construct.

Related to the operationalization of constructs of the theoretical framework, three main constructs are discussed here. The first relates to the main independent variable construct - market knowledge competence – which is composed of two sub constructs: experiential knowledge and the customer knowledge.

The sub constructs of market knowledge competence are further divided into export expansion capabilities. Secondly, the entrepreneurial orientation and the barriers to market knowledge acquisition are also mentioned collectively as contextual factors. Finally, the dependent variable construct of export expansion is analyzed in two dimensions – its speed and success.

The measures of the main construct of the study were developed mainly as reflective indicators. The choice of the formative or reflective items depends on the causal priority between the indicators and the construct (Diamantopoulos and Winklhofer 2001). The indicators are also split into two groups: reflective and formative indicators. The reflective indicators depend on the latent variable and the formative indicators cause the formation of or changes in an unobservable variable (Haenlein and Kaplan 2004). The part of the model consisting of either of these kinds of indicators can also be termed as the reflective/formative block or mode. The causal priority between constructs was specified in two directions, as shown in Figure 15.



**Figure 15.** Use of reflective measures in the constructs of the study.

Studies in the field of international marketing do not necessarily differentiate between the use of formative and reflective measures. It is considered important for this study, specifically in the outer measurement part of the theoretical framework to differentiate between them. Further, the choice of the formative or reflective indicators also guides the selection of the statistical tool for measuring the relationship. As Bagozzi (1994:332) described ‘when a latent variable is defined as a linear sum of a set of measurements or when a set of measurements of a dependent variables is determined by a linear combination of measures of independent variables, the measures are termed formative indicators: the measures produce the constructs so to speak’. Reflective measures are, on the other hand, invoked in an attempt to account for observed variances (Diamantopoulos and Winklhofer 2001; Jarvis, Mackenzie and Podsakoff 2003).

Here, the use of reflective multi-item measures for the measurement part of the theoretical model is discussed. From the review of the literature, it is assumed that the causal priority between the main independent variable construct of market



knowledge competence and its sub-constructs of export expansion related-capabilities could account for observed variance in the main independent variable. Following the direction of causality, the constructs of experiential knowledge and the customer knowledge supposedly caused a range of export expansion capabilities. This implies that experiential knowledge was assessed as a composite measure of the alliance management capability items plus the marketing implementation and planning capability items. Similarly, customer knowledge was gauged by a composite measure of the new product development capability items plus the alliance learning capability items. Due to the fact that constructs such as experiential knowledge and the customer knowledge gave rise to export expansion capabilities, reflective multi-items were used to measure them.

The treatment of reflective multi-items in the main independent construct of the study might face a theoretical dilemma with regard to the resource- and the knowledge-based views. A lack of clarity in literature as to whether the knowledge bases or resources of a firm can be viewed as underlying factors (causes) or as a measure (causing) of the capabilities of a firm exists in literature. Therefore, causal ambiguity between knowledge bases/resources and capabilities is apparent. Further, tautological issues regarding the definition of these concepts are commonly mentioned in literature. Tautological issues appear when the assumed relationships fail to clearly describe the distinction between the latent and dependent variables. Moreover, the alignment between the construct and its measurement is fuzzy. Priem and Butler (2001b) refer to Barney (1991), who says that at the definitional levels all strategic management theories are tautological. However, if the definitions of the main constructs of the theory are unclear, then testable empirical assumptions become difficult to predict as the tautological relationship may lack empirical content. For that reason, it was assumed that both modes of knowledge consequently produce export expansion capabilities. This assumption will be tested through statistical analysis. It must be noted here that the PLS approach uses different statistical methodology to test the reliability and validity of the reflective and formative measures.

A questionnaire to the survey study can be seen as Appendix 1b.

### 5.3.1 Measures of the independent variable construct

#### 5.3.1.1 Experiential knowledge

Experiential knowledge in this study was treated as experience and learning. However, the impact of experience was linked to capability development. Direct measures treating experiential knowledge as experiential learning (a subjective construct) are unfortunately not present in literature. Learning is a non-quantifiable concept. For that reason, the impact of experiential knowledge on two types of capabilities: alliance management and marketing planning and implementation capability was measured.

Previous studies used measures of experiential knowledge as either the number of years a firm has been involved in international operations (Erramilli 1991), as the proportion of foreign sales to total sales (Aulakh and Kotabe 1997), as the number of countries in which a firm has operated internationally (Agarwal and Ramaswami 1992) or the number of previous entries into international markets. However, these measures were not considered suitable for this study.

#### **Alliance management capability**

To analyze the alliance management capability, two questions were posed to the managers. The first question included three items, which aimed at measuring the alliance management capability related to the extent software firms are committed to building a relationship with distributors in foreign markets. Managers were asked to rate the relationship management factors on a seven-point Likert scale. This is shown in Table 5 as question 1.

The second question consisted of four items, which aimed at understanding the extent to which the firm depended on distributors in the foreign market. The degree of dependence was expected to show how critical it was for the firms to manage the alliance in order to acquire knowledge of the market. In this study, the managers were asked to indicate the extent to which they agreed or disagreed. By measuring the dependence between the software firms and their distributors, the potential need to develop an alliance management capability can also be correspondingly measured. The first item was developed from the preliminary case study analysis. The rest of the three items belong to Shankar (1994). This is shown in Table 5 as question 2.

**Table 5.** Measurement of alliance management capability

<b>Question 1</b>		
<b>Item</b>	<b>Scale</b>	<b>Source</b>
RLATNIMP: We are committed to improvements that may benefit relationships with our major distributor as a whole and not only ourselves.	1) very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Heide and John (1992) Lusch and Brown (1996), Heide and Miner (1992); Kaufman and Dant (1992)
RLAHELP: When our major distributor incurs problems we try to help.	1) very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Heide and John (1992) Lusch and Brown (1996); Heide and Miner (1992); Kaufman and Dant (1992)
PROBSHAR: We share in the problems that arise in the course of dealing with our major distributor.	1) very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Heide and John (1992) Lusch and Brown (1996); Heide and Miner (1992); Kaufman and Dant (1992)
<b>Question 2</b>		
LONGTERM: Maintaining a long-term relationship with our foreign partners in this market is important to us.	1) very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Preliminary case study
TARSAVOL: If our relationship is discontinued with our foreign sales partners, we would have difficulty in making up the sales volume.	1) very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Ganesan (1994); Shankar (1994)
FUTRPERF: Our foreign partners are crucial to our future performance.	1) very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Ganesan (1994); Shankar (1994)
RPLACMNT: If our relationship is discontinued with our foreign sales partner, finding a replacement foreign sales partner is very difficult.	1) very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Ganesan (1994); Shankar (1994)

Shankar (1994) investigated a variety of factors influencing the long-term orientation of both the retailers and vendors in an ongoing relationship as well as the antecedents to long-term orientation. The mutual dependence was found to be positively associated with a long-term orientation. The sample of the study consisted of five retail department store chains and 150 questionnaires were sent to senior sales representatives. A total of 52 representatives (42 %) responded. The coefficient alpha of the scale was reported to be .94.

### **Marketing implementation and planning capability**

Experience in marketing implementation and planning activities was assumed to affect the marketing planning and implementation capability. Multi-item reflec-

tive measures were adopted from Morgan, Zou, Vorhies and Katsikeas (2003). This is shown in Table 6.

**Table 6.** Measurement of implementation and planning capability

Item	Scale	Source
MKTSTRAT: Effectively translating planned export marketing strategies into actions.	1) very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Morgan et al. (2003)
MKTRESOU: Allocating appropriate resources to execute export marketing strategies.	1) very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Morgan <i>et al.</i> (2003)
MKTPRSNL: Hiring appropriate local personnel with necessary marketing skills for this market.	1) very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Preliminary case analysis

### 5.3.1.2 Customer knowledge

Originally rooted in the market orientation perspective, customer knowledge is a relatively new concept in the field of international business studies. Market orientation studies measure it as an overall indicator of a firm's market orientation and no specific measurement of the construct per se exists in literature. In this study knowledge of the customer needs was seen as a composite measure of the new product development and alliance learning capabilities. Their operationalization is mentioned in Tables 7 and 8.

### New product development capability

New product development capability was measured by a three-item, seven-point Likert scale to assess the manager's perception of the product's superiority relative to competing products (see Table 7). The items here were originally developed by Song and Parry (1997) as a measure of competitive advantage on ten-point Likert scale. However, to maintain the consistency of the Likert scale used in this study, a seven-point scale was used. Song and Parry's study consisted of 36 in-depth case study interviews conducted with both Japanese and U.S. firms. The items were pretested by a panel composed of academicians and new product development managers. The sample of their study consisted of 404 Japanese and 312 U.S. firms.

**Table 7.** Measurement of new product development capability

Item	Scale	Source
SUPRPRDT: This product was clearly superior to competing products in terms of meeting the needs of our customers.	1)strongly disagree 2) slightly disagree 3) moderately disagree 4) neutral 5) moderately agree 6) slightly agree 7) strongly agree	Song and Parry 1997
PRDTLEAD: We were the first on this market with this type of product.	1)strongly disagree 2) slightly disagree 3) moderately disagree 4) neutral 5) moderately agree 6) slightly agree 7) strongly agree	Song and Parry 1997
PRDTADTG: This product permitted the customer to do a job or do something he/she could not presently do with what was available.	1)strongly disagree 2) slightly disagree 3) moderately disagree 4) neutral 5) moderately agree 6) slightly agree 7) strongly agree	Song and Parry 1997

### Alliance learning capability

In the theory of the present study, the alliance learning capability of a firm was seen to be linked to its learning orientation and the knowledge sharing mechanisms at the firm and market levels which are employed to acquire knowledge from its partners. Thus, three questions were posed to the respondents which kept these theoretical links at the forefront. The first question related to the learning orientation factors of the company (Table 8 – question 1) and the second to measuring the extent to which knowledge sharing activities within the firm contributed to the understanding of the needs of the customers (Table 8 – question 2). The third question related to what extent the knowledge sharing activities between the firm and the partners contributed towards learning the needs of customers. For this question, a four-item, seven-point Likert scale was developed asking the managers to rate the information exchange between the distributors and the firm. Two of the items are taken from Lusch and Brown (1996) and the other two from the preliminary case analysis. This can be seen in Table 8 as question 3.

Lusch and Brown (1996) used the two items to measure a firm's perception of the extent to which its distributor keeps it informed of relevant information that could facilitate future business activities. The sample of the study consisted of 3225 firms and the response rate was 454 usable questionnaires (28.8%). A composite reliability of .87 was reported for this scale.

**Table 8.** Measurement of alliance learning capability

Items	Scale	Source
<b>Question 1</b>		
LEARINVS: The sense around here is that employee learning is an investment not an expense.	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Baker and Sinkula 1999; Calantone, Cavusgil and Zhao 2002
LEARABTY: Managers basically agree that our firm's ability to learn is the key to our competitive advantage.	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Baker and Sinkula 1999; Calantone, Cavusgil and Zhao 2002
LEARFUTR: The collective wisdom in our firm is that if we quit learning, we endanger our future.	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Baker and Sinkula 1999; Calantone, Cavusgil and Zhao 2002
<b>Question 2</b>		
INTERACT: Marketing personnel in our firm interact frequently with others such as distribution, finance and manufacturing, discussing customers' future needs.	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Jaworski and Kohli 1993
DEPTALRT: When one department finds out something important about customers it is quick to alert other departments.	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Jaworski and Kohli 1993
MEETINGS: We periodically organize inter-function meetings to analyze all important market information.	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Gray Matear, Boshoff and Matheson 1998; Maydeu-Olivares and Lado 2003; supported by preliminary case study
DOCUSHAR: We manage to regularly supply the different departments or members of the firm with reports about the	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	supported by preliminary case study

competitive conditions of the market and the future trends.		
<b>Question 3</b>		
PRTNRINF: Our foreign sales partner provides us information frequently and informally and not according to a pre-specified agreement.	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Lusch and Brown (1996); Kaufman and Dant (1992); Heide and Miner (1992)
PRTNRCHG: Our foreign sales partners keep us informed about the events and changes that may affect us.	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Lusch and Brown (1996); Kaufman and Dant (1992); Heide and Miner (1992)
PRTNRKNO: Our foreign sales partners possess user requirement knowledge for this product that we did not have in this market.	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Preliminary case study
PRTNREXP: The overall experience of your partners.	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Preliminary case study

### 5.3.2 *Measures of the dependent variable*

Export expansion: Export expansion was analyzed in two dimensions – the speed and success. Measures for each of the dimensions are discussed separately. The multi-item indicators for measuring the speed and success of export expansion were retrieved from the preliminary case study analysis as well as from previous studies.

#### 5.3.2.1 *Speed of export expansion*

The speed of export expansion was conceived in this study as a subjective perception by the firms to achieve targeted goals in a targeted time period, as can be seen in Table 9.



**Table 9.** Measurement of speed of export expansion

Item	Scale	Source
AHEADCOM: We have been ahead of our key competitors in producing the product for the market when customers needed it.	1) strongly dissatisfied 2) moderately dissatisfied 3) slightly dissatisfied 4) neutral 5) slightly satisfied 6) moderately satisfied 7) strongly satisfied	Preliminary case study
KEYEXPMKT: We have been able to capture the key export markets as expected.	1) strongly dissatisfied 2) moderately dissatisfied 3) slightly dissatisfied 4) neutral 5) slightly satisfied 6) moderately satisfied 7) strongly satisfied	Preliminary case study
RIGTPRDT: We were able to produce the right product for the market when customers needed it.	1) strongly dissatisfied 2) moderately dissatisfied 3) slightly dissatisfied 4) neutral 5) slightly satisfied 6) moderately satisfied 7) strongly satisfied	Preliminary case study
PRFTOPPO: We have been able to enter at the time when profit margin opportunities were still open in the industry.	1) strongly dissatisfied 2) moderately dissatisfied 3) slightly dissatisfied 4) neutral 5) slightly satisfied 6) moderately satisfied 7) strongly satisfied	Preliminary case study

### 5.3.2.2 Success of export expansion

An assessment of the success of export expansion was also attempted on the basis of subjective measures. Two questions related to success were asked. The first question related to subjective measures of success from certain absolute gauges of financial- and task-related performance. In the second question, which related to the success of export expansion, the respondents were asked to relate their satisfaction relative to the company's current state of knowledge of the customer needs and prior international experience. These questions are shown as questions 1 and 2 in Table 10.

**Table 10.** Measurement of success of export expansion

Item	Scale	Source
<b>Question 1</b>		
MKTSHARE: Market share relative to its stated objectives.	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Gray et al. 2002
SALESOBJ: Sales relative to its stated objectives.	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Gray et al. 2002

PRFTMRGN: Profit margin relative to its stated objectives.	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Gray et al. 2002
PRFTMRGN: Return on investment relative to its stated objectives.	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Gray et al. 2002; Pelham 1997
ROI: Return on assets relative to its stated objectives.	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Gray et al. 2002; Pelham 1997
PRDTDELI: Product delivery/sales to targeted number of customers as the firm's sales goals for this market.	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Preliminary case study
PRTNRDEV: Partnership development with distributors and technology partners as the firm's goals for this market.	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Preliminary case study
<b>Question 2</b>		
COMPRDT: This product relative to the competitor's product in the key market.	1) strongly dissatisfied 2) moderately dissatisfied 3) slightly dissatisfied 4) neutral 5) slightly satisfied 6) moderately satisfied 7) strongly satisfied	Preliminary case study
TIMEFRME: Managing the time frame of the overall project for this product relative to stated timeframe.	1) strongly dissatisfied 2) moderately dissatisfied 3) slightly dissatisfied 4) neutral 5) slightly satisfied 6) moderately satisfied 7) strongly satisfied	Preliminary case study
ALLIANCE: The relationship with your alliances (foreign sales distributors and foreign technology partners) in this market.	1) strongly dissatisfied 2) moderately dissatisfied 3) slightly dissatisfied 4) neutral 5) slightly satisfied 6) moderately satisfied 7) strongly satisfied	Preliminary case study
PERFCOM: The performance of the firm relative to the competition	1) strongly dissatisfied 2) moderately dissatisfied 3) slightly dissatisfied 4) neutral 5) slightly satisfied 6) moderately satisfied 7) strongly satisfied	Preliminary case study
OVRALPER: By the overall performance of your firm	1) strongly dissatisfied 2) moderately dissatisfied 3) slightly dissatisfied 4) neutral 5) slightly satisfied 6) moderately satisfied 7) strongly satisfied	Preliminary case study

## 5.4 Measures of the contextual factors

In the theory of the study, contextual factors were related to both the entrepreneurial orientation of the firm and the factors behind the barriers to market knowledge. First of all questions concerning entrepreneurial orientation were posed followed by questions about the barriers to market knowledge.

### 5.4.1 Entrepreneurial orientation

The first question regarding entrepreneurial orientation measured the top managements' orientation towards change when firms faced new challenges due to moving abroad. This is shown as question 1 in Table 11. The second question concerned the behaviour of the top managers regarding the knowledge sharing in the firms. In this question sales managers were asked to what extent knowledge sharing behaviour of the top managers influenced the achievement of targeted sales in the foreign market. This is mentioned as question 2 in Table 11.

