Department of Management and International Business

Essays on globalization and evolving competitive strategies of Finnish MNEs

Transitioning from products to services and solutions

Anna Salonen

Aalto University

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Abstract

This study examines the evolving competitive strategies of Finnish MNEs that operate in, and are influenced by, an increasingly globalized competitive environment. The main case firms studied include Kone, Nokia, Perlos, and Wärtsilä.

By drawing on the concept of strategic fit, we describe how the firms studied have shifted competitive strategies through time, and in the context of firm internationalization processes, so as to maintain fit with a changing external competitive environment. The firms studied have first built their international positions through reliance on a differentiation led strategy of product leadership. In later stages, escalating competitive pressures have forced them to improve cost efficiency and to look for new sources of differentiation through business models aimed at adding value beyond products. This value addition is realized through a gradual shift from products to services and customer-specific solutions. In many cases, these changes in competitive strategy have enabled the firms studied to maintain responsiveness to a changing external competitive environment, while building on a logical and continuous evolution of firm-specific capabilities.

Based on the cases studied, it seems that a transition to services and solutions has been most successful among industrial manufacturers that can rely on the installed base logic. This reorientation is much more difficult in industries that lack a serviceable base of products and/or in industries characterized by a highly dynamic competitive environment. In such industries, the transition does not provide for a logical continuation of existing firm capabilities and firms, moreover, do not have sufficient time to implement the changes required.

The shift in strategy from products to services and solutions, as well as the related organizational requirements and challenges, are described in more detail through four original research papers included as part of this study.

Keywords case study, globalization, competitive strategy, competitiveness, strategic fit, dynamic capabilities, internationalization, service business, solution

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Tekijä
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Väitöskirjan nimi
Suomalaisten monikansallisten yritysten muuttuvat kilpailustrategiat – siirtyminen tuotteista kohti palvelu- ja ratkaisupohjaista liiketoimintaa

Julkaisija Aalto-yliopiston kauppakorkeakoulu

Yksikkö Johtamisen ja kansainvälisen liiketoiminnan laitos

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Tutkimusala Kansainvälinen liiketoiminta

Tiivistelmä

Tämä tutkimus tarkastelee suomalaisten monikansallisten yritysten kilpailustrategian kehittymistä globaalissa kilpailuympäristössä. Pääasiallisina tapausyrityksinä toimivat Kone, Nokia, Perlos ja Wärtsilä.

Tutkitut tapausyritykset ovat rakentaneet asemansa kansainvälisillä markkinoilla erilaistamisstrategiaa hyödyntäen. Erityisesti tuotteiden paremmuudella on ollut merkittävä rooli. Globalisaatio on kuitenkin muokannut voimakkaasti yritysten kilpailuympäristöä pakottaen niitä etsimään uusia kilpailukyvyn lähteitä. Tutkitut yritykset ovatkin kasvavien kustannuspaineiden myötä parantaneet kustannustehokkuuttaan sekä pyrkineet etsimään uusia, erilaistamisetua parantavia liiketoimintamalleja. Yksi keskeinen malli on ollut siirtyminen palvelu- ja ratkaisupohjaiseen liiketoimintaan. Edellä kuvattu kehityspolku on useissa tapauksissa mahdollistanut sopeutumisen muuttuvaan kilpailuympäristöön tavalla, joka on rakentunut jo olemassa olevien kyvykkyyksien varaan muodostanut siten loogisen jatkumon yrityksen toimintaan.

Tämän tutkimuksen pohjalta voidaan todeta, että siirtyminen tuotteista palvelu- ja ratkaisupohjaiseen liiketoimintaan on ollut menestyksekkäintä metalliteollisuuden yrityksissä, joille on vuosien saatossa muodostunut huollettava laitekanta. Mikäli yritykseltä puuttuu huollettavan laitekannan muodostama looginen siirtymäpolku ja/tai ympäröivä kilpailuympäristö muuttuu erittäin voimakkaasti, muutos kohti palvelu- ja ratkaisupohjaista liiketoimintaa on vaikeampi toteuttaa.

Tähän tutkimukseen sisältyvät neljä tutkimuspaperia kuvaavat yksityiskohtaisesti tapausyritysten siirtymistä kohti palvelu- ja ratkaisupohjaista liiketoimintaa sekä tähän siirtymään liittyviä haasteita.

Avainsanat tapaustutkimus, globalisaatio, kilpailukyky, kilpailustrategia, dynaamiset kyvykkyydet, kansainvälistyminen, palveluliiketoiminta, ratkaisupohjainen liiketoiminta, kokonaisratkaisut

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Espoo, September 27, 2012

Anna Salonen

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Paper 2: Salonen, Anna and Gabrielsson, Mika (2012). The Challenge of MNC-Led Growth and Internationalization – the Case of Nokia Dependent Suppliers. *Journal of Business-to-Business Marketing*, 19(2): 147-173.

Paper 3: Salonen, Anna (2011). Service Transition Strategies of Industrial Manufacturers. *Industrial Marketing Management*, 40(5): 683-690.

Paper 4: Salonen, Anna; Gabrielsson, Mika; and Al-Obaidi, Zuhair (2006). Systems Sales as a Competitive Response to the Asian Challenge: Case of a Global Ship Power Supplier. *Industrial Marketing Management*, 35(6): 740-750.

PART I: Overview of the dissertation

1 Introduction

1.1 Background

Encouraged by the suggestion of Buckley (2002) that research should look at big questions involving developments in the world economy, this dissertation examines the topical, but complex, phenomenon of globalization and its firm level effects. More specifically, we utilize the globalization phenomenon as a representation of the changes that are occurring in the firm's competitive environment, and look for ways in which to understand the effects of these changes on firm level strategic behavior.

In many respects, the current competitive environment is the outcome of a long process of economic, political, and technological development, which has intensified in the past few decades (Ali-Yrkkö et al., 2004). These developments can be roughly grouped under the so called globalization phenomenon, defined in this study as the "processes leading to the integration of final products, intermediate goods, and factor markets across countries, coupled with the increased salience of cross-border value-chains in international economic flows" (Prakash and Hart, 2000, p.xi). Although many industries still remain protected by various barriers, competitive pressures drive more and more industries to increase in their level of global integration over time (Porter, 1986; Prahalad and Doz 1987; Bartlett and Ghoshal, 1989; Yip, 2003). Firms that choose to ignore possibilities for greater integration risk being driven out of the market by more efficient competitors (Makhija, Kim and Williamson, 1997). Thus, as pointed out by Westney (1993), a wealth of case based evidence points to how many industries have 'globalized' by imitating the cross-border integration strategies of a major competitor. These mimetic pressures lead to a self-perpetuating process in which the effects of globalization are increasingly felt across industries and geographies.

Operating in this new environment of increased openness poses both opportunities as well as threats for firms. The most obvious opportunity is the possibility to more efficiently benefit from foreign location advantages in the form of easier access to resources, markets, or created assets – a development

that has led to the creation of geographically extensive and complex transnational production networks (Dunning, 2000; Prakash and Hart, 2000). As a result, while it has become easier to access foreign location-specific advantages and to coordinate the resultant cross-border activities, it has become more difficult to derive rents from these activities as firms increasingly have access to the same markets and productive resources. At the same time, advances in information communication technologies (ICT) have also increased the use of market-based rather than hierarchical coordination mechanisms among firms in an effort to increase efficiency and specialization (Dunning and Lundan, 2010). Thus, transparency of the sources of firm-specific advantages has increased thereby making it harder both to identify and protect them (Jacobides and Winter, 2005; Dunning and Lundan, 2010).