**Table 11.** Measurement of entrepreneurial orientation

Item	Scale	Source
<b>Question 1</b>		
COMVISN: Our technical and marketing planning teams did not share a common vision for supporting the business.	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Jaworski and Kohli 1993; supported by preliminary case study
PRDTEXPE: We did not favour a climate of risk-taking and experimentations with products.	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Jaworski and Kohli 1993; supported by preliminary case study
ROUTEXPE: We followed the established procedures of the firm and did not experiment in upgrading the internal routines in a changing environment.	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Jaworski and Kohli 1993; supported by preliminary case study
<b>Question 2</b>		
TMTKNSH: Our company's top management emphasizes the importance of knowledge sharing in our company.	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Preliminary case study
TMTENCOR: Our company's top management encourages employees to question existing policies and working methods, to innovate and to challenge current systems.	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Preliminary case study

5.4.2 *Barriers to market knowledge acquisition*

The other kinds of contextual factors included in the study were the barriers to market knowledge which eventually resulted in barriers to exports. These barriers were identified at the firm- as well as market levels. At the firm level the barriers related to knowledge sharing aspects, whereas at the market level they related to knowledge acquisition features. The respondents were asked to what extent these factors prolonged the time frame for the growth of foreign sales in the foreign market. A list of items/factors is given in Table 12.

**Table 12.** Measurement of barriers to export expansion

<b>Item</b>	<b>Scale</b>	<b>Source</b>
SLOWINDS: The slow growth rate of this product's industry offered little foreign sales opportunities	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Preliminary case study
PRDTKNOW: Our firm lacked knowledge to make product adaptations for this market.	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Preliminary case study
MKTKNOW: Our firm lacked sales and marketing skills for this market.	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Preliminary case study
KNOWSHAR: Our firm hired a wrong representative/distributor for this market.	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Preliminary case study
WRNGDIST: Our firm faced problems in managing the relationships with distributors in this market.	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Preliminary case study
RLATNMGT: Our firm had relatively little know-how to deal with foreign operations.	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Preliminary case study
INTLKNOW: Our firm was satisfied with the local market share.	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Preliminary case study
LACKTIME: Our firm had to give up some foreign opportunity due to lack of time for making customer adaptations to the product.	1) Very low 2) moderately low 3) slightly low 4) neutral 5) slightly higher 6) moderately higher 7) very high	Preliminary case study

## 5.5 Measure validation

The fundamental objective of measure validation is to produce observable scores as close to the true scores as possible. Moreover, eliminating measurement error is considered a critical step in producing this score. The true scores, especially for the subjective state questions, are not known to the researcher who must merely rely on inferences. The quality of inferences would depend directly on the procedures that were used to develop the measures and the evidence supporting their worth.

### 5.5.1 Reliability

Reliability is the degree to which measures are free from error and therefore yield consistent results (Peter 1979). Thus, reliability is the extent to which measures are repeatable in different situations by different respondents (Nunnally 1978:191). Reliability is a necessary condition for the validity of measures because unreliable ones may decrease the correlation between them. To increase reliability, the use of multi-item measures has been suggested in literature, as they allow measurement errors to cancel out each other, thus increasing the reliability of the scale (Peter 1979).

### 5.5.2 Validity

Validity refers to the degree to which instruments truly measure the constructs they are intended to measure (Peter 1979; Nunnally 1978:86). A measure is valid when the differences in observed scores reflect true variations in the characteristics one is attempting to measure. Validity is divided into internal and external validity. Internal validity reflects the study's overall ability to measure what it was intended to measure. External validity, on the other hand, refers to the generalizability of the research findings across other firms in the population. Internal validity of a study is further divided into content validity, criterion-related validity and construct validity.

Content validity is the extent to which indicators provide adequate coverage of the topic under study (Emory 1980:129). The content validity for this study was ensured by carefully choosing the literature related to the subject matter. The items were selected from previous studies and were further supported by the analytical findings of the preliminary case studies. Thus, a representative collection of items was chosen. Further, several questions related to a scale were posed to

the respondents. As mentioned in Chapter 5, pre-testing of the instrument was carried-out to further enhance content validity.

Criterion-related validity (or predictive validity) reflects the success of measures used for certain empirical estimation purposes (Emory 1980). This refers to the extent to which the theoretical prediction of the outcome or existence of some concurrent behaviour can be assessed. It can also be seen as the extent to which a measure predicts the answers to another question or a result to which it ought to be related. Thus, predictive validity is used to estimate an important form of behaviour that is external to the measuring instrument itself. This kind of validity is divided into predictive and concurrent validity. These sub-divisions only seem to differ from each other from a time perspective. It is suggested that any criterion must be judged in terms of relevance, freedom from bias, reliability and availability. Predictive validity is determined by the degree of correspondence between the two measures involved. The relevancy of the criterion can be increased by properly defining the measure and its scores. For example, the success of export expansion in this study was measured by relative as well as absolute measures.

Construct validity refers to the measurement of the abstract characteristics of the construct for which no empirical validation is possible. This kind of validity relates to what construct or concept is measured, and aims to assess the degree of generalization of the constructs. Nunnally (1978) describes discriminant validity as a closely related approach to assessing the construct validity of the measures. It is the extent to which a group of respondents is being measured, who are supposed to and indeed do differ, in regard to their answers. Churchill (1979) explains this as the extent to which the measure is certainly novel, and not simply a reflection of another variable. Thus, scales that correlate too highly may be measuring the same rather than different constructs. Discriminant validity is indicated by predictably low correlations between the measure of interest and other gauges that are supposedly not measuring the same variable or concept.

To ensure construct validity in this study, the main theoretical constructs were developed from the theoretical approaches which were closely linked to the research questions. The construct of market knowledge competence was developed in the theoretical framework of the study, taking into consideration the key ideas of the theory which appeared to relate to the dependent variable. Then, hypotheses were developed to analyze different components of the construct, such as a given set of firm capabilities like new product development, marketing planning and implementation, alliance learning and management capabilities. Thus, a focused approach was followed from the beginning to develop the construct and its variables. Further, construct validity was ensured by multi-item measures, select-

ing the sample of the study from the same industry and using the preliminary case study findings in the survey. The aim was to ensure the generalization of the preliminary findings on a larger sample.



## 6 EMPIRICAL ANALYSIS AND RESULTS

This chapter presents the empirical analysis and results of the study. First of all, an overview of a software product and the software industry is presented in Section 6.1 and 6.2 respectively. This is followed by a discussion of the sales channel of the industry in Section 6.3. Then, the characteristics of the overall sample and export-related activities are presented in Section 6.4. In the empirical analysis, following the PLS algorithm the reliability and validity of the outer measurement model is assessed in Section 6.5. This is followed by an assessment of the reliability and validity of the structural model in Section 6.6. Next, in Section 6.7, the structural model individual paths arising from each of the sub-constructs of market knowledge competence to the dependent variables of speed and success of export expansion is assessed on the parameters of the PLS algorithm. This is followed by an assessment of the validity and reliability of the contextual factors and their structural relationship to the dependent variable of export expansion capabilities in section 6.8. In the end a summary of the results is presented.

### 6.1 The nature of a software product

Software can be developed in various ways; the vendor firm can choose to respond to an existing market demand by adding required features to an already established software product, or the firm can present a completely new concept by introducing software that enables the users to use new ways of doing business. The core idea behind a software product is greater efficiency and the reduction of mechanical and paper work. This is assumed to provide cost and time savings and increased revenues for the user. As software products are developed by keeping the real needs and requirements of customers in mind and also keeping technical features as a priority, these are referred to as ‘customer-oriented’ products. The features of a software product are integrated and interlinked to such an extent that problems in one feature may cause difficulties when using the complete programme.

To understand and respond to market need trends, many software companies tend to involve the customer from the start of the product development process. However, in some cases the customer may not be sure of his/her needs. A customer may know how to run a business, but may not be aware of how to put human tasks on a technical interface. However, it is the job of the software vendor firm to listen to the customers’ needs and to transform them into a technical interface. Any software product which addresses the needs of a new embryonic market/industry is simply unique and might be considered as the right product at the

right time depending on its user friendly features. On the other hand, software products for stable industries can usually serve the customers' needs just with some added features, and provide more additional value to the customers than the competitors' products can.

The other important element that impacts on software product development is related to the nature of the customer needs. A software vendor firm always needs investment in R&D to cope with customers' evolving needs. Customer needs in the software industry are continually emerging, due to the fact that users are sometimes not clear enough about their own needs. Furthermore, as they use the software they discover better features that may lead to greater efficiency and better ways of doing business.

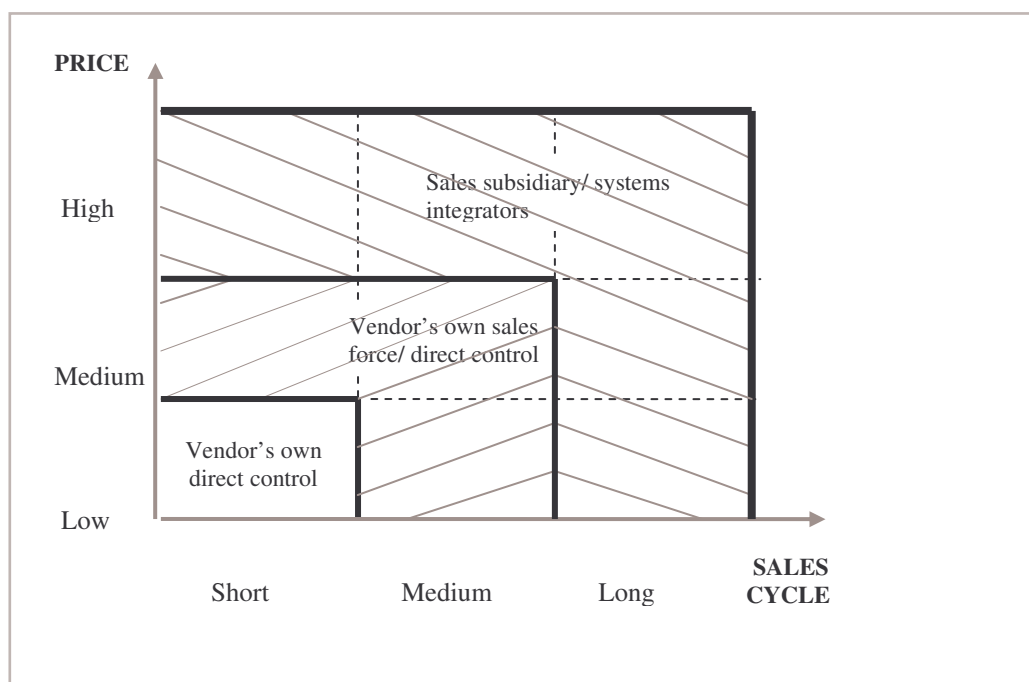
## 6.2 The nature of the software industry

In the software development industry, pricing option governs the choice of channel, foreign distributors and choice of partner. The most common software pricing option is the product licence fee paid with a recurring annual charge for maintenance and customer support. Some firms rent out the legal rights of using software services for a specific period of time on a contractual basis. In the contracts the number of users and the time frame of use are specified. PC antivirus-related software is subscribed to through leasing the software application as a combination of product and service over the internet. Through the leasing option the vendor firm may be able to predict the revenues for the upcoming year while subscribers renew the service. In the indirect pricing option, software development firms usually sell the product via value added resellers or distributors.

Sales cycle refers to the process of converting customers into users of the software. It is the time duration that customers (end-users) take to evaluate, view and purchase the software product including the free trial demonstrations and meetings with the seller. Thus, the sales cycle is the time period from the evaluation or initial offering until the sales deal is completed. Naturally, software vendor firms like to shorten the sales cycle, as a lengthy one means additional costs. Moreover, firms prefer a committed and experienced sales force that is able to convince a large number of customers to purchase the product in a relatively short time. However, certain factors influence this length of time, which mainly relate to the product itself, rather than the market. When the software product is new and immature on the market, educating the users is the main objective of the vendor firm. An immature, complicated and complex product is likely to lengthen the sales cycle. In the case of initial sales of a new software product, the software is

sold via a personalized and committed sales force to initial users. Thus, direct involvement by the sales force is necessary. On the other hand, for the products which receive earlier market acceptance, indirect sales channels are used. The main objective of using sales channels for mature products is based on creating a lead generation of users in the sales pipeline. Due to continued revenues, the lead generation of users in the sales pipeline acts as a motivating factor for strengthening the partnership between the vendor and the sales partner (distributor) firm. The sales partner's main interest is to implement the given product and provide after sales services. Thus, the choice of sales strategy and the pricing option would depend largely on the age of the product. Similarly, the choice of the sales and distribution channels is interplay of the pricing option and the length of the sales cycle.

Figure 16 denotes that under a vendor's own control, direct sales channels are suitable for a low price and short sales cycle. A high price and short sales cycle may mean a vendor firm selling the highly priced product in a shorter time period. However, this may not be possible, as high priced software will need a longer sales cycle to convince the end-users of the value of the product.



**Figure 16.** Choice of sales channel in software industry.

(adapted from McHugh 1999)

For a medium priced and medium sales cycle software product, the vendor's own personnel visiting the end-users individually can also be an option. How-

ever, for a medium and high priced product with a longer sales cycle, a sales subsidiary or partnerships with value-added resellers (sales distributors) may be needed by the vendor firms. In that case, these sales channel options are used for installation, the deployment of the product to the users' facilities and providing after sales services. Software firms usually adopt a combination of several types of sales models as their sales strategy.

Figure 17 shows the sales function and the choice of sales strategy. The choice of a suitable sales strategy is primarily dependent on what type of sales functions are involved in a specific market. As with other consumer products, the marketing function aims to enhance the position of the company and the product in the minds of the users, thus helping to increase the market share of the company. Direct contacts such as personal relations, publicity via the press, advertisements in the media and contacts with analysts and consultants are important in creating word-of-mouth and earning credibility. The servicing function is important after the product has been initially installed. The user may need services related to consulting, training, maintenance, upgrades and new modules. Thus, according to the industry growth situation, the nature of the market and the product itself, software firms utilize any combination of the sales strategy that focuses on all the main sales functions of marketing, selling, implementing and servicing.

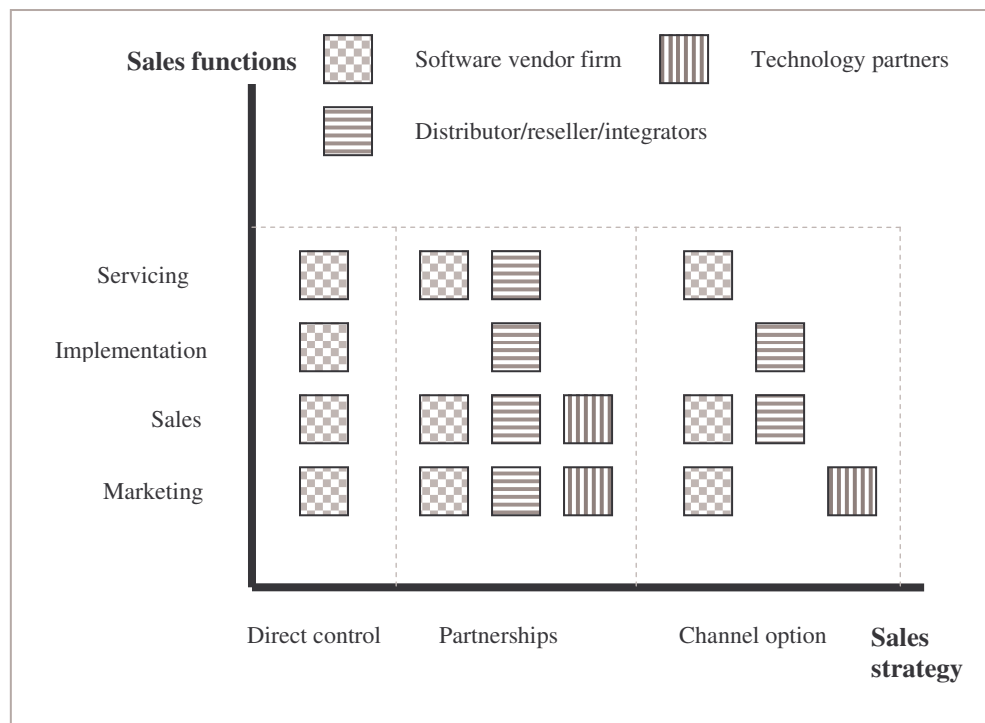


Figure 17. Sales functions and the choice of sales strategy.

Due to the strategic importance of the marketing and the servicing functions in a software sales strategy, firms tend to maintain them under the direct control of the software development firm. Here, the role of the partners or the third party is assumed to be minimal. This is also shown graphically in Figure 17.