Such developments have increased environmental dynamism and intensified competition across industries, resulting in fundamental challenges for the management of firm competitiveness. Consequently, firms have been advised to move away from a view of strategy as static positioning (D'Aveni, Dagnini, and Smith, 2010) and instead to adopt a dynamic perspective, whereby the sources of firm-specific advantages change through time and in response to changes in the competitive environment (Ibid).

This development is investigated in the context of Finland based multinational enterprises (MNEs). As will be discussed, the traditional advantages of Finnish MNEs are related to product leadership and technological excellence, and these advantages tend to form the basis of their competitiveness in international markets. At the same time, given increased competition and growing environmental dynamism, new sources of competitiveness must be found to complement initial advantages. To improve cost efficiency, firms in this study have mainly looked to opportunities upstream, for instance by relocating and rationalizing production, while new opportunities have been sought downstream in the form of services and solutions to enhance differentiation. The objective of this research is to provide a closer examination of this transformation process and subsequently to provide a more dynamic perspective of competitive strategy in global markets. Particular emphasis is given to examining the process of transforming from products to services and customer-specific solutions.

1.2 Research gap

On a broad level, this study can be positioned within the contingency perspective with its focus on internal and external relationships, and thus on the fit between the organization and its environment. Most existing studies based on contingency theory adopt a structural contingency perspective (Burns and Stalker, 1961; Lawrence and Lorsch, 1967; Donaldson, 2001), but the same argument can be extended to the strategy perspective (Chandler, 1962).

Within the strategy perspective, contingency-based perspectives have been addressed through the concept of strategic fit, which highlights the importance of aligning strategy with organizational and environmental contingencies. For instance, the field of business policy, which served as the initial strategy paradigm (Schendel and Hofer, 1979), is based on the idea of matching organizational resources with environmental opportunities and threats. Since then, the idea of fit has been examined through distinct schools. For instance, externally based models grounded in the industrial organization (IO) paradigm (e.g. Porter, 1980; 1985) have mostly concentrated on the fit between strategy and external elements, while the resource-based view of the firm (e.g. Barney, 1991) has largely examined elements internal to the firm (Fahy and Hoolay, 2002). Some recent literature in the field has called for a revived interest in research that adopts an integrated approach to strategy formulation (Zajac, Kraatz and Bresser, 2000; Fahy and Hoolay, 2002). Furthermore, in contrast to most existing research, the argument has been made that studies would benefit from adoption of a dynamic perspective (Venkatraman, 1989; Zajac et al., 2000).

To fill this gap in existing research, we take as the starting point Porter's (1985) concept of generic competitive strategy, which is seen as the most prominent perspective in externally focused models of competitive advantage (Fahy and Hoolay, 2002; Thornhill and White, 2007). We investigate how changes in the firm's external competitive environment prompt changes in competitive strategies through time, but in ways that are consistent with the firm's internal contingencies. We refer to the phenomenon of globalization as a major change factor in the external competitive environment.

To illustrate changes in competitive strategy more concretely, we also draw on the product-based perspective. We integrate the product-based perspective by investigating the increased propensity of firms to "move downstream" (Wise and Baumgartner, 1999). Accordingly, manufacturers have been found to increasingly transition to services (see e.g. Fang, Palmatier, and Steenkamp,

2008) and customer-specific solutions (see e.g. Davies, Brady, and Hobday, 2006) while building on their core manufacturing capabilities. We argue that this development provides an empirical illustration of how firms change strategy as an attempt to maintain fit with a changing external environment while building on a logical and continuous evolution of firm-specific capabilities.

1.3 Research questions

As noted by Hood and Vahlne (1988), the principal problem of strategy, be it in the context of local or global competition, is to address the issue of how to position and adapt the company to a changing environment. Compared to preceding changes, the environmental change of globalization has resulted in particularly complex strategic challenges for managers (Ibid). In response to this, we pose a very general level main research question to be addressed throughout this study:

How is the environmental change of globalization affecting the way in which MNEs strive to sustain a competitively superior industry position?

To approach this question, we draw on Porter's (1985) concept of generic competitive strategy, which provides the "red thread" for this study. According to Porter (1985), firms may attain above average profits if they are superiorly positioned in their industry. To do this, they must enjoy a competitive advantage over their rivals through an ability to offer lower prices for equivalent benefits, or to offer unique benefits that offset a premium price. The inherent assumption in Porter's work is that the firm maintains sustainable competitive advantage by choosing a strategy and sticking with it. Porter calls these two basic strategies cost leadership and differentiation.

What makes Porter's conceptualization particularly problematic in the context of this study is that globalization is an inherently dynamic phenomenon. In fact, one of the arguments put forth in this study is that a major challenge caused by globalization is the rapidity with which the basis of firm competitiveness and thus its industry position is changing due to evolving dynamics in the competitive environment. Thus, to address the main research question posed in this study, one must firstly move away from a static

conceptualization of generic competitive strategy. Thus, we pose the first sub-question as follows:

How does the MNE's generic competitive strategy evolve to maintain fit with a changing external competitive environment?

Closely connected to this first sub-question, we wish to investigate in more detail how the firm's evolving competitive strategy is manifested through other layers of its strategy. The perspective chosen in this study is one of product offering strategy. The firm's product offering is essentially an indicator of its competitive strategy, as well as the resources and capabilities that support it. Thus, we pose the second sub-question as follows:

How does the MNE's product offering strategy evolve to maintain fit with a changing external competitive environment?

1.4 Research context

In this study, we refer to globalization as a contextual factor that explains the nature of the changes occurring in the MNE's competitive environment and suggest some possible firm level responses. One can argue that the effects of globalization and the challenges it poses differ according to the type of firm in question. For instance, firms originating from developed countries are bound to be faced with a different set of challenges than those originating from the developing countries due to different types of firm and country specific advantages (Dunning, 1988).

The perspective adopted in this research is that of MNEs originating from the developed economies with a set of Finland based multinationals serving as case examples. Access to these firms was gained through research collaboration as part of the RESPONSE project. The RESPONSE project was financed by the Finnish Funding Agency for Technology and Innovation (TEKES) in Finland and a group of Finland based MNEs. On the Aalto University School of Economics side the project was headed by Professor Mika Gabrielsson and the author of this study acted as a project coordinator and researcher.

The objective of the RESPONSE project was to study how the globalization phenomenon affects competitiveness of the firms participating in the project and to consider ways in which to respond to this challenge. These firms operate in highly global and mature or maturing industries where the effects of

globalization are expected to be felt the strongest. Such industries are typically characterized by intense competition and escalating cost pressures while possibilities to compete through pure technology-based innovation are fewer. This presents a concrete challenge for many Finland based MNEs that have typically based their international competitiveness on technological leadership. With one exception, all operate in the business-to-business context. Two of the firms, Kone and Wärtsilä, operate in the metal engineering sector and the other two, Nokia and Perlos, in the ICT industry.

1.5 Structure of the study

This study is structured in two parts, as illustrated in figure 1. The first part of the study consists of this introductory chapter followed by chapters on theoretical background, methodology, introduction of case firms, summaries of the dissertation essays, discussion, and conclusions. The purpose of this first section is to provide a conceptual background against which to reflect the individual dissertation essays. Part two consists of the four dissertation essays. Two of these are single authored papers, and two co-authored.