When marketing is the focus of the sales strategy, the value of each individual deal is more important than the number of deals. Therefore, firms focus on a limited number of high value customers. In a partnerships sales strategy, the number of deals is perhaps smaller or greater; the key objective is to create a market share of the product by developing credible partnerships and business relations. While the channel sales option is mostly utilized when there is a larger customer base, the focus of firms is on the installation and taking care of the after sales services of the installed programmes. The channel sales option is most commonly utilized in sales strategies of foreign countries. However, firms may not follow the hard and fast rules of following such strategies, and a sales model of a typical software development firm can be a combination of any of these functions. This is typical when business grows and the firm has to divide its activities between the direct ownership and the partners. Further, the firm may have multiple sales strategies within each distinct market to suit available opportunities. However, the coordination and control of each type of sales strategy may add to its complexity.

### 6.3 The export sales channel in the software industry

The selling and marketing of a software product is conducted through export channels in target markets. The process consists of marketing, sales, implementation and servicing activities. For software development firms, it is important to understand which of these activities should be integrated under the direct control of the vendor, and which should be provided by partners from a third party. Below a short description of each of the activities in a software product export channel is given:

Marketing: Sales prospecting and lead generation activity plus market profile building

Sales: All aspects of the sales cycle from a potential customer's interest through to actually signing a contract

Implementation: Installation and deployment activities to achieve a working solution based around the software product

Service: Activities related to servicing and supporting the needs of the installed base

In software product export channels partnerships are most commonly developed during sales and implementation activities. However, while some software development firms develop partnerships during marketing and implementation activities, it is also common for software development firms to maintain direct control over these activities (McHugh 1999:84).

The two other kinds of vertically integrated indirect sales partners along the export channel are the integrators and the complementary technology partners. The nature of this partnership is strategic. It is attributed to the fact that the partnership's objective is to jointly develop a complete solution for the customers. It also focuses on seeking competitive advantage through increasing the value of combined resources for both firms. In a complete solution both partners contribute component products and success depends on the fit between these products. This view of strategic partnership coincides with the existing view in literature that refers to strategic partnerships as the 'pooling of specific resources and skills by cooperating organizations in order to achieve common goals as well as goals specific to the individual partners while retaining their separate entity' (Varadarajan and Cunningham 1995:282). In strategic partnerships, the key emphasis is laid on utilizing independent resources for jointly accomplishing the individual firm objectives. Two different types of strategic partners for software development firms, integrators and complementary technology partners are discussed below:

#### Integrators

Integrators are software companies who help the customer put together a total working solution by integrating a number of different components, of which a vendor's product is essentially a part (McHugh 1998:97). Integrators are the partnership choice in growing and profitable markets with a higher than average deal size in monetary terms.

Systems integrator firms are purely service companies with no product of their own. Their main role is to assemble component software and hardware into a complete solution. Management and IT consultant types of integrators operate with a broader range of activities, such as advising clients in appropriate software purchases and assisting them with implementation.

### Complementary technology partners

The other type of strategic partnership which may become a direct source of customer knowledge is complementary technology partners. A complementary technology partnership is a licensing deal. In this deal the software vendor firm embeds the software product or applications of another firm into its own in return for royalty payments. Many bigger firms such as Microsoft, IBM and SAP have built their operating systems on the basis of such partnerships. In this way, the software vendor firm gets access to a larger customer base, and also enjoys a positive image in the market through dealing with such firms. Independent software vendors (ISV) develop enabling technologies such as tools, databases and middleware, and embed another vendor's technology or interfacing into their software applications where the combination provides a more complete total solution. Thus, the software is embedded into the complementary technology of the partner's product. Certain license-providing firms have developed competency criteria for selecting partners. For instance, Microsoft partnership competency criteria comprise customer references and individual certifications and/or development of tested and certified software according to Microsoft technologies. Based on the above selection criteria, the more customer references or certified software a software vendor firm can generate, the more points are awarded to it. This describes the partnership as 'Gold' or just 'Certified Partners'

## 6.4 Characteristics of the study sample

### 6.4.1 *General characteristics*

In this section, an overall description of the sample is presented. A summary is given in table 13. First of all, the general characteristics of the sample are presented. This includes a) the year when the companies were founded b) the starting year of export operations c) the year when the export product was developed and d) the country/market of foreign operations about which respondents answered the survey.

a) FONDYEAR - Year of foundation: As can be seen from Table 13 for the total sample N=100 firms, 32 cases were founded before 1995, 40 cases in the time period 1996 - 2000 and 27 cases between the years 2001- 2005.

b) EXPYEAR - Year of starting export operations: A small proportion of the total sample, only 7 cases, started export operations before 1995. While 26 cases started between the years 1996- 2000, 57 cases started export operations in the



time period 2001- 2005. A total of 10 cases started export operations later than 2005.

c) PRDTDEVYEAR - Year of export product development: From the total sample N=100, a total of 7 firms developed their export product before 1990. Then, in the time period 1991-1995, there were 13 cases. 19 cases developed an export product between the years 1996-2000 with 61 cases during the years 2001- 2006.

**Table 13.** General characteristics of the sample firms

<b>a) Year of Foundation</b>	<b>Frequency</b>	<b>Percent</b>
Before 1975	1	1.1
1976-1980	2	2.2
1981-1985	6	6.5
1986-1990	12	13
1991-1995	11	11
1996-2000	40	40
2001-2005	27	27
<b>b)The starting year of export operations</b>		
Before 1990	3	3.2
1991-1995	4	4.0
1996-2000	26	26.7
2001-2005	57	57.3
Later than 2005	10	10.8
<b>c) Year of export product development</b>		
Before 1985	4	4.1
1985-1990	3	3.2
1991-1995	13	9.7
1996-2000	19	20.4
2001-2006	61	61.6
<b>d) Country/market of operations</b>		
Scandinavia	33	33.9
United Kingdom	7	7.5
America (North and South)	20	20.4
Europe	25	26.9
Asia Pacific	9	9.8
Asia	4	4.3
Global	2	2.2

Comparing the year of product export product development with the number of firms which started export operations between the years 2001-2006, it was clear that the major proportion of the sample cases (80 firms) started export operations in the same time period when the export product had been developed. Table 13 presents an overall summary of the general characteristics of the sample of the study. The percentage may not be exact 100 % due to rounding off.

d) INTLOPERCON - the country/market of foreign operations about which respondents answered the survey: From the total sample N=100, 33 cases (33.9 %) answered the survey from the viewpoint of export operations in Scandinavian countries, followed by 25 (26.9 %) for European operations. A total of 20 firms answered the survey for their export operations in America (North and South), and lastly 9 firms answered for Asia Pacific countries. Table 14 presents a summary of the descriptive statistics for the general characteristics of the study sample.

**Table 14.** Descriptive statistics for general characteristics of the sample

	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
					Statistic	Std. Error	Statistic	Std. Error
<b>FONDYEAR</b>	1974	2006	1995	7.156	-1.094	.247	.383	.490
<b>EXPYEAR</b>	1985	2007	2001	3.772	-1.544	.249	3.919	.493
<b>PRDTDEVYEAR</b>	Before 1984	2001-2006	1996-2000	.90686	-1.672	.247	2.323	.490
<b>INTLOPERTNCON</b>	1	7	2.86	1.686	.369	.247	-.836	.490

It can be seen from the skewness values in Table 14 that most of the variables lie at the maximum end of the distribution. This can be matched with Table 13 where 78 of the total number of firms were founded between years 1995-2006. Similarly, a greater proportion of firms out of the total sample started export operations in the period 1995-2005. A total of 10 firms started export operations after 2005. Thus, the export product development years fall between the higher ends of the distribution i.e. 1995-2006. For the names of the international countries of export operations, values from 1-7 were assigned as: 1=Scandinavia, 2= the UK, 3= the USA + Canada, Latin America, 4= Europe (including Germany, France, Austria, the Netherlands, Spain, Switzerland and Eastern Europe), 5= Asia (including China, Russia, South Korea and India), 6= Asia Pacific (including Japan, Hong Kong Australia and New Zealand), 7= Global, as some of the respondents

answered with just 'global', without naming any country. Positive kurtosis values also indicate that the distribution is clustered in the centre. Positive skewness for this variable also shows that most of the respondents answered the survey from the viewpoint of companies lying at the low ends of the distribution, meaning from 1 towards 2 and 3 and onwards.

In this study, the size of the firm was measured by the number of personnel working on the export product. It must be noted here that the respondents were specifically asked to state the number of employees only working on the export product and not the total number of employees in the company. As can be seen in Table 15, 71 firms had between 1-50 employees working on the export product. Because of the small size of the firms, it can be said that all the employees were working on the same product. The other aim to gauge the firm size by the number of personnel working on the export product was to measure the level of foreign commitment from these firms. The overall size of the firm in terms of the total number of employees was not requested, because export expansion was investigated from the viewpoint of one specific product of the company. The overall size of the firm in terms of the total number of employees may be used as an indicator of size and performance, but perhaps not as an indicator of export expansion and size with reference to a specific product in one specific foreign market.

From the total sample, about 71 % of the companies had a range of 1-50 employees working on the export product. A total of twelve cases had more than 100 employees and only two cases had more than 250 employees working on the export product. The frequency distribution of employees working on the export product is given in Table 15.

**Table 15.** Distribution of the number of employees working on the export product

	Number of employees						Total
	1-50	51-100	101-150	151-200	201-250	More than 250	
<b>Frequency</b>	71	15	6	2	4	2	100
<b>Percent</b>	77.2	8.7	4.3	2.2	4.3	2.2	100%

#### 6.4.2 Characteristics of export operations

The characteristics of export operations were related to the general information about this activity in the sample firms. It included a) the duration of export operations, b) the number of export countries served in this time duration, c) the total

number of export products of the companies d) the total number of foreign customers e) the number of foreign distributors and f) the number of foreign technology partners. The frequency distribution for each of these is given in Table 16. The percentage may not be exact 100 % due to rounding off.

**Table 16.** Distribution of the characteristics of export operations

Characteristics	Frequency	Cumulative Percent
<b>a) Duration of foreign operation</b>		
1-5	53	53.3
6-10	38	35.9
11-15	6	6.5
More than 15	3	3.3
<b>b) Number of export countries</b>		
1-5	69	74.2
6-10	14	14.1
11-20	13	13.3
More than 41	4	1.1
<b>c) Number of export products</b>		
1-10	84	91.3
11-20	9	5.4
31-40	4	1.1
41-50	3	1.1
<b>d) Number of foreign customers</b>		
1-10	30	30.2
11-20	26	26.8
21-30	9	9.8
31-40	4	4.3
41-200	16	17.4
201-1000	11	12.0
More than 1000	4	4.3
<b>e) Foreign distributors</b>		
0	18	19.6
1-10	61	62.0
11-20	14	10.9
21-30	1	1.1
31-40	2	2.2
41-50	2	2.2
more than 51	2	2.2
<b>f) Foreign technology partners</b>		
0	13	14.1
1-5	73	79.3
6-10	12	5.3
11-15	2	2.2

a) DURATION – The duration of export operations: The duration of export operations described the overall export time period of the company. A total of 53

cases had exported from 1-5 years, 38 cases from 6-10 years and 6 cases had exported to foreign countries from 11-15 years. Only 3 cases had more than 15 years of export experience.

b) NUMEXPCON - Number of export countries: This described the total number of export countries to which firms were selling their export product. From the total sample, 69 cases were exporting the product to between 1-5 countries, 14 cases to between 6-10 countries, 13 to between 11-20 countries and the rest exported the product to more than 41 countries.

c) NUMEXPRDT - Number of export products: From the total sample, 84 cases had in the range of 1-10 export products. The rest of the cases had more than 10.

d) NUMINTLCLNT- Number of foreign customers: A total of 30 cases dealt with 1-10 foreign customers in all their countries of exports, 26 cases had 11-20, 16 cases had 41-200 and 11 cases had between 201-1000 foreign customers.

e & f) NUMINTLDIS & NUMINTLFT - Number of foreign distributors and technology partners: A total of 61 cases dealt with between 1-10 foreign distributors in the export countries. The number for 14 cases ranged between 11-20 distributors. A total of 7 cases had greater than 20. In total, 18 cases had no foreign distributors at all, but dealt with foreign technology partners in the relevant export markets. A total of 73 cases had partnerships with between 1-5 foreign technology partners and 14 cases had more than 5.

Table 17 presents a summary of the description of the export characteristics of the overall sample.

**Table 17.** Descriptive statistics for the export characteristics of the sample

	Minimum	Maximum	Mean	Std. Dev	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
<b>DURATION</b>	1	36	6.50	5.075	2.825	.249	12.622	.493
<b>NUMEXPCON</b>	1	100	11.63	14.497	3.416	.247	15.536	.490
<b>NUMEXPRDT</b>	0	50	5.07	6.585	4.399	.247	25.180	.490
<b>NUMINTLCLNT</b>	0	100000	1537	10521	9.066	.249	84.970	.493
<b>NUMINTLDIS</b>	0	100	8.08	16.291	4.269	.247	20.845	.490
<b>NUMINTLFT</b>	0	15	2.43	2.835	2.644	.247	8.139	.490

Positive skewness and kurtosis values in Table 17 indicate scores clustered to the left of low values and clustered in the centre respectively. It can also be seen from Table 16 that for the duration of export operations almost 88 percent of the total number of firms had export operations going on for 1-10 years. The mean of export operation years for the total sample was 6.5. Similarly, for the number of export countries, about 72 percent of firms had export operations in 1-5 countries with a mean of 11.63. All the other values also lie at the lower end of the distribution.

The export characteristics were also analyzed by seeing how firms changed the sales method from first to current. The first sales method referred to the one used upon market entry, whereas the current sales method referred to a change after operating for sometime in the foreign country. As mentioned in the analysis of the software industry, software development firms use a combination of sales methods by using different export sales channel strategies. Further, depending on the successive resource commitment of the firms in foreign markets and the embryonic nature of software products, the sales method also undergoes an evolution from direct to indirect or a combination of both.

The first and current sales method of the sample firms is shown in Table 18.

**Table 18.** Distribution of the first and current sales methods of sample firms

Sales method	Nature of sales method					
	Direct exports	Distributor – value- added reseller	Joint venture sales subsidiary	Joint venture wholly owned sales subsidiary	Licensing	Online product delivery
First Sales method	49	17	1	3	8	22
Percent	53	18	1	3	8	15
Current Sales method	30	48	0	7	7	8
Percent	33	43	0	7	7	8

From the total sample, 49 cases started sales operations as direct exports at the time of entry into the target country, 17 started export operations via a distributor

or value-added reseller, 4 as a joint venture, 8 as licensing and 22 sold the product through online delivery.

First sales method: From the total sample, 49 cases started sales operations as direct exports at the time of entry into the target country. Of these, 27 cases still used direct exports as the current sales method. 16 out of the 49 cases changed to distributors, 3 changed to a wholly owned sales subsidiary and 3 changed to on-line sales. This can be seen in the second column of Table 18.

Current sales method: Out of a total of 49 firms who began with the direct sales method, 27 kept to this method, as stated above. However, 2 cases were added when they changed the sales method from the distributor to the direct method, and one case was added when it changed from online as the first sales method to the direct method. Thus, altogether there were 30 cases trading through the direct sales method at the time.

Regarding the number of 48 cases operating with the then current sales method of distributors, 15 of them continued to follow the distributor sales method. A total of 16 more cases were added when firms who had started with direct exports changed to the distributor sales method. Similarly, a total of 17 more cases were added when firms changed the first sales method from online product delivery to the distributor sales method. This can be seen in the third column of Table 18.

Regarding the wholly owned sales method, 3 cases adopted it as a first sales method and continued to follow it. One more case was added from the licensing sales mode, while 3 more were added when firms changed from the direct sales to the wholly owned sales method. This can be seen in column 5 of Table 18. From the total sample, 8 cases started as licensing modes. Out of these 8, 7 followed the same method and one changed to the wholly owned sales subsidiary. This can be seen in column 6 of Table 18. Regarding the online sales delivery method, a total of 22 cases adopted it as their first sales method. Out of these, 17 changed to the distributor sales method, as mentioned above. 5 of the 22 cases followed the then current online sales method

## 6.5 Validating the measurement model

In the reflective mode, the inner measurement model was tested by examining a) internal consistency b) convergent validity and c) discriminant validity. From the theoretical framework we know that both of the latent constructs of EXPKNOW and CUSTMKNOW consist of latent variables of alliance learning (ALLEA-CAP), alliance management (ALLMGMTCAP), marketing planning and imple-



mentation (MKTCAP) and new product development capabilities (NPDCAP). The internal consistency of the latent variables was first of all assessed by the loadings values between the indicator and its latent variables. Two of the negatively worded items TARSAVOL and RPLACMNT were reversed before computing the individual items loadings. However, these were the only two items indicating  $< 0.50$  loadings on their respective latent constructs. All the rest of the indicators in the reflective mode of the model loaded with  $\geq 0.50$  values on their respective latent variables indicating a high degree of individual item reliability. The loadings for each of the individual indicators with their relevant latent variables are given in Table 1, Appendix 2.

To further validate the internal consistency of the measures, the construct reliability for each of the main latent constructs (CUSTMKNO and EXPKNOW) by means of composite reliability was carried out. As can be seen from Table 1 in Appendix 2, the composite reliability values for the latent variables of all four kinds of capabilities are  $\geq 0.80$ , thus showing a high degree of internal consistency of latent constructs.

To assess the convergent validity of the reflective block of the model, the average variance extracted (AVE) with a value higher than 0.5 has also been suggested in literature (Fornell and Larcker 1981). As can be seen from Table 1 Appendix 2, three latent variables in the reflective mode of the model demonstrated a  $\geq 0.50$  AVE. Values higher than and equal to 0.5 indicated that the measurement errors account for relatively less variance in the indicators than the latent variables. Thus, the latent variables measured the real phenomenon with less degree of measurement errors. For that reason, all the latent constructs were found to be sound and satisfactorily valid.

Fornell and Larcker (1981) suggested that the AVE can also be used to assess the discriminant validity of the study. However, in such a case the AVEs of the latent variables should be greater than the square of the correlations with any other latent variables. This could indicate more variance shared between the latent variable components and its block of indicators than with components of another latent variable representing a different block of indicators (Chin 1998; Fornell and Larcker 1981). From Table 2 Appendix 2, it can be seen that the square of the AVEs of the latent constructs is higher than the correlation among any other latent variables. Thus, indicators for each latent variable shared more variance between their respective latent variable components. As mentioned in Chapter 5.2, clear guidelines as to how much greater the squared AVE should be than the correlation among any other latent variables are not given in literature.

Analyzing the cross loadings of the latent variables have been suggested as another test for assessing the discriminant validity of the reflective mode of the model. Cross loadings were obtained by calculating the correlations between latent variable scores and other indicators beside the latent variables' own block (Chin 1998:321). It can be seen from Table 1 Appendix 2, that all the indicators loaded higher on their own latent variables and not a single indicator shared higher scores with a latent variable from another block. Thus, all the items reflected their respective latent variables and measured what they were supposed to measure. As can be seen from Table 19, all the individual items loadings are  $\geq 0.5$  thresholds.

**Table 19.** Loadings, cross loadings, composite reliability and the AVE of the modified measurement model

CONSTRUCT/ INDICATOR	NPDCAP $\rho_c = 0.76$ AVE= 0.52	MKTCAP $\rho_c = 0.85$ AVE= 0.67	ALLEAR- CAP $\rho_c = 0.87$ AVE= 0.40	ALLMGM TCAP $\rho_c = 0.92$ AVE= 0.72
<b>SUPRPRDT</b>	<b>0.729</b>	-0.035	0.283	0.234
<b>PRDTLEAD</b>	<b>0.755</b>	0.251	0.187	0.295
<b>PRDTADTG</b>	<b>0.680</b>	0.140	0.060	0.310
<b>MKTSTRAT</b>	0.146	<b>0.859</b>	0.140	0.038
<b>MKTRESOU</b>	0.058	<b>0.905</b>	0.109	-0.133
<b>MKTPRSNL</b>	0.168	<b>0.658</b>	0.169	-0.042
<b>LEARINVS</b>	0.178	0.111	<b>0.697</b>	0.151
<b>LEARABTY</b>	0.172	0.085	<b>0.696</b>	0.212
<b>LEARFUTR</b>	0.221	-0.083	<b>0.627</b>	0.167
<b>INTERACT</b>	0.271	0.295	<b>0.694</b>	0.180
<b>DEPTALRT</b>	0.140	0.076	<b>0.517</b>	0.109
<b>MEETINGS</b>	0.260	0.064	<b>0.632</b>	0.104
<b>DOCUSHARE</b>	0.139	0.181	<b>0.540</b>	0.067
<b>PRTNRINF</b>	0.084	0.133	<b>0.612</b>	0.404
<b>PRTNRCHG</b>	0.188	-0.038	<b>0.514</b>	0.492
<b>PRTNRKNO</b>	0.102	0.042	<b>0.655</b>	0.380
<b>PRTNREXP</b>	0.126	0.169	<b>0.623</b>	0.428
<b>RLATNIMP</b>	0.354	-0.149	0.271	<b>0.830</b>
<b>RLAHELP</b>	0.237	-0.020	0.438	<b>0.895</b>
<b>RLAPBS</b>	0.380	0.003	0.390	<b>0.912</b>
<b>LONGTERM</b>	0.397	-0.119	0.281	<b>0.869</b>
<b>FUTRPERF</b>	0.250	0.040	0.195	<b>0.725</b>

However, two of the items TASAVOL and RPLACMNT indicated individual loadings on their latent constructs as less than 0.50 and were supposed to be removed from the measurement model. Thus, after removing these two items, the reliability and validity of the modified measurement model was assessed again by

following the same assessment criteria and procedure as mentioned for the original measurement model. Further, by removing the two indicators from the ALLMGMTCAP construct, its composite reliability value improved from 0.89 to 0.92. However, there was a minor decrease in the composite reliability for NPDCAP from 0.80 to 0.76. Overall, all the measures and latent variables scored a high degree of internal consistency for individual items reliability and construct reliability for the modified measurement model. Next, to assess the discriminant validity of the modified measurement model, the AVE for the latent variables was assessed. Besides ALLEARCAP, all the latent variables showed greater than .50 AVE. This is shown in Table 19.

To test the discriminant validity of the latent variables, the Fornell and Larcker criterion of the squared AVE was computed for the latent variables. As Table 20 indicates, all the squared AVEs were fairly larger than the correlations among the latent variables. Thus, the latent variables in the modified measurement model showed a high degree of discriminant validity at the construct level.

**Table 20.** Inter-construct correlations and the AVE along the diagonal

Latent variables	ALLEARCAP	ALLMGMT CAP	MKTCAP	NPDCAP
ALLEARCAP	<b>0.64</b>			
ALLMGMTCAP	0.385	<b>0.84</b>		
MKTCAP	0.167	-0.047	<b>0.81</b>	
NPDCAP	0.277	0.374	0.148	<b>0.72</b>

Next, to further assess the discriminant validity of the modified measurement model, the cross loadings of the latent variable and other indicators besides the latent variables' own block were computed. As shown in Table 19, none of the indicators loaded higher with another latent variable than the one it was intended to measure. Thus, all the indicators reflected a true score for their own respective latent variable.

In sum, the modified measurement model demonstrated the required degree of individual item reliability, construct reliability and discriminant and convergent validity. In the next section, the quality of the inner structural model is evaluated.

## 6.6 Assessment of the overall structural model

Within the PLS approach, Chin (1998:316) suggested evaluating the inner structural model through prediction-oriented measures. It included the evaluation of  $R^2$  for dependent latent variables, the Stone-Geisser test for  $Q^2$  and bootstrapping methods. A description of each of these measures was presented in Chapter 5.2.

The interpretation of  $R^2$  in PLS path modelling is similar to the traditional linear regression. In the PLS structural model, paths can be interpreted as standardized betas, and thereby the explained variance in the endogenous variables is assessed as an indication of the overall predictive strength of the model.  $R^2$ , corresponding standardized path estimates, are examined and interpreted.

From Table 21, it can be seen that the  $R^2$  values for the latent endogenous variables of the speed and success of export expansion are moderate (30%) and substantial (50%) respectively. The independent latent variables explain 30 % and 50 % of the variance in the speed and success of export expansion. Only ALLMGMTCAP showed a small effect on SPEED.

**Table 21.**  $R^2$ ,  $Q^2$ ,  $f^2$  and cross-validated redundancy values in the overall structural model

Latent variables	$R^2$	$Q^2$	$f^2$ SPEED	$f^2$ SUCCESS
<b>SPEED</b>	0.30	0.054	-	-
<b>SUCCESS</b>	0.50	0.061	-	-
<b>ALLEARCAP</b>	0.280	-	0.21	0.59
<b>ALLMGMTCAP</b>	0.093	-	0.09	0.12
<b>MKTCAP</b>	0.157	-	0.23	0.28
<b>NPDCAP</b>	0.188	-	0.27	-0.17

To assess the predictive relevance of the structural model for parameter estimate purposes, the blindfolding procedure was suggested to compute the  $Q^2$  values. This procedure was applied on latent endogenous variables that were utilized in the reflective measurement block of the model. In this study,  $Q^2$  is computed for the speed and success of export expansion as the latent endogenous variables in the reflective model. As shown in Table 21, a greater than zero redundancy index

$Q^2$  for both the endogenous latent variables indicated the predictive relevancy of the path model.

Further,  $f^2$  was also computed to analyze the effect size of the independent latent variables on the dependent latent variable. This indicated whether a particular independent latent variable had a substantive impact on the dependent latent variable or not. The calculated effect size of the independent variables on the dependent ones were compared with the standard acceptable  $f^2$  values. As was stated in Chapter 5.2.2,  $f^2$  of .02, .15 and .35 represented small, medium and large effects at the structural level respectively. It can be seen from Table 21 that ALLEARCAP, MKTCAP, NPDCAP accounted for a medium effect size in explaining the SPEED of export expansion. ALLMGMTCAP accounted for a small effect size. Regarding success, ALLEARCAP indicated a large effect size in explaining the variance of SUCCESS. The effect of NPDCAP on SUCCESS was negative. This will be further verified when testing the individual hypotheses.

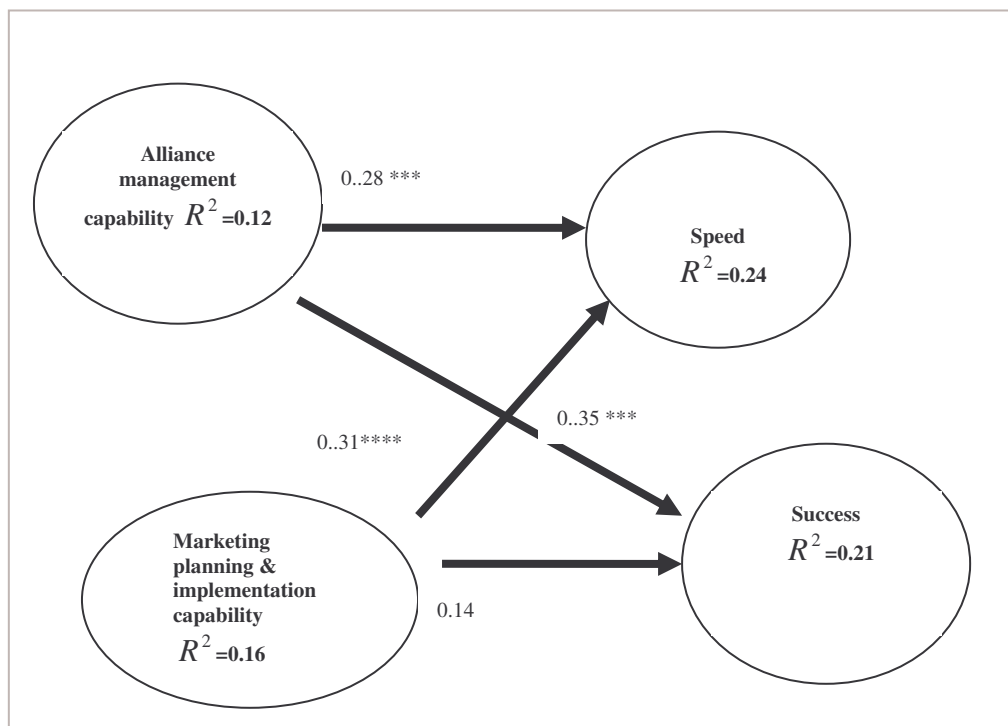
Overall, the measurement model indicated significant capability in explaining the variance in the latent dependent variables according to the standard accepted parameters of the PLS algorithm. Next, the individual structural relationships between the latent independent and latent dependent variables are analyzed.

## 6.7 Analyzing the individual structural models

This section aims to test the individual hypotheses. From the preliminary empirical analysis of the study, market knowledge competence was organized into customer and experiential knowledge. For the main empirical analysis, both kinds of knowledge were assumed to give rise to different export expansion capabilities which were hypothesized to impact on the speed and success of export expansion. Based on the proposed hypothetical relationships, two structural models demonstrating the relationships between export expansion capabilities and the speed and success of export expansion were developed: a) experiential knowledge export expansion and b) customer knowledge and export expansion. Both models were tested individually for the speed and success of export expansion. To test the individual structural model, the same procedures of reliability and validity of the models and assessment of the structural model were followed, as was presented in Chapter 5.2.

6.7.1 *Experiential knowledge and export expansion*

From the analysis of the preliminary case studies, it was revealed that experiential knowledge in the domain of alliance management and foreign marketing may give rise to capabilities in these areas. The capabilities of alliance management (ALLMGMTCAP) and the marketing planning and implementation capability (MKTCAP) were linked to export expansion. This model consisted of four structural paths: from the ALLMGMTCAP to SPEED, ALLMGMTCAP to SUCCESS, MKTCAP to SPEED and MKTCAP to SUCCESS. The structural path model for hypotheses 1a and 1b and 2a and 2b is shown in Figure 18.



**Figure 18.** Structural path model for hypotheses 1 and 2 (a and b).

\*\* show significance at < 0.05 level; \*\*\* show significance at < 0.01 level

Speed was measured in terms of how satisfied firms were in the timely execution of the following activities: being ahead of key competitors, capturing the key export market, introducing the right product to customers when they needed it and entering into a market at a time when profit margin opportunities were still available. In this section, the structural model related to experiential knowledge and the success of export expansion is presented. Success was measured with SUCCESS of export expansion in terms of financial indicators as well as the firm's satisfaction with product performance, managing the timeframe for the overall

project, relationships with alliances in the foreign market and the performance of the firm.

The measurement model was tested by examining a) internal consistency b) convergent validity and c) discriminant validity. For the reliability assessment of this model the internal consistency of individual items as well as constructs was analyzed first. The individual item loadings and the composite reliability of the reflective latent constructs are shown in Table 22.

**Table 22.** Loadings, cross loadings and the composite reliability of the structural relationship

CONSTRUCT/ INDICATOR	MKTCAP $\rho_c = 0.85$ AVE= 0.59	ALLMGMT CAP $\rho_c = 0.77$ AVE= 0.66	SPEED $\rho_c = 0.84$ AVE= 0.57	SUCCESS $\rho_c = 0.89$ AVE= 0.43
MKTSTRAT	<b>0.861</b>	0.021	0.296	0.131
MKTRESOU	<b>0.899</b>	-0.164	0.238	0.046
MKTPRSNL	<b>0.661</b>	-0.058	0.171	0.104
RLATNIMP	-0.146	<b>0.819</b>	0.204	0.327
RLAHELP	-0.014	<b>0.852</b>	0.253	0.336
RLAPBS	0.006	<b>0.864</b>	0.240	0.246
LONGTERM	-0.005	<b>0.880</b>	0.192	0.309
TARSAVOL	-0.013	<b>-0.545</b>	-0.136	-0.172
FUTRPERF	0.169	<b>0.770</b>	0.231	0.279
RPLACMNT	-0.071	<b>-0.437</b>	-0.117	-0.101
AHEADCOM	0.165	0.092	<b>0.647</b>	0.278
KYEXPMKT	0.232	0.315	<b>0.803</b>	<b>(0.602)</b>
PRFTOPPO	0.256	0.219	<b>0.800</b>	0.439
RIGTPRDT	0.157	0.149	<b>0.764</b>	0.450
ALLIANCE	0.165	0.280	0.274	<b>0.536</b>
MKTSHARE	0.004	0.239	0.432	<b>0.765</b>
OVRALPER	0.011	-0.044	0.459	<b>0.501</b>
PERFCOM	0.037	0.123	0.473	<b>0.527</b>
PRDTDELV	-0.146	0.167	0.396	<b>0.777</b>
PRFTMRGN	-0.033	0.200	0.494	<b>0.782</b>
PRTNRDEV	0.051	0.300	0.396	<b>0.576</b>
ROA	-0.023	0.262	0.326	<b>0.713</b>
ROI	0.0166	0.221	0.316	<b>0.718</b>
SALESOBJ	0.084	0.143	0.474	<b>0.800</b>
TIMEFRME	0.248	0.113	0.487	<b>0.734</b>

The items RPLACMNT and TARSAVOL were dropped from the scale because of negative loadings. All other items for both ALLMGMTCAP and MKTCAP indicated  $\geq 0.5$  loadings. The composite reliability for all the reflective latent



constructs was  $\geq 0.7$ . Thus, all the reflective constructs showed good internal consistency of measures.

The values for average variance extracted demonstrated that both the latent independent variables captured 59 % and 66 % variance from their indicators respectively, whereas the latent dependent variables of SPEED and SUCCESS captured 57% and 43 % respectively. Further, the cross loadings of the latent variables indicated that all the indicators except one loaded higher on their respective latent variables than the other blocks in the model. KYEXPMKT from the construct of SPEED loaded high on the construct of SUCCESS indicating issues with discriminant validity. This is shown in brackets and bold in Table 22. The AVEs and the cross loadings are shown in Table 22.

The discriminant validity of the model showed that all the square roots of the AVEs of the latent variables were larger than the correlations among the latent variables. This is shown in Table 23. The correlation between speed and success was only slightly lower than the square root of the AVE of the construct of SUCCESS. This could have been fixed if the item KYEXPMKT was removed. This item from SPEED loaded higher on SUCCESS as mentioned above. However, as the correlation value for SPEED was still lower than the square root of the AVE of the construct of SUCCESS, and as there are no clear guidelines in literature as to how much greater the AVE squared along the diagonal should be, it was accepted as thus. Therefore, the structural model demonstrated internal consistency at the standard levels of indicator reliability and construct reliability, convergent validity and discriminant validity.