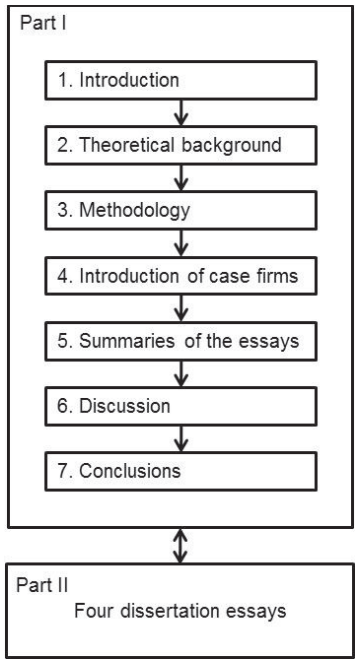

Figure 1: Structure of the study

2 Theoretical background

This section provides an overview of the main concepts and theories relevant to the study. We first briefly present different perspectives on the multinational enterprise to provide a way in which to conceptualize the focal actor of interest. We then discuss the role of the external environment in these different perspectives on the MNE, and consider some ways in which the general globalization phenomenon can be considered an environmental change factor. While we acknowledge that globalization is driven by actions of firms in the aggregate sense, we nevertheless consider it as an environmental change force to which an individual firm must respond.

Secondly, we review literature in the field of strategic management to consider how firms might shape their strategies as a response to changes in the external competitive environment. In particular, we discuss externally and internally oriented models of competitive advantage through Porter's (1985) generic strategy concept, as well as the resource-based view of the firm (Wernerfelt, 1984; Barney, 1991). A combination of these perspectives helps to provide an integrated view of strategy, as is consistent with the concept of strategic fit.

Lastly, we explore development of competitive strategy in the context of firm internationalization processes. Arguably, the international business context provides a particularly interesting background against which to study the interaction between firm strategy, environmental change, and development of capabilities due to the changing nature of factors internal and external to the firm that drive development of firm capabilities (Kilpinen, Paukku, Salonen, and Gabrielsson, 2009) and strategy (Salonen et al. 2007) in different stages of the internationalization process. Lastly, we discuss development of the firm's product offering strategy as an empirical illustration of how firm strategies are bound to evolve in an effort to maintain fit with changes in the competitive environment through different stages in the firm's internationalization process.

2.1 The MNE and changes in the external environment

The purpose of this section is to discuss the nature of the multinational enterprise, particularly the ways in which existing theoretical frameworks conceptualize the interface between the firm and its environment. To do this, we refer to Forsgren's (2008) categorization of the six perspectives on the multinational firm: the dominating, coordinating, knowing, designing, networking, and politicizing multinational.

2.1.1 Theoretical perspectives on the MNE

The dominating multinational

This perspective relies on industrial organization theory (Bain 1956) to develop a firm level theory of foreign direct investment. Early work in this perspective was undertaken by Hymer (1976) who strove to explain the nature and existence of multinational enterprises through the concept of firm-specific advantages. According to this view, multinationals exist because they enjoy firm-specific advantages derived from market imperfections and monopolistic rights that enable them to overcome the liability of foreignness and to conduct operations in foreign countries. Later proponents of the view have emphasized a more positive perspective and emphasize the ability of multinationals to create unique intangible assets through innovation instead of reliance on monopolistic advantages (Caves, 1982).

The coordinating multinational

The coordinating multinational perspective extends previous work done to explain foreign direct investment by referring to transaction cost economics (Williamson, 1975) as a way to explain why coordination of business activities in foreign countries occurs through the multinational's internal hierarchy rather than through market mechanisms. According to this perspective, multinationals exist not only because of the possession of firm-specific advantages, but also because of their ability to efficiently internalize transactions across borders.

The perspectives on the dominating and coordinating multinational are combined and extended through Dunning's (1988) eclectic paradigm of foreign direct investment. He draws on the ideas of firm-specific and internalization advantages, and adds the element of location. Dunning (1988) stipulates that

firms will engage in foreign direct investment when all of the following three conditions are met:

- The firm possesses some *ownership-specific advantages* (O) not possessed by other firms. These are typically intangible asset advantages (e.g. product innovation, production management, organizational and marketing systems, innovatory capacity etc.) or advantages of common governance (e.g. size and market power).
- The firm must derive some *internalization advantages* (I) from the use of its O advantages within the firm's internal hierarchy as opposed to selling or leasing these advantages to other firms. These reasons could be for instance avoidance of search and negotiating costs, buyer uncertainty, need to protect quality etc.
- There must be some location-specific advantages (L) that makes it advantageous to exploit the firm's O advantages in a foreign location. Location-specific advantages include natural and created resources. (Dunning, 1988)

Particular combinations of these three advantages result in various motivations for foreign direct investment (FDI). These include market, resource, efficiency, or strategic asset-seeking FDI. Market-seeking FDI is geared to satisfying demand in a particular market. Resource-seeking FDI is supply oriented and can relate to natural resources or use of unskilled labor. Efficiency-seeking FDI is geared to optimizing division of labor or specializing of the MNE's activities in different countries. Strategic asset-seeking FDI is aimed at protecting or augmenting the MNE's existing O specific advantages. (Dunning, 1993)

The knowing multinational

The knowing multinational perspective addresses the essence of firm-specific advantages in more detail by reference to concepts such as the "resource-based view" or the "dynamic capability view" (e.g. Barney, 1991; Teece, Pisano, and Shuen, 1997). Unlike the view of the coordinating multinational, this view is critical of the possibility that firm-specific advantages can be traded on the market. Instead firms are assumed to be heterogeneous as to the resources they control, and these advantages are not perfectly mobile across firms.

According to the perspective on the knowing multinational, the uniqueness of each firm's advantage is primarily explained by its unique asset position as well as its managerial and organizational processes, which refer to routines and patterns of doing within a particular firm. These routines and processes help to

create new sources of firm-specific advantages. The firm's asset position reflects its current portfolio of important assets such as intellectual property, customer base, supplier relations etc. This perspective stresses the ability of the multinational enterprise to act as an instrument of capability transfer and accumulation through its international operations. The perspective thus assumes that foreign direct investments are made both to exploit firm-specific advantages and to develop new ones.

The designing multinational

This perspective is rooted in contingency theory and takes the external environment as a focal point of interest. Studies in the contingency-based perspective can be traced to Chandler's (1962) work on changing strategies and structures of US based multinationals. According to contingency theory there is no one ideal organizational structure or firm strategy that will produce superior results for an organization (Donaldson, 2001). Instead, of central importance is to create a fit between the organization and its environment.

Although the contingency-based perspective has been applied to strategic issues (Chandler, 1962), most studies within this perspective deal with aligning organizational structures to fit environmental contingencies (Stopford and Wells, 1972; Galbraith, 1973). Under the structural contingency approach, Stopford and Wells's (1972) seminal study for instance assesses how US multinationals changed their structures as a result of growing international operations. Another influential stream relates to the so called information processing view (Egelhoff, 1988), which takes as a central guideline the efficiency of information processing and decision-making when deciding upon the choice of structure. Additionally, Bartlett and Ghoshal (1989) have developed a classification of the ways in which the multinational structures itself as a response to two major environmental factors: forces for global integration and forces for national differentiation. Similarly, Prahald and Doz (1987) emphasize the importance of balancing between global integration and local responsiveness.

The networking multinational

The perspective of the networking multinational concentrates on specific relationships between firms and actors in its environment such as customers, suppliers, sub-suppliers, and competitors (Johanson and Mattsson, 1988). These business relationships are significant intangible assets held by a firm and an important aspect of developing the firm's international operations consists

of developing business relationships with specific firms in other countries. Successful market entry requires an understanding of the relevant business network for the type of product or service in question and such knowledge is acquired through firsthand experience.

The politicizing multinational

Lastly, the perspective on the politicizing multinational highlights the importance of the political environment in which the multinational operates. This approach builds on institutional theory (Powell and DiMaggio, 1991), which assumes that the environment shaping the multinational consists of institutions, values, and expectations of society. In the institutional view, countries consist of unique legal systems, political configurations, labor systems, business systems, values etc. Learning of the explicit and implicit rules of these different institutions and adapting to the requirements is important in gaining legitimacy in a particular environment. At the same time, society must also adapt to powerful multinationals.

2.1.2 Role of the environment in MNE theory

As pointed out by Forsgren (2008), the existing theories on the MNE all make a distinction between the firm and its environment. In the dominating multinational, the environment is composed of real and potential competitors over whom the focal firm attempts to develop firm-specific advantages. The perspective of the coordinating multinational is premised on the distinction between market and hierarchy whereby the nature and extent of the MNE's foreign activities depend on the efficiency of the firm's internal hierarchy as opposed to external market mechanisms. The knowing multinational, while being very internally focused in terms of value creation and transfer, acknowledges competitors as potential risks for the diffusion of firm-specific knowledge and capabilities. The designing multinational recognizes that high performance requires a fit between the environment and the way in which activities within the firm are organized. The networking multinational is defined through the business relationships it has with external networks of actors. Finally, the politicizing multinational is shaped by the institutions and legal, cognitive, and normative frameworks that surround it.

In summary, we can say that existing theories or perspectives on the MNE vary as to the importance they place on the environment as an explanatory factor behind the nature and behavior of the multinational. What is

nevertheless clear is that the environment cannot be ignored in conceptualizations of the MNE. Furthermore, we can expect that changes in the external environment, depicted in this study through the phenomenon of globalization, should have a profound impact on the nature and behavior of the MNE. These changes will be explored in more detail in the following section.

2.1.3 Globalization and changes in the environment

The current competitive environment is the outcome of a long process of economic, political, and technological development which has intensified in the past few decades (Ali-Yrkkö et al., 2004). These developments can be roughly grouped under the so called globalization phenomenon, defined in this study as the "processes leading to the integration of final products, intermediate goods, and factor markets across countries, coupled with the increased salience of cross-border value-chains in international economic flows" (Prakash and Hart, 2000, p.xi).

The globalization phenomenon can be attributed to two primary drivers: government policy changes, and advancements in transportation and communication. The economic and political landscape has changed significantly since the 1970s and 1980s. For instance, governmental trade barriers have diminished substantially. Tariff barriers have gone down and regional trade agreements such as the European Union have greatly facilitated trade and investment. Moreover, entirely new regions have been reintegrated into the world economy as more than 30 countries have abandoned central planning since 1989 and more than 80 developing countries have liberalized their economic policies. This liberalization has had a tremendous effect on cross border flows of trade, investment, finance, and technology. At the same time, developments in information technology have reduced communication costs, while transportation has also become easier and faster with innovations such as containerization and commercial aircraft. (Porter, 1986; UNCTAD, 1997; Eden and Lenway, 2001)

Operating in an increasingly global market environment presents both opportunities and challenges for firms. As to opportunities, firms benefit from foreign location advantages in the form of easier access to resources, markets, or created assets, which has resulted in creation of geographically extensive and complex transnational production networks (Dunning, 2000; Prakash and Hart, 2000). As a result, while it has become easier to access foreign location specific advantages and to coordinate the resultant cross-border activities, it

has become more difficult to derive competitive differentiation from these activities due to increasingly similar access among firms to the same markets and productive resources. Consequently, competition has greatly increased among industry incumbents. At the same time, the entry to global markets of so called emerging market multinationals (EMNEs) has further escalated competitive pressures. In particular, developing economies such as China, and more recently India, with large domestic markets and a low labor cost base have attracted significant amounts of foreign direct investment, which has enabled firms in these countries to build formidable capabilities with which to challenge industry incumbents, particularly through so called cost innovation strategies (Zeng and Williamson, 2007).

Moreover, it seems that industry dynamism has intensified due to more rapid diffusion of innovations leading to rapid changes in the basis of firm competitiveness. More specifically, advances in ICT have prompted firms to adopt market-based instead of hierarchical coordination mechanisms in an effort to enhance operational efficiency (Dunning and Lundan, 2010). As a result of the increased reliance on market-based coordination mechanisms, firm-specific capabilities have become more transparent making it harder both to identify and protect them through time (Jacobides and Winter, 2005; Dunning and Lundan, 2010). These developments have led to increased environmental dynamism and intensified competition across industries. This growing reliance on market-based coordination mechanisms has also led scholars to characterize the modern MNE as being shaped by both its foreign investment *and* foreign involvement that together define the scale and scope of the MNE (Liesch, Buckley, Simonin, and Knight, 2011).

As discussed in more detail in Gabrielsson et al. (2007), the effects of globalization vary by industry with highly global industries being naturally more affected than those protected by local barriers. Yip (2003) has developed perhaps the most comprehensive list of measurements for industry globality. Yip's (2003) four drivers consist of (1) *market drivers* (e.g. customer segments with common needs, global customers, global channels and marketing practices, lead countries), (2) *cost drivers* (scale, sourcing and logistics efficiencies, differences in country costs, high level of product development costs and rapid change of technology), (3) *competitive drivers* (globalized competitors, transferability of the competitive advantage, interdependence of trade), and (4) *government drivers* (global trade environment versus protected markets). Depending on the nature of these drivers, industries can be

characterized on a continuum between global and local with implications for strategy development.

Despite differences in the level of global integration across industries, competitive pressures are nevertheless driving more and more industries to increase their level of global integration over time (Porter, 1986; Prahalad and Doz, 1987; Bartlett and Ghoshal, 1989; Yip, 2003). Firms that choose to ignore possibilities for greater integration risk being driven out of the market by more efficient competitors, thus reinforcing the cycle of growing economic integration (Makhija, Kim and Williamson, 1997). Similarly, Westney (1993) notes that significant case-based evidence demonstrates how many industries have 'globalized' by the cross-border integration strategies of a major competitor as a result of mimetic behavior. Thus, globalization seems to be a self-perpetuating process whereby, from the perspective of a single firm, it is the environment that is changing, but from a systemic perspective, the change process is mutual and driven by isomorphic pressures among firms (DiMaggio & Powell, 1983; Dunning and Lundan, 2010). While acknowledging the systemic nature of the phenomenon under study, we choose to address globalization from the perspective of an individual firm thus seeing it as an environmental change force to which an individual firm must respond.

2.1.4 The MNE in a globalized environment

In this section we briefly consider some of the ways in which globalization is changing the conceptualization of the MNE as per the different perspectives introduced by Forsgren (2008).

For discussion purposes, we combine the perspectives of the dominating and coordinating multinational under Dunning's (1988) eclectic paradigm. The levels of foreign direct investment have grown tremendously, which, as noted by Dicken (2007), reflects the growing intensity of the globalization phenomenon. As a result of globalization, it has become much easier to internalize the firm's O advantage across locations and to benefit from FDI related to resource, market, efficiency, and strategic asset-seeking. In particular, locations such as China and India, with large domestic markets and abundant low cost, have become central locations for the exploitation of firm-specific advantages (Ramamurti and Singh, 2009). At the same time, it has become increasingly difficult for MNEs to derive rents from international operations due to intensified competition thus highlighting the importance of

augmenting original firm-specific advantages through strategic-asset seeking investments.