**Table 23.** Inter-construct correlations among the reflective constructs and the AVE squared along the diagonal

Latent variables	ALLMGMTCAP	MKTCAP	SPEED	SUCCESS
ALLMGMTCAP	<b>0.81</b>			
MKTCAP	0.070	<b>0.76</b>		
SPEED	0.263	0.299	<b>0.75</b>	
SUCCESS	0.347	0.118	0.613	<b>0.655</b>

The analysis of  $R^2$  of the latent dependent variables SPEED and SUCCESS demonstrated moderate explanatory power of the model. Further, the redundancy indexes  $Q^2$  indicated that both the latent dependent variables demonstrated predictive relevance of the model. The effect size of the model indicated that ALLMGMTCAP at the structural level had the largest effect on the latent de-

pendent variable of SUCCESS and that MKTCAP had the largest effect on SPEED.  $R^2$ ,  $Q^2$  and  $f^2$  are presented in Table 24.

**Table 24.**  $R^2$ ,  $Q^2$ , and  $f^2$  for hypotheses 1 and 2 (a and b)

Latent variables	$R^2$	$Q^2$	$f^2$ SPEED	$f^2$ SUCCESS
SPEED	0.24	0.035	-	-
SUCCESS	0.21	0.030	-	-
ALLMGMTCAP	0.12		0.28	0.35
MKTCAP	0.16		0.31	0.14

The significance of the structural relationships was assessed on the basis of the statistical significance of path coefficients using t-tests. The observed probabilities of the t-values were compared to the standard significance levels of probability. Furthermore, the confidence intervals and t-values for individual path coefficients were assessed. Path coefficients for the sample and resample in this case were created by the bootstrap.

The first structural relationship between ALLMGMTCAP and SPEED was highly significant ( $\beta=0.28$ ;  $t=2.59$ ;  $p<0.05$  and  $>0.01$ ). The observed probability was closer to 0.01 significance level of  $p=0.01$ . The first structural relationship was captured in terms of hypothesis 1a, which stated that the alliance management capability of an exporting firm will have a positive relationship with the speed of export expansion. Thus, hypothesis 1a was accepted at the significance level of 99 %. The second relationship between ALLMGMTCAP and SUCCESS was also highly significant ( $\beta=0.35$ ;  $t=2.06$ ;  $p<0.05$ ). The second structural relationship was captured in terms of hypothesis 1b, which stated that the alliance management capability of an exporting firm will have a positive relationship with the success of export expansion. Thus, hypothesis 1b was accepted at an observed significance level of 95 %.

An analysis of each of the t-values for ALLMGMTCAP with both the dependent variables revealed that commitment from the firms in jointly sharing the problems and helping the alliance relationships significantly impacted on the speed of export expansion. Maintaining a long-term relationship with alliances was considered important in gaining a better understanding of the market. An analysis of t-values for individual indicators suggested that a firm's ability to share in the problems that arise in the course of dealing with major distributors contributed more

on the success of export expansion. Moreover, the commitment to improvement that could benefit the relationship with a major distributor as a whole had a greater impact on success than simply maintaining a long-term relationship with a foreign distributor.

The third structural relationship between MKTCAP and SPEED of export expansion ( $\beta = 0.31$ ;  $t = 3.34$ ;  $p = 0.001$ ) was also highly significant. This was captured in terms of hypothesis 2a and stated that the marketing planning and implementation capability of an exporting firm will have a positive relationship to the speed of export expansion. Thus, hypothesis 2a was accepted at an observed significance level of 99 %.

The fourth structural relationship between MKTCAP and SUCCESS of export expansion ( $\beta = 0.14$ ;  $t = 0.62$ ;  $p > 0.05$ ) was positive but statistically insignificant. The path coefficient was also lower than the standardized beta coefficient of 0.20. This can be interpreted as marketing planning and implementation capability that did not affect the success of export expansion, even though the ability of the firm to effectively translate planned export marketing strategies into actions was significant at  $p < 0.05$  and  $> 0.01$  significance level. This relationship in this model was captured in terms of hypothesis 2b and stated that the marketing planning and implementation capability of an exporting firm will have a positive relationship to the success of export expansion. Thus hypothesis 2b was not supported.

### 6.7.2 *Customer knowledge and export expansion*

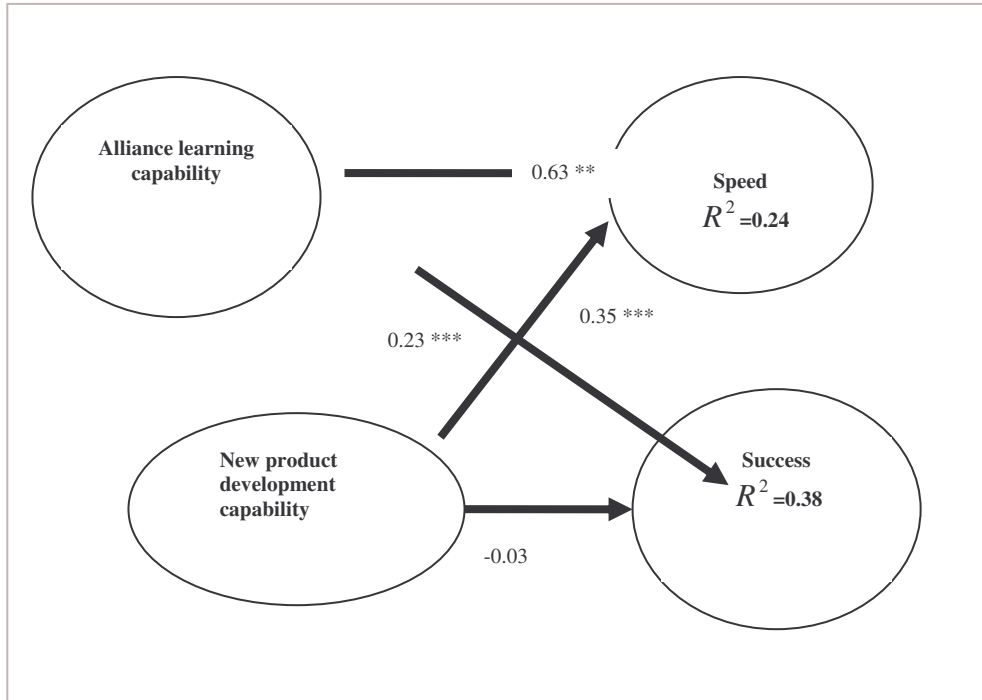
In this section the structural model related to customer knowledge and the speed and success of export expansion is presented. See Figure 19.

In the theoretical discussion it was mentioned that export expansion capabilities of the alliance learning capability and new product development capability arising from customers' knowledge are positively related to SPEED and SUCCESS of export expansion. The model shows four structural relationships between the ALLEARCAP, SPEED and SUCCESS and between NPDCAP, SPEED and SUCCESS of export expansion.

As previously stated speed was measured in terms of how satisfied firms were in the timely execution of firstly, being ahead of key competitors; secondly, capturing the key export market; thirdly, introducing the right product to customers when they needed it and finally, entering into a market at a time when profit margin opportunities were still available. Success had been measured in terms of financial indicators as well as the firm's satisfaction with product performance,

managing the timeframe for the overall project, relationships with alliances in the foreign market and the performance of the firm.

The structural path model for hypotheses 3a and 3b and 4a and 4b is shown in Figure 19.



**Figure 19.** Structural path model for hypotheses 3 and 4 (a and b).

\*\* show significance at < 0.05 level; \*\*\* show significance at < 0.01 level

The measurement model was tested by examining a) internal consistency b) convergent validity and c) discriminant validity. Only on the scale of SUCCESS did the items such as COMPRDT, MKTSHARE, OVRALPER, PERFCOM, PRDDELV, PRFTMRGN, ROA, ROI and SALESOBJ not load with values  $\geq 0.50$ . The unreliable items were removed from the constructs for further analysis. The composite reliability for the reflective latent constructs was  $> 0.7$ . Thus, all the reflective constructs showed good internal consistency of measures. The values for the AVE demonstrated that the latent variables of NPDCAP captured 53 % of the valid variance from their indicators, whereas the latent variables of AL-LEARCAP captured 40 % of the variance. The latent dependent variables of SPEED and SUCCESS captured 58 % and 40 % of the variance respectively. The individual item loadings, composite reliability of the reflective latent constructs, the AVEs and the cross loadings are shown in Table 25.

**Table 25.** Loadings, cross loadings and the composite reliability of the structural relationship

CONSTRUCT/ INDICATOR	NPDCAP $\rho_c = 0.77$ AVE = 0.53	ALLEARCAP $\rho_c = 0.87$ AVE = 0.40	SPEED $\rho_c = 0.84$ AVE = 0.58	SUCCESS $\rho_c = 0.80$ AVE = 0.40
<b>SURPRDT</b>	<b>0.692</b>	0.278	0.340	0.102
<b>PRDTLEAD</b>	<b>0.762</b>	0.182	0.308	0.138
<b>PRDTADTG</b>	<b>0.731</b>	0.052	0.249	0.000
<b>LEARINVS</b>	0.173	<b>0.650</b>	0.253	0.288
<b>LEARABTY</b>	0.153	<b>0.659</b>	0.236	0.423
<b>LEARFUTR</b>	0.207	<b>0.592</b>	0.224	0.333
<b>INTERACT</b>	0.265	<b>0.653</b>	0.239	0.348
<b>DEPTALRT</b>	0.152	<b>0.500</b>	0.294	0.113
<b>MEETINGS</b>	0.245	<b>0.652</b>	0.296	0.306
<b>DOCUSHARE</b>	0.137	<b>0.567</b>	0.321	0.422
<b>PRTNRINF</b>	0.076	<b>0.650</b>	0.140	0.437
<b>PRTNRCHG</b>	0.184	<b>0.553</b>	0.069	0.338
<b>PRTNREXP</b>	0.113	<b>0.673</b>	0.161	<b>(0.558)</b>
<b>PRTNRKNO</b>	0.089	<b>0.690</b>	0.053	0.480
<b>AHEADCOM</b>	0.326	0.145	<b>0.700</b>	0.179
<b>KYEXPMKT</b>	0.329	0.361	<b>0.770</b>	<b>(0.504)</b>
<b>PRFTOPPO</b>	0.311	0.228	<b>0.773</b>	0.154
<b>RIGTPRDT</b>	0.312	0.238	<b>0.800</b>	0.191
<b>ALLIANCE</b>	0.090	<b>(0.517)</b>	0.261	<b>0.834</b>
<b>PRTNRDEV</b>	0.165	0.462	0.372	<b>0.737</b>
<b>TIMEFRME</b>	0.136	0.319	0.472	<b>0.507</b>

Two items from the constructs ALLEARCAP and SUCCESS shared loadings on each others' block, thus indicating that they refer to similar measures for both the constructs. For example, as can be seen from Table 23, the item of ALLIANCE from the construct of SUCCESS also loaded on the alliance learning capability. Similarly, the item PRTNREXP from the construct of ALLEARCAP also loaded on SUCCESS. Moreover, as in the previous model, the item KYEXPMKT from the construct of SPEED loaded on the construct of SUCCESS. These are shown as bold and in brackets in the loadings in column 3 and 5 of Table 25. However, the rest of the indicators loaded higher on their respective latent variables as compared to other blocks. This problem was taken care of by the average correlation values of the latent variables. The AVEs of all the latent variables were larger than the correlations among the latent variables. Thus, the discriminant validity of the model demonstrated significance at the acceptable threshold levels. See Table 26.

**Table 26.** Inter-construct correlations among the reflective constructs and the AVE squared along the diagonal

Latent variables	ALLEARCAP	NPDCAP	SPEED	SUCCESS
ALLEARCAP	<b>0.63</b>			
NPDCAP	0.254	<b>0.72</b>		
SPEED	0.330	0.419	<b>0.76</b>	
SUCCESS	0.521	0.122	0.357	<b>0.63</b>

$R^2$  of the latent dependent variables showed that the model accounted for 22 % of the variance in SPEED and 38 % of the variance in SUCCESS. The  $Q^2$  redundancy indexes (column 3 of Table 27) greater than 0, indicated the predictive relevance of the model. The total effects  $f^2$  of the independent latent variables on the dependent variables indicated that ALLEARCAP had medium impact (23%) on SPEED, whereas more than a large effect (63% as compared to the accepted standard of 35%) on SUCCESS of export expansion. NPDCAP on the other hand, had a large effect on SPEED and had no effect on SUCCESS of export expansion. These effects will be later confirmed in testing the individual hypotheses.  $R^2$ ,  $Q^2$  and  $f^2$  are presented in Table 27.

**Table 27.**  $R^2$ ,  $Q^2$  and  $f^2$  for hypotheses 3 and 4 (a and b)

Latent variables	$R^2$	$Q^2$	$f^2$ SPEED	$f^2$ SUCCESS
SPEED	0.24	0.056	-	
SUCCESS	0.38	0.148		
ALLEARCAP	-	-	0.23	0.63
NPDCAP	-	-	0.35	-0.03

Similar to the previous structural model, the assessment of the significance of the structural relationships was carried out by examining the beta path coefficients, t-values and the probability of the t-values. Furthermore, the confidence interval and t-values for individual path coefficients were assessed. Path coefficients for the sample and resample in this case were also created by the bootstrap.

The first structural relationship between ALLEARCAP and SPEED was positively significant ( $\beta = 0.23$ ;  $t = 2.38$ ;  $p = 0.01$ ). It was captured in terms of hypothesis 3a, which stated that the alliance learning capability of an exporting firm

will have a positive relationship to the speed of export expansion. Thus, hypothesis 3a was supported at an observed significance level of 99 %. Learning the needs of the customers from alliances rated significantly on the scale. The mechanisms of inter-firm level knowledge sharing of customer-specific and market-related information through meetings, document sharing and interaction loaded significantly. Regarding the contribution of partnership-related activities in understanding the needs of the customers, market knowledge possessed by foreign partners was most important for the export firm.

The second structural relationship between ALLEARCAP and SUCCESS was statistically significant ( $\beta = 0.63$ ;  $t=5.34$ ;  $p=0.001$ ). This relationship was captured in terms of hypothesis 3b, which stated that the alliance learning capability of an exporting firm will have a positive relationship with the success of export expansion. Thus, hypothesis 3b was accepted at an observed significance level of more than 99 %.

The third structural relationship between NPDCAP and SPEED of export expansion ( $\beta = 0.35$ ;  $t= 4.154$   $p < 0.01$ ) was also significant. New product development capability significantly influenced the speed of export expansion when the firms were first involved in the export market. The competitive advantage of the product in satisfying customer needs which were not satisfied by a competitor's product was also significant. This structural relationship was captured in terms of hypothesis 4a and stated that the new product development capability of an exporting firm will have a positive relationship to the speed of export expansion. Thus, hypothesis 4a was accepted at the observed significance level of 99 %.

Finally, the fourth structural relationship between NPDCAP and SUCCESS of export expansion ( $\beta = -0.03$   $t= 0.23$   $p < 0.00$ ) was negative and insignificant. This also confirmed that NPDCAP had no total effect on SUCCESS of export expansion. This hypothesis was rejected. The structural relationship in this model was captured in terms of hypothesis 4b and stated that new product development capability of an exporting firm will have a positive relationship to the success of export expansion. As the relationship was insignificant, hypothesis 4b was rejected.



## 6.8 Contextual factors and export expansion capabilities

In this section, the structural model related to export expansion capabilities and their relationship with the contextual factors of entrepreneurial orientation (ENTORINT) and barriers to market knowledge (BARRKNOW) is analyzed. The capabilities of export expansion were hypothesized with the contextual factors of entrepreneurial orientation and barriers to market knowledge. The barriers to knowledge sharing were measured at the firm- as well as market levels.

At the firm level barriers were related to new product development and alliance learning capabilities. However, at the market level barriers were related to alliance management and marketing planning and implementation capabilities. This model had eight structural paths: entrepreneurial orientation was linked to all the four kinds of export expansion capabilities of alliance management, alliance learning, marketing planning and implementation and new product development capabilities. Similarly, barriers to market knowledge acquisition were linked to the same afore-mentioned capabilities.

For the reliability and validity assessment of the reflective construct of this model (BARRKNOW and ENTORINT), the individual items loadings were assessed. On the scale of BARRKNOW, items such as MKTKNOW, PRDTKNOW, SLOWINDS and WRNGDIST loaded  $< 0.5$  of the accepted standard. These items were removed from the scale for further analysis. See Table 28.

The composite reliability for all the reflective latent constructs of BARRKNOW and ENTORINT showed good internal consistency of measures. As can be seen from Table 28 the AVEs for ENTORINT and BARRKNOW explained 40 % and 24 % of the variance. Thus, the prediction impact of the model was quite moderate for export expansion related-capabilities. As shown in Table 28, all the indicators loaded higher on their respective latent variables as compared to other blocks this verified the discriminant validity of the latent constructs. Thus, the items measured their own respective constructs.