The perspective of the networking multinational that draws attention to specific relationships between actors further attenuates the importance of upgrading the firm's original O advantages. More specifically, in the context of globalization, we can expect external relationships to grow even further in importance as competitive pressures encourage firms to concentrate on core competences and to rely on partners for access to complementary resources and capabilities (Brown and Wilson, 2005). At the same time, this increased use of externalization of noncore activities is likely to enhance the diffusion of firm-specific capabilities that are no longer protected through the firm's hierarchical coordination (Dunning and Lundan, 2010). Thus, firms will find it more difficult to enjoy sustained competitive advantage and turn to renewing their sources of firm-specific advantages, as is consistent with the perspective on the knowing multinational.

The perspective on the politicizing multinational highlights the importance of the political environment in which the multinational operates. In the context of globalization, we can expect increased harmonization of the political and economic environment to make it easier for MNEs to implement globally configured and coordinated strategies. Due to mimetic behavior, practices of first movers are likely to be quickly imitated by firms belonging to the same organizational field, thus intensifying the rapidity of this development (Westney, 1993) whereby the developments described above are expected to influence a growing number of firms across industries.

Finally, and perhaps most importantly, we have argued that the external competitive environment has become increasingly turbulent as a result of the globalization phenomenon. Understanding these changes in the external competitive environment and responding to them through firm level strategic behavior has thus become a key priority. This highlights the importance of conceptual models that stress alignment between the organization and its environment. It is for this reason that the perspective on the designing multinational, which is based on contingency theory, has been chosen as a key conceptual foundation in this study.

Furthermore, while the perspectives on the multinational presented in earlier sections provide a basis for conceptualizing the MNE as the focal unit of interest, a more fine grained understanding of firm level responses requires understanding of firm strategy, defined as "the way in which the organization

positions itself with regard to the global business environment and creates and sustains competitive advantage across borders" (Harzing, 2002, p.212).

To address the issue of firm strategy, we next review relevant literature in the field of strategic management. In line with the perspective on the designing multinational, we adopt the contingency-based perspective through reference to the concept of strategic fit.

2.2 A contingency-based perspective to strategy

As noted by Zajac et al. (2000), the idea of strategic fit, or the fit between the organization and its environment, has traditionally occupied a central role in normative models of strategy. Since then, the idea of fit has been examined through distinct schools that can roughly be divided into environmental and resource-based explanations of competitive advantage (Fahy and Hoolay, 2002). Environmentally based models grounded in the industrial organization (IO) paradigm (e.g. Porter, 1980; 1985) have mostly concentrated on the fit between strategy and external elements, while the resource-based view of the firm (e.g. Wernerfelt, 1984; Barney, 1991) has mostly focused on internal firm characteristics (Fahy and Hoolay, 2002). In this study, we take the concept of generic competitive strategy as a focal point and complement this with the resource-based perspective as a way to explore how firms maintain fit with a changing competitive environment.

2.2.1 Generic competitive strategy

Conceptually, environmental models of competitive advantage belong to the industrial organization viewpoint and thus conform to the perspective on the dominating multinational. According to Porter (1985), the competitive advantage of a firm is a function of its ability to find and maintain a superior industry position, which will then translate to superior profitability. The firm's profitability is constrained by industry dynamics, described by Porter (1980) through the five forces model. According to this model, industry attractiveness is shaped by five industry forces and their interaction: current rivals, new entrants, suppliers, customers and substitutes. While some industries are more structurally attractive than others, the focal firm can nevertheless actively shape its performance by choice and application of superior competitive strategies.

According to Porter (1985), competitive advantage stems from the value that a firm is able to create for its customers. This value may take form of prices lower than competitors' for equivalent benefits or the provision of unique benefits that offset a premium price. These two approaches lead either to a generic competitive strategy of cost leadership or differentiation. The differentiator provides more value at a higher price. The cost leader provides similar value as the competition at a lower price. These generic types can also be extended to cost focus and differentiation focus. Competitive advantage derives from successful implementation of cost or differentiation-driven strategies, in broadly or narrowly targeted industry segments (Porter 1985). The firm must make a decision between these two strategies or risk being "stuck in the middle" with negative performance implications (Porter 1985, p. 16).

A company pursuing cost leadership aims to be *the* lowest cost producer in the industry and exploits all sources of cost advantage. A cost leader typically sells a basic standard product that is mass produced to achieve scale economies. A differentiator seeks to be unique in a way that is valued by customers. The sources of differentiation are endless depending on what is valued by customers and what the firm is good at. These points of differentiation may include product features, the way the product is delivered, or the way it is marketed. (Porter 1985, p.14)

The generic competitive strategies described above are different ways to enhance net buyer value. A low cost producer enhances net buyer value because it is able to sell its product at a competitive price. A differentiator enhances net value by selling more benefits. While the concept of generic competitive strategy stresses the importance of strategic purity, Porter (1985) does acknowledge three conditions enabling a combined strategy: 1) competitors are stuck in the middle, 2) cost is strongly affected by share or interrelationships, and 3) the firm pioneers a major innovation. However, he views these conditions as exception rather than the norm.

Interestingly, while Porter's work (1980; 1985) belongs to the environmental school of strategy research, he does not explicitly address the appropriateness of particular generic strategies to different environmental contexts. However, as noted by Hambrick (1983), environmental characteristics faced by the firm place constraints on the types of strategies that can feasibly be adopted. Thus, Campbell-Hunt (2000) suggests examination of contingency based perspectives that explicitly account for the need to match competitive strategies to environmental contingencies.

While researchers in the environmental school have increasingly come to advocate approaches that are more sensitive to changes in the external competitive environment, such approaches are not without difficulties. More specifically, it has long been recognized that firms experience difficulties in changing strategy (Miles and Snow, 1978; Oster, 1982; Miller and Friesen, 1984). Explanations of such difficulties require theoretical approaches that are sensitive to the impact of idiosyncratic firm attributes in support of particular strategies. Such a theoretical lens is provided by resource-based scholars.

2.2.2 The resource-based view

This view, which conceptually fits with the perspective on the knowing multinational, is concerned with explaining the uniqueness of each firm through emphasis on firm-specific resources. According to this view, resources, defined as "all assets, capabilities, organizational processes, firm attributes, information, knowledge etc. controlled by the firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness" (Daft, 1983 as quoted in Barney, 1991, p. 101), are at the heart of firm competitive advantage. Since resources are heterogeneously distributed among firms and resist mobility, they form the basis of sustainable competitive advantage (Barney 1991)

In early work under this perspective, no explicit distinction was made between resources and capabilities, and the terms were often referred to interchangeably (Spanos and Lioukas, 2001). However, it has later been argued that resources are assets owned or controlled by a firm, while capabilities enable firms to combine resources for accomplishment of specific organizational goals (e.g. Amit and Schoemaker, 1993). In subsequent work, researchers have also examined so-called dynamic capabilities (e.g. Teece et al. 1997; Eisenhardt and Martin, 2000; Winter, 2003), which, according to Teece et al. (1997, p.516), consist of "the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments".

Despite growing awareness concerning the importance of dynamic capabilities in today's increasingly turbulent industry environments, it has nevertheless been noted that organizational flexibility is significantly deterred by the path-dependent nature of capabilities (Schreyögg and Kliesch-Eberl, 2007). Path-dependence refers to the fact that the company's present activities are imprinted by past decisions and underlying patterns (Arthur, 1989; Cowan

and Gunby, 1996). These dynamics create self-reinforcing processes that impede strategic change (David, 1985; Helfat, 1994; Burgelman, 2002). Thus, capabilities tend to evolve gradually and to proceed along logical steps or stages that correspond to current and expected industry requirements (Amit and Schoemaker, 1993). In other words, capabilities and industry conditions co-evolve (Levinthal and Myat, 1994).

Helfat and Peteraf (2003) provide an interesting way to conceptualize the manner in which resource-based theory can be made dynamic. Accordingly, Helfat and Peteraf (2003) draw on evolutionary economics (Nelson and Winter, 1982) to argue that capabilities evolve as a response to changes in internal and external contingencies faced by the firm, but do so in patterned and path-dependent ways, which create capability lifecycles.

The lifecycle of a new capability begins with the founding stage, proceeds with gradual building of the capability, and finally reaches the maturity stage when capability development ceases and the capability is simply maintained through existing routines. According to Helfat and Peteraf (2003), this cycle can at times be interrupted by factors internal or external to the organization that change the course of capability development. In such an instance, capability branching can occur as follows: retirement, retrenchment, renewal, replication, redeployment, and recombination. For instance, it may be possible to improve or renew a mature capability, relocate a particular capability to a new geographical market or reassign it to a different, but closely related product or service. It may also be feasible to recombine an original capability with another one. In the process of doing so, the firm maintains responsiveness to the external industry environment, but does so in path-dependent and patterned ways. In the context of this study, we are particularly interested in the process of replicating initial capabilities in other markets through the process of firm internationalization, as well as subsequent upgrading of these capabilities as demanded by changes in the firm's external competitive environment.

We will next discuss the concept of competitive strategy in the context of firm internationalization. This is due to the changing nature of factors internal and external to the firm that drive development of firm capabilities (Kilpinen, Paukku, Salonen, Gabrielsson, 2009) and strategy (Salonen et al., 2007) in different stages of the internationalization process.

2.2.3 Competitive strategy and firm internationalization

Literature in the field of international business is varied and emphasizes different aspects of conducting business outside the domestic borders of the firm. FDI-based perspectives such as the OLI (ownership, location, internalization) paradigm (Dunning 1988, 1993) explain firm internationalization as a dynamic in which various economic motives (market, resource, efficiency, or strategic asset-seeking) lead firms to engage in internationalization through foreign direct investment. Key to this dynamic is the possession of certain firm-specific ownership advantages developed in the home country that can then be leveraged in foreign markets endowed with location-specific advantages.

In contrast, the so-called process school (Johanson and Vahlne, 1977) seeks to explain firm internationalization as a function of managerial decision-making processes. Accordingly, internationalization is seen as a risk adverse process that favors incremental commitment decisions and familiarity with the target market. This results in a stepwise process of increasing commitment to foreign markets as the firm gains more experience and knowledge of those markets through its existing operations. In doing so, firms follow a pattern of low to high commitment and gradually expand to markets with greater psychic distance.

To account for the current economic environment that both forces and enables a more rapid internationalization process, the so-called born global school has emerged alongside the traditional process school. Thus, in the last two decades, scholars have pointed to the growing emergence of firms that defy traditional process theories in that they have a global vision from inception, advance rapidly in the internationalization process, and target even psychically distant markets (e.g. Oviatt and McDougall, 1994). In research streams based on the process school, the firm's geographical extent of activities is often used as a proxy for its degree of "internationality". For instance, Luostarinen and Gabrielsson (2006) characterize an international firm as having substantial business outside the home market and a global firm as having substantial business outside the home continent.

As discussed in detail in Kilpinen et al. (2009), and consistent with Mathews and Zander (2007), a significant shortcoming of the process school is the assumption that internationalization consists of a sequential, linear process. In contrast, scholars coming from the international strategy school view firm internationalization as a nonlinear process that is characterized by two distinct logics concerned with conducting international business operations: global

configuration and coordination of activities (Porter, 1986; Yip, 2003). Global configuration refers to geographical spread of activities outside the home country, whereas global coordination is concerned with increased rationalization of activities across countries to enhance operational efficiency. Although strategy scholars are less concerned with the process aspects of internationalization, the implicit, if not explicit, assumption is that the sequence of internationalization consists first of global configuration of activities and later, given that industry drivers accommodate for such development, increased efficiency of operations through coordination across countries. For instance, according to Yip (2003), most companies in the process of global configuration end up with strategies and approaches with large differences among countries, while having to later turn attention to greater efficiency through global coordination. Thus, as pointed by Tallman and Fladmoe-Lindquist (2002), firm internationalization and globalization are two distinct processes, with the former referring to a strategy of building greater international presence and the latter referring to a process of consolidating international markets and operations.

In this study, when we talk of firm internationalization, we refer to the general process of increased involvement in international operations through geographical expansion, which may, in the presence of favorable industry conditions, involve increased coordination of activities across countries. In terms of competitive strategies, we are interested in exploring how the firm's competitive strategy evolves in different stages of the internationalization process. According to conventional understanding among international business scholars, the firm's initial internationalization process is primarily driven by factors internal to the firm – more specifically the ownership-specific advantages it has developed, generally in the home country (Dunning, 1988). This notion is consistent with the resource-based view whereby, for instance Collis (1991), finds that resources, secured through access to domestic factor markets, form the basis of strategy in international markets. Thus, the advantages / capabilities the firm has grown in its home market tend to drive the process of global configuration. Choice of foreign locations then depends on the firm's assessment of where it can best exploit its firm-specific advantages (Dunning, 1988).

Thus, in terms of the domestic stage, we would expect firms within a particular home market location to rely on a heterogeneous mix of resources and capabilities to implement competitive strategies on a continuum from cost leadership to differentiation. At the same time, while the distribution of

resources and capabilities varies among firms, they are in an overall sense constrained and affected by the same local strategic factor market (Barney, 1986; Porter, 1990; Collis, 1991), which has an effect on the kinds of strategies that can be successfully pursued in international markets (Dunning, 1980). Thus, due to similar types of O advantages at the start of their internationalization process, we can expect MNEs from particular locations, in an aggregate sense, to have similar types of competitive strategies, for instance in terms of the degree to which they rely on cost or differentiation-based strategies in the early stage of their internationalization process. For example, as is discussed in essay 1, a frequently used strategy among Finnish MNEs has been to internationalize based on a differentiation driven strategy of product leadership.

Regardless of the initial advantages possessed by the MNE, it is important to note that these initial advantages are unlikely to provide sustained competitive advantage in the absence of new capability development (Luo, 2000). While the capabilities developed vary by firm, Collis (1991) notes that international market expansion facilitates learning through exposure to new markets and competitors. Therefore, it seems likely that strategies and supporting capabilities change in later stages of the internationalization process as a result of exposure to different environmental contingencies. This enables the firm to integrate internal resources and external learning in an effort to maintain responsiveness to the external competitive environment (Kogut and Zander, 1992).