**Table 28.** Loadings, cross loadings and the composite reliability of the structural relationship

CONSTRUCT/ INDICATOR	MKT CAP $\rho_c =$ 0.84 AVE= 0.65	BAR- RKNOW $\rho_c = 0.61$ AVE= 0.24	EN- TORIN T $\rho_c =$ 0.75 AVE= 0.40	ALLEAR CAP $\rho_c = 0.86$ AVE= 0.40	ALLM GMT CAP AP $\rho_c =$ 0.76 AVE= 0.54	NPDC AP $\rho_c =$ 0.77 AVE= 0.53
MKTSTRAT	<b>0.879</b>	-0.372	0.116	0.135	0.014	0.173
MKTRESOU	<b>0.907</b>	-0.285	0.022	0.094	0.094	0.086
MKTPRSNL	<b>0.618</b>	-0.170	-0.052	0.137	0.137	0.207
INTLKNOW	-0.174	<b>0.659</b>	-0.185	-0.313	-0.313	-0.274
KNOWSHAR	-0.213	<b>0.697</b>	-0.053	-0.308	-0.308	-0.239
LACKTIME	-0.321	<b>0.610</b>	-0.224	-0.188	-0.188	-0.179
RLATNMGT	-0.158	<b>0.500</b>	-0.007	-0.100	-0.100	-0.103
SALDOMKT	-0.236	<b>0.530</b>	0.551	-0.159	-0.167	-0.120
COMVISN	-0.045	-0.189	<b>0.551</b>	0.129	0.190	0.063
PRDTEXP	0.084	-0.206	<b>0.770</b>	0.476	0.247	0.092
ROUTINE	0.133	-0.213	<b>0.756</b>	0.338	0.338	0.109
TMTENCOR	-0.060	-0.035	<b>0.508</b>	0.390	-0.094	-0.005
TMTKNSHA	-0.014	0.018	<b>0.502</b>	0.227	0.227	-0.042
DEPTALRT	0.073	-0.300	0.271	<b>0.598</b>	0.174	0.150
DOCUSHA	0.174	-0.214	0.054	<b>0.500</b>	0.089	0.115
INTERACT	0.293	-0.327	0.360	<b>0.719</b>	0.174	0.265
LEARABTY	0.091	-0.208	0.378	<b>0.776</b>	0.223	0.130
LEARFUTR	-0.081	-0.222	0.447	<b>0.726</b>	0.153	0.190
LEARINVS	0.113	-0.283	0.321	<b>0.797</b>	0.161	0.174
MEETINGS	0.054	-0.201	-0.201	<b>0.633</b>	0.111	0.206
PRTNREXP	0.168	-0.210	0.138	<b>0.500</b>	0.410	0.116
PRTNRINF	0.128	-0.040	0.251	<b>0.500</b>	0.402	0.091
PRTNRKNO	0.035	-0.044	0.246	<b>0.527</b>	0.335	0.084
RLATNIMP	-0.152	-0.158	0.138	0.234	<b>0.861</b>	0.351
RLAHELP	-0.014	-0.227	0.185	0.391	<b>0.891</b>	0.234
RLAPBS	0.004	-0.333	0.095	0.357	<b>0.941</b>	0.393
LONGTERM	-0.123	-0.230	0.111	0.248	<b>0.838</b>	0.398
SURPRDT	-0.034	-0.204	0.148	0.280	0.236	<b>0.588</b>
PRDTLEAD	0.247	-0.318	0.012	0.191	0.284	<b>0.848</b>
PRDTADTG	0.130	-0.164	0.056	0.083	0.083	<b>0.733</b>

The discriminant validity of the model showed that all the square roots of the AVEs of the latent variables were larger than their correlations with each other. This is shown in Table 29.

**Table 29.** Inter-construct correlations among the reflective constructs and the AVE squared along the diagonal

Latent variables	ALLEAR CAP	ALLMGMT CAP	BARR KNOW	ENTO RINT	MKT CAP	NPD CAP
ALLEARCAP	<b>0.635</b>					
ALLMGMTCAP	0.347	<b>0.734</b>				
BARRKNOW	-0.350	-0.306	<b>0.489</b>			
ENTORINT	0.453	-0.148	0.148	<b>0.635</b>		
MKTCAP	0.145	-0.054	-0.359	0.057	<b>0.806</b>	
NPDCAP	0.259	0.367	-0.332	0.087	0.180	<b>0.728</b>

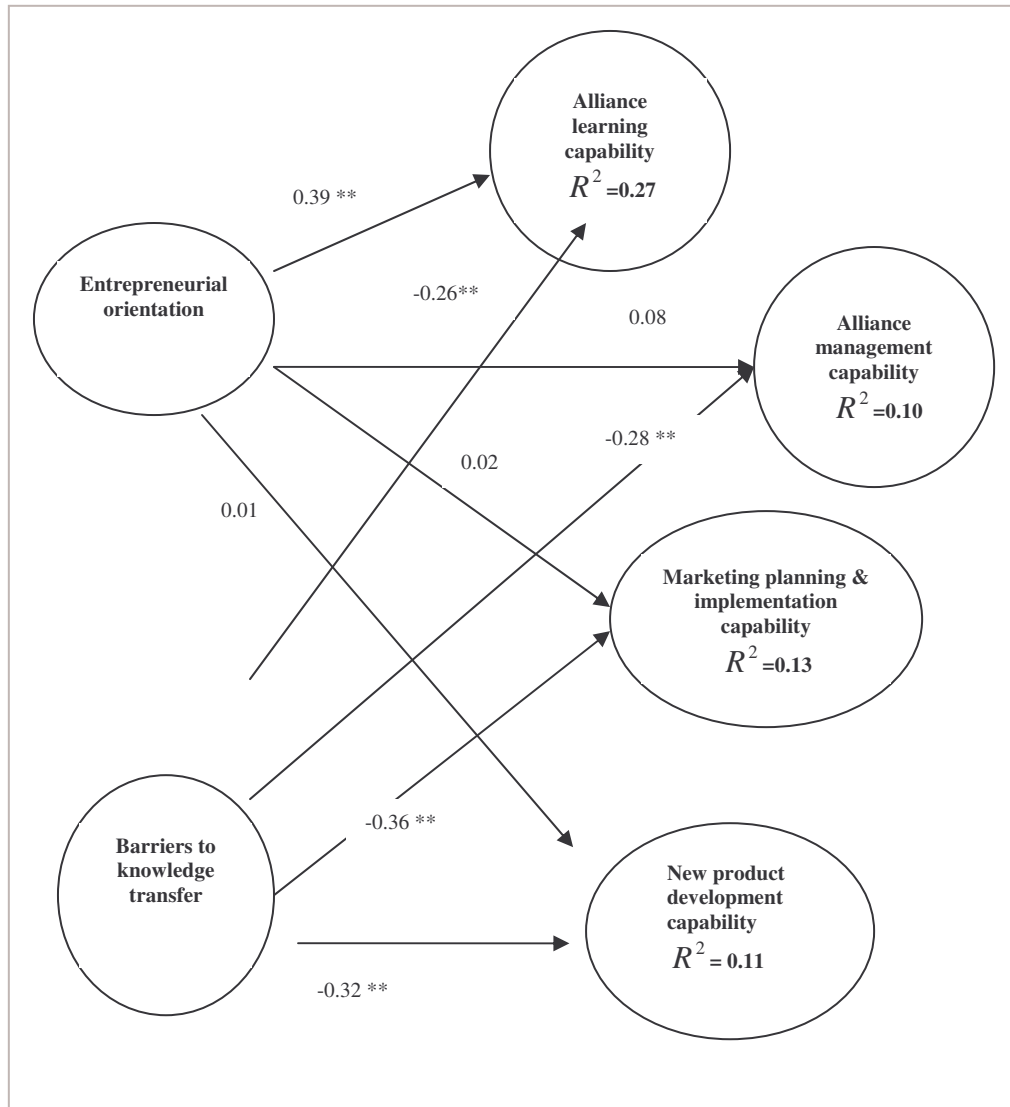
The analysis of  $R^2$  of the dependent latent variables showed that the model accounted for 27, 10, 13 and 11 % of the variance in the dependent variables of ALLEARCAP ALLMGTCAP, MKTCAP and NPDCAP respectively. The redundancy indexes  $Q^2$  greater than zero also demonstrated predictive relevance of the structural relationships. This is shown in Table 30 columns 2 and 3.

**Table 30.**  $R^2$ ,  $Q^2$  and  $f^2$  for hypotheses 5 and 6

Latent variable	$R^2$	$Q^2$	$f^2$ BAR- RKNOW	$f^2$ ENTORINT
ALLEARCAP	0.27	0.045	-0.26	0.39
ALLMGTCAP	0.10	0.031	-0.28	0.08
MKTCAP	0.13	0.080	-0.36	-0.02
NPDCAP	0.11	0.054	-0.32	0.01

In evaluating the significance of the total effects of  $f^2$  of the latent independent variables of BARRKNOW and ENTORINT, the total effect size indicated that BARRKNOW demonstrated negative effects on all the export expansion capabilities. The effect was largest for ALLEARCAP, ALLMGMTCAP, NPDCAP and MKTCAP respectively. This was shown in Table 28 column 4. As assumed in hypothesis 6, barriers to knowledge confirmed a negative total effect on all the export expansion capabilities. On the other hand, ENTORINT demonstrated a large effect on ALLEARCAP, a moderate effect on MKTCAP and a small effect on NPDCAP and ALLMGMTCAP.

To analyze the individual structural analysis bootstrapping was conducted in order to find estimates of standard errors for testing the statistical significance of path coefficients using t-values. The structural path model for hypotheses 5 and 6 is shown in Figure 20.



**Figure 20.** Structural path model for hypotheses 5 and 6.

\*\* show significance at < 0.05 level; \*\*\* show significance at < 0.01 level

The relationship between ENTORINT and ALLEARCAP ( $\beta = 0.39$ ;  $t=2.6$ ;  $p=0.00$ ) was positive as was assumed in the theory of the study. The relationships between ENTORINT and ALLMGMTCAP ( $\beta = 0.08$   $t=0.44$ ;  $p>0.05$ ); EN-

TORINT and MKTCAP ( $\beta = -0.02$ ;  $t = 0.15$ ;  $p > 0.05$ ), ENTORINT and NPDCAP ( $\beta = 0.01$ ;  $t = 0.10$ ;  $p > 0.05$ ) turned out to be statistically insignificant. However, the beta coefficients for ALLMGMTCAP and NPDCAP were positive. The structural relationship in this model was captured in terms of hypothesis 5, which stated that the entrepreneurial orientation of an exporting firm will have a positive relationship with the export expansion capabilities. As there was only a positive and significant relationship seen between ENTORINT and ALLEARCAP, hypothesis 5 was partially supported.

All the four structural paths from BARRKNOW to ALLMGMTCAP ( $\beta = -0.28$ ;  $t = 1.88$ ;  $p > 0.10$ ), BARRKNOW to MKTCAP ( $\beta = -0.36$ ;  $t = 3.41$ ;  $p = 0.00$ ); BARRKNOW to ALLEARCAP ( $\beta = -0.26$ ;  $t = 1.51$ ;  $p > 0.10$ ), and BARRKNOW to NPDCAP ( $\beta = -0.32$ ;  $t = 3.32$ ;  $p = 0.00$ ) were significant. The algebraic signs of the beta coefficients further confirmed the negative relationship. The first structural relationship was captured in terms of hypothesis 6, which stated that the barriers to market knowledge acquisition will have a negative relationship with export expansion capabilities. Thus, hypothesis 6 was accepted.

## 6.9 Summary of the results

In the structural model 16 structural paths and six hypotheses were tested altogether. Four structural paths were related to export expansion capabilities and the speed of export expansion, whereas four structural paths were related to export expansion capabilities and the success of export expansion. Regarding both of the contextual factors, each of them consisted of four structural paths relating to export expansion capabilities.

As can be seen from Table 31, out of the total of sixteen structural paths, ten were fully supported, one was partially confirmed and four were rejected. All four kinds of export expansion capabilities positively and significantly affected the speed of export expansion. However, the success of export expansion demonstrated a positive relationship only with the alliance learning and alliance management capabilities. The export expansion capability of new product development had a negative effect on the success of export expansion.

**Table 31.** Results of the study

Hypothesis	Standard path coefficient	T-value	p-value	Result of test
<b>1a</b> - The alliance management capability of an exporting firm will have a positive relationship to export expansion speed.	0.28	2.59	0.01	accepted
<b>1b</b> - The alliance management capability of an exporting firm will have a positive relationship to export expansion success.	0.35	2.06	0.04	accepted
<b>2a</b> - The marketing planning and implementation capability of an exporting firm will have a positive relationship to export expansion speed.	0.31	3.34	0.053	accepted
<b>2b</b> - The marketing planning and implementation capability of an exporting firm will have a positive relationship to export expansion success.	0.14	0.62	> 0.05	<b>rejected</b>
<b>3a</b> - The alliance learning capability of an exporting firm will have a positive relationship to export expansion speed.	0.23	2.38	0.01	accepted
<b>3b</b> - The alliance learning capability of an exporting firm will have a positive relationship to export expansion success.	0.63	5.34	> 0.001	<b>accepted</b>
<b>4a</b> - The new product development capability of an exporting firm will have a positive relationship to export expansion speed.	0.35	4.15	> 0.01	accepted
<b>4b</b> - The new product development capability of an exporting firm will have a positive relationship to export expansion success.	-0.03	0.23	0.00	<b>rejected</b>
<b>5</b> - The entrepreneurial orientation of an exporting firm will have a positive relationship to export expansion capabilities.				
ENTORINT→ALLEARCAP	0.39	2.6	0.01	accepted
ENTORINT→ALLMGMTCAP	0.08	0.45	> 0.05	<b>rejected</b>
ENTORINT→MKT CAP	-0.02	0.15	> 0.05	<b>rejected</b>
ENTORINT→NPDCAP	0.01	0.10	> 0.05	<b>rejected</b>
<b>6</b> - Barriers to market knowledge of an exporting firm will have a negative relationship to export expansion capabilities.				
BARRKNOW→ALLEARCAP	-0.26	1.39	0.20	accepted

BARRKNOW→ALLMGMTCAP	-0.28	1.56	0.20	accepted
BARRKNOW→MKTCAP	-0.36	3.41	0.00	accepted
BARRKNOW→NPDCAP	-0.32	3.32	0.00	accepted

Of the contextual factors, barriers to market knowledge acquisition negatively related to all the export expansion capabilities as depicted in the theory of the study. Interestingly, the entrepreneurial orientation of the firm could only positively relate to the alliance learning capability and had no effect on the alliance management, new product development or marketing planning and implementation capabilities.



## 7 SUMMARY AND DISCUSSION

After briefly presenting the summary of the study in Section 7.1, this chapter will evaluate the key empirical findings and discuss the results. Next, conclusions of the study are discussed in relation to the previous studies in Section 7.2. Afterwards, the theoretical and managerial implications are given in Section 7.3. This is followed by the limitations and suggestions for future research.

### 7.1 Key results of the study

Based on the research questions of the study, the empirical data collection followed qualitative as well as quantitative research methodology. The aim of the qualitative analysis (the first research question) was to explore market knowledge competence as an intangible resource. In analyzing this research question, the study focused on identifying specific types of market knowledge that constituted the market knowledge competence of firms, the link between knowledge and export expansion capabilities and the factors that facilitated and hindered market knowledge acquisition and internalization. Foreign market knowledge development was considered as the market knowledge competence of a firm because the complex process of acquiring and internalizing external knowledge and transforming it into export expansion capabilities resulted in intangible, inimitable and robust knowledge.

The aim of the quantitative analysis (the second research question) was to analyze to what extent market knowledge competence organized into export expansion capabilities influenced the speed and success of export expansion. The quantitative analysis considered export expansion from two dimensions: speed and success. Speed was perceived as relative time duration that managers expect for achieving the targeted sales. Speed was measured as the relative satisfaction of a firm in capturing a key export market, being ahead of its competitors in producing the right product when customers needed it and entering the export market when profit margin opportunities were still available. Thus, the speed of export expansion measured how timely export activities were performed compared to the stated objectives of the firm. Success on the other hand was perceived as achieving continued lead sales in foreign markets. It was measured through the subjective satisfaction of firms with financial indicators as well as with their current state of customer knowledge and experiential knowledge in the areas of product development, management of the time frame of the overall project for product development and the launch on the foreign market. Moreover success was also

assessed through the firm's satisfaction with alliances in the foreign market and by the overall and specific performance of the firm relative to competition.