Through the process of international configuration or expansion, the firm can thus further enhance its original firm-specific advantages. The initial differentiator can attempt to further differentiate itself by, for instance, enhancing its technological capabilities through strategic asset-seeking FDI (Dunning, 2000). Rationalized or asset-seeking FDI in the form of securing access to cheaper factor inputs can enhance cost effectiveness (Ibid). The extent to which the firm can seek other types of efficiencies related to rationalization and coordination of activities depends on the nature of industry globalization drivers (Yip, 2003). Nevertheless, we can expect global configuration of activities to gradually be complemented by increased coordination of activities in an effort to improve cost efficiency. In fact, one of the consequences of globalization seems to be the enhanced ability of firms to create complex networks of cross-border value chains that enhance coordination of activities across countries (Prakash and Hart, 2000; Dicken, 2007). The extent to which initial differentiators can be expected to shift

attention to greater cost efficiency can also be expected to reflect the stage of the industry lifecycle, whereby increasingly mature industries require more concerted efforts at building cost efficiencies (Hofer, 1975; Abernathy and Utterback, 1978; Hambrick, 1983).

We have so far discussed different theoretical conceptualizations of the MNE and have reviewed in more detail the contingency-based perspective, which has been chosen as the main theoretical lens through which to explore behavior of the MNE. This theoretical lens has been applied to issues of firm strategy and internationalization. We next discuss the product-based perspective, which has been chosen as a way to empirically examine development of the firm's competitive strategy, as well as the resources and capabilities that support it.

2.3 The firm's product offering strategy

In this study we investigate how firms can use development of their product offering strategy as a way to compete successfully in an environment of intensifying global competition. Product level changes have been utilized in previous research as a proxy for changes in strategy (Romanelli and Tushman, 1994), and product strategies have been found to mirror the firm's capability development (Helfat and Raubitschek, 2000; Shamsie, Martin, and Miller, 2009). Thus, the product strategy perspective enables one to illustrate how firms change their strategies through time as a response to changes in the external environment, while taking into consideration organizational constraints – as is consistent with the contingency-based perspective.

Aalto University School of Business (former Helsinki School of Economics) has a long history of studying firm level product strategies in the international business context. For instance, Luostarinen (1979) investigated development of the product offering through different stages in Finnish firms' internationalization process. According to Luostarinen's (1979) large scale empirical investigation of Finnish manufacturers, firms tend to proceed in the following order of introduction: goods, services, systems, and know-how when developing their international market position. This order is thought to reflect the development needs in firm capabilities required to progress from one offer type to another. Luostarinen's (1979) work has later been extended through Kosonen's (1991) study on the internationalization of industrial system suppliers. Finally, Gabrielsson (2004; see also Gabrielsson et al. 2006) has studied how the product strategies of ICT companies change as they become

what he calls “globalizing internationals”. Gabrielsson (2004) uses this term to describe development of the firm’s international market position towards alignment of operations through, for instance, growing standardization of product level strategies. He notes that this development tends to be accompanied by growing complexity of the product offering concept towards services, systems, and know-how. In this study, we will examine development of the firm’s product offering concept from products to services and solutions as a reflection of the firm’s evolving competitive strategy.

2.3.1 Service transition strategies

Given the importance of services in the product offering strategies of most manufacturers, a separate stream of literature describes this phenomenon, which Fang et al. (2008) call “service transition strategies”. This literature stream acknowledges the growing importance of service strategies due to financial, marketing, and strategic considerations. In terms of financial benefits, in some industries an installed base of equipment with a long lifecycle provides a substantial revenue potential (Potts, 1988; Knecht, Leszinski and Weber, 1993). Services also tend to have higher margins (Anderson, Fornell and Rust, 1997) and to provide a relatively steady stream of income compared to product sales (Quinn, 1992). In terms of marketing benefits, a service orientation has been found to enhance product sales (Mathe and Shapiro, 1993). More specifically, product services can influence overall client satisfaction (Burger and Cann, 1995), facilitate new product adoption (Frambach et al. 1997), and strengthen the client’s confidence and the supplier’s credibility (Hawes, 1994). Also, in some instances, clients expect to benefit from the supplier’s know-how in the form of services so as to derive more value connected with the use and performance of products (Vandermerwe, 1994). As for strategic considerations, competitive strategy based on services is thought to lead to more sustainable competitiveness. Firstly, technological leadership is increasingly more challenging to maintain (Grönroos, 1990). On the other hand, a strategy of cost leadership is often not possible (Zeithaml and Bitner, 1996). Therefore, given the more intangible and difficult to copy nature of services, a service based strategy is considered a viable alternative (Anderson and Narus, 1995; Oliva and Kallenberg, 2003).

The service transition literature acknowledges that services can take many forms. For instance, a distinction can be made between traditional services such as after-sales services and more advanced ones (Cespedes, 1994). It is

noted that while traditional services continue to be important, manufacturers also benefit from adoption of more advanced services, so as to respond to customer needs and to benefit more fully from downstream opportunities (Burger and Cann, 1995). Mathieu (2001) provides a classification that distinguishes between services in support of the supplier's product (SSP) and those in support of the client's action (SSC). SSP are product services that ensure proper functioning of the product and/or to facilitate the client's access to the product. SSP may take the form of product maintenance, installation, monitoring, and repair. SSP are fairly standardized and demand low relationship intensity. SSC, on the other hand, are "services as a product" which customers can buy without purchasing the tangible product. SSC can include financing, process-oriented training, and business-oriented consulting. SSC entails high relationship intensity between the seller and buyer, a high level of customization, and an emphasis on people as recipients.

Existing research finds that manufacturers experience difficulties in transitioning to more advanced services due to lack of capabilities and competition from professional service organizations such as consulting firms (Markides and Williamson, 1996; Antioco, Moenaert, Lindgreen and Wetzels, 2008). Owing to heightened competition, Gebauer, Beckenbauer and Fleisch (2004) find that margins on SSC are typically less than for SSP, which is in accordance with earlier findings that services that directly enhance the value of the tangible product and enhance its application are more effective (Simon, 1992).

At the same time, a contrary argument can be made in that basic services are core skills and resources that are required of all market participants (Matthyssens and Vandenbempt, 2008). They act as an entry barrier, but often do not lead to sustained competitiveness (Levitt, 1981; Wagner, 1987; Matthyssens and Vandenbempt, 1998). Thus, companies are advised to introduce more advanced services that provide competitive differentiation through customization and proactive sensing of client expectations (Matthyssens and Vandenbempt, 2008). In other words, firms benefit from a transition towards services tied to the customer's process (Mathieu, 2001). Fang et al. (2008) suggest the strategy of solutions as one feasible development path through which manufacturers can transition to more advanced services. Solutions business, through the integration of products and services, helps to ensure synergistic spillovers between service and core product operations, thereby side-stepping some of the challenges traditionally associated with transitioning to more advanced services.

2.3.2 Solutions

Given the potential effectiveness of solutions to contribute to a successful service transition, this strategy is discussed in more detail. The roots of academic discussion on the subject can be traced back several decades, although in this earlier literature the term "system" is most commonly used rather than the term "solution". The systems concept originates from engineering practice, whereby providers of military weapons systems in the 1940s and 1950s began to develop ways to better manage the development and delivery of complex weapons systems (Hobday, Davies and Prencipe, 2005). From the 1960s onwards, the topic has been addressed by scholars in the industrial marketing and management fields. Here, the earliest mention of the term system can be found in Murray (1964) where systems selling was first recognized to be an important industrial marketing tool. The idea of systems selling was later picked up again by several industrial marketing scholars in the 1970s and early 1980s (see e.g. Mattsson, 1973; Hannaford, 1976; Page and Siemplenski, 1983). In this earlier research, the focus was on industrial marketers that utilized a systems selling strategy to change the manner in which products are marketed (Page and Siemplenski, 1983). The objective was to develop an approach that utilizes the seller's know-how to develop combinations of products and services that perform a complete function for the buyer (Hannaford, 1976).