The main findings of the qualitative analysis revealed experiential knowledge and the knowledge of customers' needs (customer knowledge) as the forms of knowledge particularly relevant to how firms expanded their exports. Both kinds of knowledge were found to impact on export expansion capabilities. In the context of software development firms, four export expansion capabilities were identified: alliance management, alliance learning, new product development and marketing planning and implementation. Further, it was revealed that market knowledge acquisition and the transformation of knowledge into export expansion capabilities occurred simultaneously only when the knowledge acquisition and utilization mechanisms were in place. The complexity of the process in turn influenced the speed and success of export expansion, as the utilization of knowledge was attributed to export-related capability development. Barriers to market knowledge were assumed to negatively influence export expansion capability development. Furthermore, through the analysis of the case studies the entrepreneurial orientation of the firm arose as an important facilitating factor in the development of export expansion capabilities. The findings of the preliminary qualitative empirical analysis served as a starting point for the quantitative part of the study.

First of all, the results and findings of the relationship between export expansion capabilities and the speed of export expansion are stated.

Although all the export expansion capabilities positively and significantly influenced the speed of export expansion, new product development ( $b=0.35$ ) and alliance management capabilities ( $b=0.35$ ) were found to have a more significant influence on the speed of export expansion than marketing planning and implementation ( $b=0.31$ ) and alliance learning ( $b=0.23$ ) capabilities. One possible explanation could be that these two capabilities, new product development and alliance management, can only be said to influence the export expansion objectives when firms enter a foreign market. The software development firms would only go abroad when their software products had a clear competitive advantage and further when their products were more beneficial to the user than competitors' products. By having a sound product the firms achieved their pre-planned export objective in the time period set in their export strategies. Thus, new product development and alliance management capabilities significantly supported foreign market entry, when profit margin opportunities were still available and the firms had a product with an obvious competitive advantage. However, to then sell the product in foreign markets the firms were dependent on their distributors. Due to this reason the alliance management capability can also be said to be significant

in supporting foreign market entry. By managing the problems and conflicts between the firms and their partners, the firms in turn managed to capture the export market as planned. The mutual problem sharing between the firms and their partners also indicated the firms' commitment to the solving of problems that arise and moreover the importance of the alliance management capability. It can also be concluded that alliance management and new product development capabilities were complementary to each other in influencing the speed of export expansion.

Of the other two capabilities, the marketing planning and implementation capability ( $b=0.31$ ) had a greater influence than the alliance learning capability ( $b=0.23$ ) on the speed of export expansion. In this study the marketing planning and implementation capability was related to the choice of the export marketing strategy, specifically the planning and implementation of this strategy in the foreign market. As it appeared non-significant for the success of export expansion, it can be concluded that the relevant skills and knowledge to plan and implement the marketing strategy would be critically needed for foreign market entry objectives. Thus, firms possessing prior experience in the area of export marketing strategies may outperform those firms lacking such experience. Furthermore, firms which can utilize their previous experiences accumulated from export operations and the planning of export marketing strategies for their current markets may be at an advantage over their competitors in producing the right product for the market when customers needed it.

As the alliance learning capability had the least influence on the speed of export expansion as compared to the other three capabilities, it can be fairly concluded that speed was related to capturing the expected sales targets soon after entering a foreign market. At the early time of entering a market, the firms had to utilize previously generated knowledge rather than learning new knowledge of the market. Thus, capabilities which generated results based on the previous knowledge of the firm turned out to be more significant at the foreign market entry stage. The alliance learning capability was indeed important, but not as much as the other three capabilities when considering new market entry.

Now, the results and findings of the relationship between export expansion capabilities and the success of export expansion are stated.

Interestingly, among all of the capabilities, the alliance learning capability ( $b=0.63$ ) was found to have the most significant influence on the success of export expansion. The alliance management capability, on the other hand ( $b=0.28$ ), was found to have the second most significant influence. However, the results for marketing planning and implementation and new product development capabilities were contradictory to the assumptions of the study. Of these two, the market-

ing planning and implementation capability had a positive but statistically non-significant influence on the success of export expansion, whereas the new product development capability was negatively related.

The significant relationship between the alliance learning capability and the success of export expansion emphasized the importance of learning the knowledge of customer needs through alliances ( $b=0.83$ ) in foreign markets. In the theory of the study the alliance learning capability was considered as a combination of the learning ability of a firm and the extent to which local partners shared knowledge of customer needs for the product. Internal knowledge sharing mechanisms were also considered important for the utilization of knowledge acquired from partners in developing strategies for export markets. The positive and significant relationship between the alliance learning capability and success emphasized the importance of establishing firm-level knowledge sharing mechanisms and learning through alliances. Moreover, the highest degree of total effect of the alliance learning capability ( $f^2$  as 63 %) on the success of export expansion further confirmed the assertion in the theory of the study regarding the importance of knowledge acquisition and internalization mechanisms. These efficient mechanisms may in turn be related to the utilization of knowledge within the firm for capability development.

Regarding the relationship between the alliance management capability and the success of export expansion, even though the effect was moderate ( $b=0.28$ ), it indicated the dependency of the foreign firm on the local alliances for achieving continued lead sales in the market. As the marketing planning and implementation and new product development capabilities were not significant, it further emphasized the need to develop alliance learning and alliance management capabilities in the export market in order to attain continued lead sales. Due to both of these capabilities relating significantly to the success of export expansion, it can be concluded that market learning and the management of alliances are two important areas where firms must focus on developing capabilities in order to expand exports after entering a market. Further, as can be seen in Figure 21, the significant relationship of capabilities arising from experiential knowledge and the customer knowledge may also lead to the conclusion that both kinds of knowledge are important for export expansion.

Market knowledge competence							
		Experiential knowledge		Customer Knowledge			
		Alliance management capability	Market planning & implementation capability	New product development capability	Alliance learning capability		
<b>Speed</b>	X	X	X	X	X	<b>Speed</b>	
<b>Success</b>	X	-	-	X	<b>Success</b>		

**Figure 21.** Comparison of market knowledge competence on export expansion dimensions.

Furthermore, as shown in Figure 21, marketing planning implementation and new product development capabilities were significant only for the speed of export expansion and had no effect on the success of export expansion. However, both alliance management and learning capabilities were found to have significant effects on the speed as well as success of export expansion. This seems logical, as the speed of export expansion in real practice may indicate how sooner firms can capture the targeted number of lead sales in export markets. In situations when foreign market entry is through alliance (distributor) capabilities in the area of managing a distributor, a sound product for the international market and previous knowledge of export marketing strategies had a significant effect. However, to maintain and continuously expand the number of lead sales, the capabilities of alliance learning and alliance management were significant.

In sum, the findings of the study supported the construct of market knowledge competence and its component forms of knowledge on the basis of the conceptualization of export expansion as a result of a dynamic capability of a firm. The findings also provided insights into the importance of market knowledge competence, specifically linking it with the speed and success of export expansion. The positive relationship between market knowledge competence and export expansion supported the assumption of the study that in order to achieve export expansion objectives firms must emphasize the acquisition, utilization and integration of acquired market knowledge for the development of specific capabilities. Fur-

ther, to develop export expansion capabilities knowledge acquisition and internalization and mechanisms must be in place. Literature on the knowledge-based view and market orientation specifically emphasizes coordination and knowledge transfer mechanisms in the firm for the elimination of knowledge sharing barriers. The establishment of such mechanisms was not only found essential for the development of export expansion capabilities, but also for the integration of newly acquired knowledge from the markets as export expansion capabilities could vary from market to market. Thus, the sooner acquired knowledge was utilized and integrated into capabilities by using established mechanisms of knowledge sharing and transfer, the earlier firms achieved export targets after entering a foreign market and consequently the more successful they were in expanding exports.

Interestingly, the effects of entrepreneurial orientation on the development of export expansion capabilities were only positive on the alliance learning capability. Furthermore, entrepreneurial orientation had non-significant and negative relationships with alliance management, marketing planning and implementation and new product development capabilities. The significant relationship can again be attributed to the link between knowledge sharing and coordination mechanisms. This importance can further be accredited to the orientation of the top management team in emphasizing the significance of knowledge sharing in the firm's risk-taking behaviour, experimentation with products and giving employees the authority to make decisions. All these factors contributed positively towards the learning ability of the firm and further asserted the importance of firm- and market-level knowledge sharing. For this reason, the relationship between the alliance learning capability and success of export expansion was found to be positive with a significant influence on the overall model.

Of further interest, it was found that entrepreneurial orientation did not significantly influence alliance management, marketing planning and implementation and new product development capabilities. One potential explanation for this could be that these capabilities were not influenced by knowledge sharing mechanisms and were most likely based on the experiential knowledge and previous skills of the firm in these areas.

The above explanation, however, for the non-significant link between knowledge sharing mechanisms and export expansion capabilities was confirmed by the negative relationships between knowledge sharing barriers and export expansion capabilities development. Of all the barriers to knowledge sharing negatively influencing export expansion capabilities, the barriers to sharing market information within the firm was found to be most significant. Moreover, a firm's relatively little know-how in dealing with foreign operations, and to some extent its satis-



faction with local markets, were other barriers to knowledge sharing influencing export expansion capabilities.

Consistent with the findings of the study, the barriers to knowledge sharing most significantly influenced the alliance learning capability ( $b=-0.26$ ), the alliance management capability ( $b=-0.28$ ), the new product development capability ( $b=-0.32$ ) and lastly the marketing planning and implementation capability ( $b=-0.36$ ). In terms of the degrees of influence of the barriers to knowledge sharing with export expansion capabilities mentioned above, it can also be concluded that the alliance learning capability required the highest degree of knowledge sharing, the alliance management capability required the second highest and so on. As only the alliance learning and alliance management capabilities were positively related to the success of export expansion, this finding further emphasized that the dynamic influence of knowledge acquisition and utilization mechanisms are not only important for the development of export expansion capabilities, but also for further expansion into the foreign market.

## 7.2 The conclusions in relation to previous studies

In this study the first aim was to examine what intangible resources, specifically from the viewpoint of export expansion capabilities, were particularly relevant to how firms expanded internationally. In this objective the study extended previous research on the topic through empirical testing (Kogut and Zander 1992; Mitchell, Smith, Seawright and Morse 2000; Hitt et al. 2006; Sapienza, Autio, George and Zahra 2006). The second aim was to analyze how the above-mentioned intangible resources influenced the speed and success of export expansion. Relating to this, it demonstrated that export expansion capabilities had a strong impact not only on the early market entry, but also on the subsequent export expansion as well.

This study further attempted to extend existing theory in three ways. First of all, the phenomenon of organizational capabilities and their impact on export expansion was investigated further in order to analyze the multi-dimensionality of market knowledge competence and its influence on export expansion. This phenomenon already existed in literature with due stated importance (Toften and Olsen 2003). Second, the relationship between export expansion capabilities and their consequences on export expansion was straightforwardly analyzed. Third, even though there seems to be agreement that a relationship between organizational capabilities and international expansion exists (Hart and Tzokas 1999; Souchon and Diamantopoulos 1999), the empirical findings concerning the relationship are scarce. This was tested empirically.



Sapienza et al. (2006) call for testing their conceptual framework for the influence of internationalization on the survival and growth of firms. By building on the emerging literature on the dynamic capabilities view of the firm (Helfat and Peteraf 2003), their framework highlights the importance of capability building as a major driver of international market entry and subsequent survival. They have argued in their framework that dynamic capabilities do not inevitably confer sustained performance. However, they claim that during the early stages of internationalization, dynamic capabilities simultaneously decrease the probability of survival while increasing the probability of growth. This study empirically tests this assumption and provides insights into the influence of export expansion capabilities. In line with Sapienza et al. (2006), the study empirically tested international expansion in two dimensions: the speed and success. Speed can be interpreted here as the international entry and early survival in a new market, whereas success relates to subsequent growth in the foreign market. As mentioned before, alliance management, new product development and marketing planning and implementation capabilities significantly influenced the early stages of international expansion. However, for subsequent growth in the market, the alliance learning capability was significantly important. This supported Sapienza et al. (2006) and concluded that not necessarily all kinds of capabilities confer sustained performance at all times. However, some might be more significant than others.

Morgan et al. (2003) acknowledge that present literature on the knowledge-based view has focused too much on individual technical and scientific components of the knowledge bases of firms in dynamic industries. Furthermore, Morgan et al. (2003) emphasize that present literature largely ignores how information and experiential knowledge of firms enables them to architect marketing capabilities specifically in the important context of exporting. This study addresses this gap and the empirical findings support their results. Additionally, the results extend the findings further, as the marketing planning and implementation capability appeared as significant for the speed of export expansion only. This capability was statistically positive for the success of export expansion, but in a negative direction. Thus, the marketing planning and implementation capability could not be validated for subsequent export expansion in the context of this study.

Hitt et al. (2006) mention international market entry is based on firm-specific assets, yet few studies specify the most critical intangible resources for successful entry into markets. They examine only the human and relational capital for internationalization. The results of this study explicitly relate the firm-specific assets of export expansion capabilities and examine their effects on the speed and survival of international expansion.

Tuppura, Saarenketo, Puumalainen, Jantunen and Kaleviet (2008), in analyzing the effects of the nature of knowledge assets in a firm, market entry timing orientation, international growth orientation and its internationalization strategy, find that accumulated expertise is positively related to first-mover orientation and international growth orientation. Their study employs multi-industry data and extends prior research which states that a firm's resources and organizational attributes can be linked to an early market entry. However, their study falls short of validating the relationship between resource versatility and the international orientation of a firm. Their findings warrant more research, as they refer to Sapienza et al. (2006) who argue instead that resource versatility enhances firm growth. The present study in this context first validates the findings of Tuppura et al. (2008) on one hand, and also supports Sapienza et al. (2006) who state that a variety of firm-specific intangible resources from a specific dynamic industry confers sustained growth.

Furthermore, in the results, insights into extending the theory from the viewpoint of market orientation studies are also profound. This view emphasizes export market information use, organizational knowledge and firm performance (Toften and Olsen 2003; Diamantopoulos and Souchon 1996). The market orientation perspective lacks an explicit emphasis on how export market information is utilized, interpreted and disseminated within a firm. Thus, there is a need to explain in the context of market orientation studies why and how organizational knowledge may improve a firm's understanding of how to utilize market-specific knowledge in order to sustain performance. Acknowledging this shortcoming in this theory, Hult, Ketchen and Slater (2005; 2007) suggest combining the arguments from the resource- and knowledge-based views with market orientation studies. With reference to this, the study emphasizes the intangible organizational resources of international marketing-related capabilities and presents market knowledge competence as a distinct competence which enables a firm to understand how to utilize market knowledge for specific purposes.

Toften and Olsen (2003) in their conceptual framework suggest that some aspects of information use may be more performance-enhancing in an ultimate and direct manner, as Diamantopoulos and Souchon (1999) mention, while others may have more to do with knowledge generation and can have a long term impact on performance through the mediating effect of learning processes. However, although the dimensions of information use are not considered here, the results of this study are consistent with Diamantopoulos and Souchon (1999). In the present study the alliance learning capability were found to influence long term growth in the firm, provided the learning mechanisms are in place, whereas other capabilities directly influenced the speed and success of export expansion.

Relating to the speed, in terms of resource commitment to foreign markets this study supports Petersen and Pedersen (1999) who state that speed may differ due to the stability or instability of foreign markets. They focused on industry-related stability and instability factors. However, the present study emphasizes the internal factors and their role in resource commitment. It concludes that export expansion is driven by managing the internal knowledge base and externally available market knowledge. However, differences in speed may occur, due to the fact that firms vary in the duration of time it takes to transfer and create knowledge specific to export expansion. Thus, the time duration for market knowledge competence development may eventually affect the speed of export expansion (Blomstermo and Sharma 2003), meaning how timely firms perform the targeted activities as planned.

With reference to the success of international expansion, in the context of the framework of the study, the results reveal that market knowledge competence can lead a firm to a better understanding of how to utilize market knowledge to exploit opportunities by developing specific capabilities (Clercq et al. 2005). The integration of heterogeneous knowledge acquired from different sources reduces the uncertainty about the inherent capabilities of the firms. Firms perceive international activity as an opportunity and are more likely to continue export operations in subsequent foreign markets. Increased knowledge can also be related to seizing the opportunity, specifically the strategic window – which is opened for a short time and due to competitive or other reasons is soon closed as well. In this scenario, existing market knowledge competence enables a firm to combine a variety of resources to capture the opportunity and to develop new competence regarding the use of a new combination of resources.

### 7.3 Theoretical and managerial implications

This study contributed to the emerging body of literature by linking capabilities of firms with export expansion behaviour in several important ways. Firstly, it extended the notion of market knowledge competence (Cavusgil and Li 1999; Morgan et al. 2003) and identified salient capabilities organized into the market knowledge competence of a firm.

Secondly, this study offered evidence on the complexity of the phenomenon of export expansion by comparing its two different dimensions. Export expansion capabilities demonstrated varying degrees of influence for both dimensions. Further, it was found that the entrepreneurial orientation of a firm strongly influenced the alliance learning capability which had the largest effect of all the export ex-

pansion capabilities on export expansion. In fact, this study demonstrated that export expansion capabilities had a strong impact not only on the early market entry objectives, but also on the subsequent export expansion objectives.

Thirdly, within the parameters of this study it was confirmed that knowledge gave rise to capabilities by statistically analyzing the construct of experiential knowledge and the customer knowledge with reflective modes in the measurement model. This kind of causal link was implied by the conceptual definitions from the theory of the study. The knowledge-based and resource-based views of a firm faced the dilemma of causal ambiguity and of being tautological due to a lack of clarity as to whether the knowledge base or resources of a firm can be viewed as underlying factors (causes) or as a measure (causing) of the capabilities of a firm or vice versa.

The findings of this study also had implications for software development firms and managers planning to initiate and expand exports in foreign markets. First of all, firms planning to export must consider both dimensions of export expansion. The speed of export expansion is more significant at the initial phases of exports whereas success leads to a long-term achievement. Second, managers must consider what kind of knowledge their firm lacks for export expansion with reference to a particular foreign market. Also, what capabilities can be developed by acquiring the lacking knowledge. The findings of the study provided some solutions to all these practical issues. These are discussed in the following:

It was assumed in this study that problems in knowledge creation may lead to a view that firms either had an ambiguous idea of what kind of knowledge to develop or that they lacked key mechanisms or processes of knowledge development. By identifying two forms of knowledge and by strong empirical evidence of the knowledge sharing mechanisms, this study emphasized the practical importance of addressing these important issues. Knowledge sharing mechanisms and routines such as meetings and document sharing were important factors of external knowledge acquisition and utilization. Afterwards, four different kinds of export expansion capabilities were identified and tested. In practice, firms might take time to identify the relevant knowledge and then the capabilities associated with the knowledge for the purpose of export expansion. For managerial purposes this study broadly generated two types of knowledge playing an important role in new foreign market entry and expansion. This can be a good starting point for firms planning to initiate exports in foreign markets.

For the top management team of the firm, there was clear evidence from the findings of this study that employee learning is an investment and a key to competitive advantage. Thus, investments in the hiring and training of employees in local

and foreign markets are recommended. Further, product development experimentation and discretion given to R&D teams can contribute positively to export expansion. Additionally, it is worth noticing that different export expansion capabilities must be emphasized for both dimensions of export expansion. Thus, managing a portfolio of export expansion capabilities demands specific attention. Lastly, close contacts with foreign distributors and a commitment to improving the mutual relationship may lead a firm to achieve target sales objectives. Thus, a careful selection of the right partner is recommended.

## 7.4 Limitations and future research directions

Some of the limitations of this study deserve consideration. The first of these is the acknowledgement that this was a specific study of firms belonging to the software industry. Thus, the findings and the implications of the study can only be generalized for the software industry specifically. Moreover, this study analyzed the export expansion behaviour of the firm and did not focus on foreign resource commitment motives. Further, only four of the capabilities were organized into the market knowledge competence of a firm, whereas in practice market knowledge competence can be a portfolio of other capabilities as well.

Few of the theoretical and conceptual limitations were identified in the beginning of the study. Relating to this, even though export expansion was conceived from a dynamic capability perspective, the processes of export expansion were not paid attention to. However, the resources and knowledge that firms utilized to create and develop best practices for export expansion were focused on. Moreover, foreign market knowledge competence was conceived as a managerial ability in this study. However, it did not emphasize the individual role of the entrepreneurs/managers in the knowledge development process. Only the overall entrepreneurial vision of the firm was seen as a facilitating factor to market knowledge acquisition.

Finally, it must be noted that the present study might have omitted some other factors that might be important in explaining the barriers to market knowledge. This is primarily because it is a multidimensional construct and the level of  $R^2$  appeared relatively lower than the accepted value.

One may disagree with the conceptualization of speed as an indicator of entry and growth in international markets. However, this conceptualization is central to the context of this study only. It is acknowledged that even though the duration of time is not a good indicator of the speed of international expansion, it may how-

ever indicate how smoothly the interaction between underlying inter-connected variables occurred for foreign market knowledge acquisition and new knowledge creation. This aspect has been referred to as synchronization – the act of coordinating events and recognizing when something should or must be done (Weber and Antal 2001; Ancona, Okhuysen and Perlow 2001(b)). Smooth synchronization is attributed to an understanding of how firms coordinate their own actions with that of others such as partners, or with external time pressures. However, synchronization is not all that easy and finding optimal moments of time for actions (windows of opportunity) can be a difficult task for firms. Thus, speed as a subjective indicator may determine the relationship between market knowledge and the evolution of marketing strategy-related capabilities.

Several suggestions for future research can be offered by this study. First, it is suggested to cross-analyze the market knowledge competence of firms belonging to different industries and countries. Afterwards, a portfolio of export expansion capabilities can be generated for several industries by cross analyzing their market knowledge competence. This could serve as practical information for firms planning to start and expand exports.

Second, given that the alliance learning capability appeared as the most influencing capability on export expansion, it is suggested that future research must incorporate analyzing the learning processes of firms and their link to capability development. This however was set as the limitation of the present study.

It is also suggested that to achieve a higher level of  $R^2$  for the barriers to market knowledge construct, studies focusing on a more comprehensive set of factors must be followed up. For this purpose, barriers to market knowledge can be studied at various levels. This study analyzed the barriers at the firm and market levels. However, to comprehend the phenomenon of barriers to market knowledge more deeply, these barriers can be studied separately at the firm and market levels. For example, to emphasize the market level, future studies may explore the capabilities and skills of foreign partners as one potential line of enquiry.



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## APPENDICES

### APPENDIX 1 - QUESTIONNAIRES

#### **Appendix 1a**

#### Questionnaire for the qualitative study

1. Discuss how your firm moved from domestic operations to foreign operations. Please start from its early years. What specific knowledge your firm needed to acquire when moving abroad?
  - At foreign market level
  - At firm level
2. What was the stage of your firm in terms of resources and capabilities when your firm started foreign partnerships?
3. What changes were made in the existing organizational procedures in order to learn from knowledge of foreign markets? Did any of this cause a time lag in the export operations?
  - Belief systems
  - Formal planning systems
  - New routines
  - Change in old routines
  - Hiring of personnel
  - Personnel movement
  - Training/socialisation
  - Cost/investment
  - Conscious ‘go foreign to learn’ culture building activities
  - Mission, overall objectives of the firm
  - Product capability
  - Export marketing planning skills
4. What was the most common type of knowledge/capability that was used to deal with all of the above-mentioned issues?
5. Why a need to have partnerships with foreign subsidiaries was considered during this process?
6. What has been the role of such partnerships in resource and capability development of your firm? How did such partnerships affect the resources and capabilities of your firm over time?
7. For what kind of specific resources/capability foreign partnerships were preferred?
8. How did partnerships with foreign subsidiaries help your firm’s foreign operations? Discuss with the perspective of resources, learning and experience of your company.
9. After overcoming the obstacles, how faster has been the perceived speed of the subsequent export operations in practice?

10. What kind of experience/knowledge at this stage does your firm need to further increase your foreign operations?

## APPENDIX 1b

Questionnaire for the quantitative study

### FOREIGN MARKET KNOWLEDGE DEVELOPMENT BEST PRACTICES STUDY

UNIVERSITY OF VAASA,  
DEPARTMENT OF MARKETING

#### INSTRUCTIONS

To answer the questions;

- A manager dealing with planning and execution of international markets (export manager/foreign sales manager) for software products should fill in the questionnaire.
- All the questions must be answered with reference to a single export product of your company.
- All the questions must be answered with reference to a single key international market. Please select a key export market.

**1. For the export product you have chosen to answer the survey, please indicate the approximate time period for following.**

1= Before 1985, 2= 1985-1990, 3=1991-1995, 4= 1996-2000, 5= 2001-2006

	1	2	3	4	5
Time period when export product was developed					
Time period when export product started domestic sales					
Time period when export product was first sold internationally					

**2. Please indicate to what extent the following factors restricted the growth of the foreign sales in this market?**

1=very low, 2= moderately low, 3= slightly low, 4= neutral, 5= slightly high, 6= moderately high, 7= very high

	1	2	3	4	5	6	7
Our technical and marketing planning teams did not share a common vision for supporting the business							
We did not favour a climate of risk-taking and experimentations with products							
We followed established procedures of the firm and did not experiment to upgrade the internal routines of							



the firm with changing environment							
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**3. Please rate the following behaviour of the company’s personnel including the top management) in achieving the targeted sales for this market.**

1=very low, 2= moderately low, 3= slightly low, 4= neutral, 5= slightly high, 6= moderately high, 7= very high

Our company’s top management emphasizes the importance of knowledge sharing in our company	1	2	3	4	5	6	7
Our company’s top management encourages employees to question existing policies and working methods, to innovate, and to challenge current systems							

**4. Please mention to what extent you agree or disagree with the following**

1= strongly disagree, 2= moderately disagree, 3=slightly disagree, 4= neutral, 5= slightly agree, 6= moderately agree and 7= strongly agree

This product was clearly superior to competing products in terms of meeting needs of our customer	1	2	3	4	5	6	7
We were first into this market with this type of product							
This product permitted the customer to do a job or do something he/she could not presently do with what was available							

**5. Please indicate to what extent you rate the following foreign marketing implementation skills of your company?**

1=very low, 2= moderately low, 3= slightly low, 4= neutral, 5= slightly high, 6= moderately high, 7= very high

Effectively translating planned export marketing strategies into actions	1	2	3	4	5	6	7
Allocating appropriate resources to execute export marketing strategy							
Hiring appropriate local personnel with necessary marketing skills for this market							

**6. Please rate the following for your company.**

1=very low, 2= moderately low, 3= slightly low, 4= neutral, 5= slightly high, 6= moderately high, 7= very high

The sense around here is that employee learning is an investment, not an expense	1	2	3	4	5	6	7
Managers basically agree that our firm’s ability to learn is the key to competitive advantage							
The collective wisdom in our firm is that if we quit							

learning, we endanger our future							
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**7. For this market please mention to what extent the following knowledge sharing activities contributed in understanding the needs of your customers?**

1=very low, 2= moderately low, 3= slightly low, 4= neutral, 5= slightly high, 6= moderately high, 7= very high

Marketing personnel in our firm interact freely with others such as distribution, finance, manufacturing, discussing customer's future needs	1	2	3	4	5	6	7
When one department finds out something important about customers it is fast to alert other departments							
We periodically organize inter-function meetings to analyze all important market information							
We manage to regularly supply the different departments or members of the firm with reports(documents, news letters etc) about the competitive conditions of the market and the future needs							

**8. For this market, please mention to what extent the following partnership related activities contributed in understanding the needs of your customers?**

1=very low, 2= moderately low, 3= slightly low, 4= neutral, 5= slightly high, 6= moderately high, 7= very high

Our foreign sales partner(s) provide us information frequently and not only according to a pre-specified agreement	1	2	3	4	5	6	7
Our foreign sales partner(s) keep us informed about events and changes that may effect us							
Our foreign sales partner(s) possess knowledge of customer needs for this product that we lacked for this market							
The overall experience of our sales partner(s) in this market							

**9. Please rate the following relationship management factors for your company.**

1=very low, 2= moderately low, 3= slightly low, 4= neutral, 5= slightly high, 6= moderately high, 7= very high

We are committed to improvements that may benefit relationships with our major distributors as a whole and not only ourselves	1	2	3	4	5	6	7
When our major distributor incurs problems we try to help							
We share in the problems that arise in the course of dealing with our major distributor							

**10. Please indicate to what extent you agree or disagree with the following?**

1= strongly disagree, 2= moderately disagree, 3=slightly disagree, 4= neutral, 5= slightly agree, 6= moderately agree and 7= strongly agree

Maintaining a long-term relationship to our foreign sales partners in this market is important to us	1	2	3	4	5	6	7
If our relationship is discontinued with our foreign sales partners, we would have difficulty in making up the sales volume as we targeted for this market							
Our foreign sales partners are crucial to our future performance							
If our relationship was discontinued with our foreign sales partner finding a replacement of our foreign sales partner should be very difficult in this market							

**11. Please indicate to what extent the following factors prolonged the timeframe for the growth of foreign sales in this market?**

1=very low, 2= moderately low, 3= slightly low, 4= neutral, 5= slightly high, 6= moderately high, 7= very high

	1	2	3	4	5	6	7
The slow growth rate of this product's industry offered little foreign sales opportunities							
Our firm lacked knowledge to do product adaptations for this market							
Our firm did not share market information within the departments							
Our firm hired a wrong representative/distributor for this market							
Our firm faced problems in managing the relationships with distributors in this market							
Our firm had relatively little know-how to deal with foreign operations							
Our firm was satisfied with the local market share							
Our firm had to give up some of foreign market opportunities due to lack of time for making customer adaptations to the product							

**12. Please mention the extent to what your company achieved the following outcomes for this market during the first two years of the export sales?**

1=very low, 2= moderately low, 3= slightly low, 4= neutral, 5= slightly high, 6= moderately high, 7= very high

	1	2	3	4	5	6	7
Market share relative to its stated objectives							

Sales relative to its stated objectives								
Profit margin relative to its stated objectives								
Return on investment relative to its stated objectives								
Return on assets relative to its stated objectives								
Product delivery/sales to targeted number of customers as your firm's sales goals for this market								
Partnership development with distributors and technology partners as your firm's goals for this market								

**13. For this market please indicate the extent to what you feel satisfied in timely performing the following activities**

1= strongly dissatisfied, 2=moderately dissatisfied, 3= slightly dissatisfied, 4= neutral, 5= slightly satisfied, 6= moderately satisfied and 7= highly satisfied

	1	2	3	4	5	6	7
We have been ahead of our key competitors in producing the product for the market when customers needed it							
We have been able to capture the key export market as expected							
We were able to produce the right product for the market when customers needed it							
We have been able to enter at the time when profit margin opportunities were still open in this market							

**14. For this market, please mention to what extent you feel satisfied with the following. Please mention it relative to the current state of your company's knowledge of customer needs and prior international experience.**

1= strongly dissatisfied, 2=moderately dissatisfied, 3= slightly dissatisfied, 4= neutral, 5= slightly satisfied, 6= moderately satisfied and 7= highly satisfied

	1	2	3	4	5	6	7
This product, relative to the competitor's product in the key market							
Managing the time frame of the overall project for this product relative to stated time frame							
The relationship with your alliances (foreign sales and foreign technology partners) in this market							
The performance of your firm relative to competition							
By the overall performance of your firm							

**15. Please mention the following.**

Total number of export products
Year of company's foundation
Total number of people working for this product (including sales, product development and the founders of your company)

Year when exports of the product started in this market
Approximate number of export markets/countries (including this market)
Approximate number of international (clients including this market)
Approximate number of foreign sales/distributor partnerships
Approximate number of foreign alliances with technology partners
Number of years/month of operations in this country

## APPENDIX 2

**Table 1.** Loadings, cross loadings and the composite reliability of the measurement model

CONSTRUCT/ INDICATOR	NPDCAP $\rho_c = 0.80$ AVE = 0.60	MKTCAP $\rho_c = 0.85$ AVE = 0.70	ALLEARCAP $\rho_c = 0.87$ AVE = 0.50	ALLMGMTCAP $\rho_c = 0.89$ AVE = 0.81
SURPRDT	<b>0.729</b>	-0.359	0.283	0.233
PRDTLEAD	<b>0.755</b>	0.251	0.187	0.307
PRDTADTG	<b>0.678</b>	0.140	0.060	0.317
MKTSTRAT	0.146	<b>0.859</b>	0.140	0.033
MKTRESOU	0.058	<b>0.905</b>	0.109	-0.150
MKTPRSNL	0.168	<b>0.657</b>	0.168	.055
LEARINVS	0.178	0.111	<b>0.697</b>	0.155
LEARABTY	0.172	0.086	<b>0.696</b>	0.212
LEARFUTR	0.221	-0.083	<b>0.627</b>	0.75
INTERACT	0.271	0.295	<b>0.694</b>	0.193
DEPTALRT	0.139	0.075	<b>0.517</b>	0.077
MEETINGS	0.260	0.064	<b>0.631</b>	0.098
DOCUSHARE	0.138	0.181	<b>0.539</b>	0.051
PRTNRINF	0.084	0.132	<b>0.613</b>	0.398
PRTNRCHG	0.189	-0.038	<b>0.515</b>	0.492
PRTNRKNO	0.103	0.042	<b>0.656</b>	0.396
PRTNREXP	0.127	0.169	<b>0.624</b>	0.433
RLATNIMP	0.353	-0.149	0.272	<b>0.804</b>
RLAHELP	0.238	-0.020	0.439	<b>0.874</b>
RLAPBS	0.380	0.003	0.390	<b>0.885</b>
LONGTERM	0.396	-0.119	0.282	<b>0.870</b>
TARSAVOL	-0.255	0.123	-0.247	<b>-0.603</b>
FUTRPERF	0.249	0.040	0.196	<b>0.763</b>
RPLACMNT	-0.205	0.066	-0.120	<b>-0.489</b>

**Table 2.** Inter-construct correlations among the reflective constructs and the AVE squared along the diagonal

	ALLEARCA P	ALLMG MTCAP	MKTCAP	NPDCAP
ALLEARCAP	<b>0.707</b>			
ALLMGMTCAP	0.164	<b>0.90</b>		
MKTCAP	0.151	-0.043	<b>0.83</b>	
NPDCAP	0.299	0.3170	0.139	<b>0.78</b>