In terms of the drivers for systems development, the early scholars saw systems selling as a way to respond to a growing need for firms to become more oriented to customer needs, rather than having a strict product orientation. This development was attributed to a general development in the marketing concept, which stresses the centrality of customer needs in determining the firm's activities, strategy, and organization (Mattsson, 1973). In terms of these needs, it was recognized that the problems that customers faced in their day-to-day operations had become more complex, interrelated, interdisciplinary, and interfunctional, therefore requiring more complex solutions (Page and Siemplenski, 1983). Development of systems was seen as a way to alleviate the problems faced by customers as a result of this growing complexity.

Much of the early work in the area of systems was thus done by scholars in the industrial marketing field. Subsequently, the topic was picked up by management scholars (Dunn, Thomas and Lubowski, 1981; Hanan, 1986) who

stressed the importance of a consultative orientation to systems provision. According to these authors, the role of a systems seller is one of a consultant whose primary task is to assist the customer in developing his or her business. This distinction has later led scholars to distinguish between the concepts of system and solution. In more recent literature, the term system is often taken to refer to a physical product system, which is the result of a technical engineering-based task, whereas a solution incorporates, in addition to the physical product system, strategic and consultative business activities that are designed to "help the customer use technology to create value and transform their business" (Davies, Brady and Hobday, 2006, p.41).

Despite some interest by industrial marketing and management scholars in the 1970's and early 80's (see e.g. Mattsson, 1973; Hannaford, 1976; Page and Siemplenski, 1983), relatively little research was conducted in the area until the latter part of the 1990's. At this point, we can see growing interest, which has escalated further after the turn of the millennium. This increased interest can be explained by changes in the macro environment. Mainly, the phenomenon of globalization has contributed to growing interest on behalf of both buyers and sellers to adopt a solutions approach (Kumar, 2006; Cova and Salle, 2007).

More specifically, globalization has contributed to increased competition, particularly by low cost competitors, more rapid commoditization of products and services, and high cost pressures (Kumar, 2006; Cova and Salle, 2007). The competitive response of many industry incumbents has been to transition from a product focus to a solution focus. For many established firms, such a shift represents a logical development since many of them possess considerable reserves of accumulated know-how related to customers, technologies, and service operations (Page and Siemplenski, 1983; Kosonen, 1991). A progression to solutions enables the firm to gain greater commercial advantage and competitive differentiation out of this accumulated know-how (Page and Siemplenski, 1983). Furthermore, the potential for commercial opportunities that lie downstream in the value chain presents an attractive proposition for many sellers. As noted by Davies, Brady, and Hobday (2006), by the late 1990's revenues obtained by servicing an installed base represented from 10 to 30 times the value of new product sales. Therefore, business models that enable the firm to better tie service concepts are appealing from a business perspective. While, in principle, products, services, and know-how related to systems could be sold separately in an unbundled form, particularly the know-how component is probably best sold as part of a system/solution to provide a clear link to the firm's core product business (Fang et al., 2008).

Finally, in terms of the competitive argument, service and know-how intensive activities are less visible and more labor dependent, and thus more difficult to imitate, particularly for industry new comers (Heskett et al., 1997). This barrier to imitation can be assumed to be long-lasting since the know-how required in systems selling is acquired through contact with target customers, and is difficult and slow to gather. Furthermore, the seller's knowledge base is constantly evolving through contact with the target market and experience in delivering systems (Mattsson, 1973; Page and Siemplenski, 1983). For all of the previous mentioned reasons, increasing numbers of firms are finding business models that enable better utilization of downstream opportunities an attractive proposition. Finally, due to increased competition, customers themselves have become increasingly more willing to accept business models that increase levels of outsourcing and lead to rationalization of procurement practices (Cova and Salle, 2007). Thus, competitive pressures have led to dual pressures on both buyers and sellers to gravitate towards solutions.

2.4 Conceptual frame for the study

As stated in the introduction, in this study we are interested to investigate the globalization phenomenon and its firm level effects. More specifically, we refer to the globalization phenomenon as an external change factor and seek to understand its impact on firm level strategic behavior.

To understand the above mentioned phenomenon in more detail, in this section we have reviewed different perspectives on the MNE (Forsgren, 2008). Based on this review, the view of the designing multinational that is rooted in contingency theory has been chosen as a focal perspective due to the emphasis it places on the fit between the organization and its environment. More specifically, the idea of strategic fit, which is grounded in contingency theory, provides a useful theoretical lens through which to examine the phenomenon of globalization and its firm level effects. The logic employed in this study is depicted graphically in figure 2.

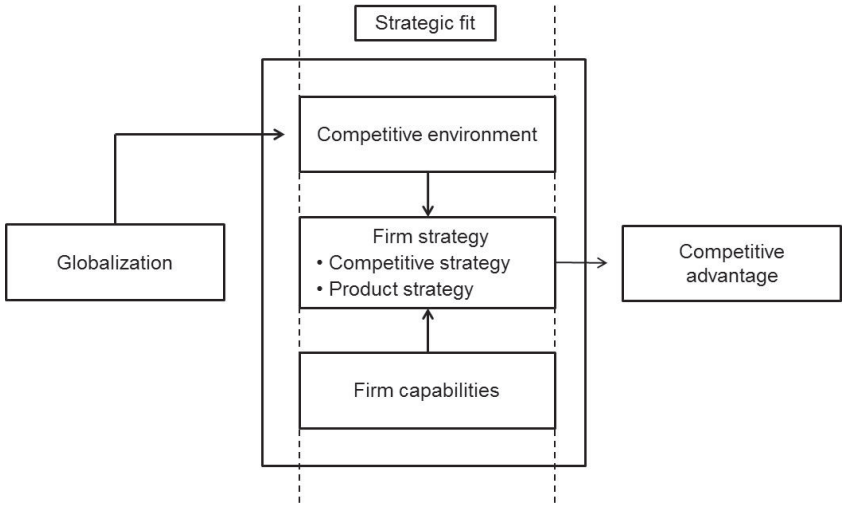

Figure 2: Conceptual frame for the study

As is evident from figure 2, maintaining strategic fit, or the fit between the organization and its environment, is viewed as being of key importance in maintaining competitive advantage in global markets. In this study we have chosen to concentrate on Porter's (1985) concept of generic competitive strategy as the "red thread". Furthermore, the product-based perspective has been chosen as a way to examine how the firm's competitive strategy is manifested. Therefore, we have included competitive strategy and product strategy as the variables of interest in figure 2. The external environment is depicted as the "competitive environment". While the firm's internal capabilities have traditionally been underemphasized in environmental schools of competitive advantage (Fahy and Hoolay, 2002), the idea of strategic fit, recognizes the importance of also considering the firm's internal organizational resources in determining the choice of appropriate strategy. Thus, we have included internal contingencies as "firm capabilities" into the conceptual framework. In accordance with the resource-based view, we also acknowledge the importance of firm resources. However, since firm capabilities embody resources controlled by the firm (Amit and Schoemaker, 1993), we simply, for reasons of parsimony, refer to firm capabilities in the framework. The firm level effects of globalization are felt through impact on its external competitive environment, whereby the firm shapes its competitive strategy to respond to these changes in its external competitive environment, but in ways that are consistent with its internal capabilities. This frame functions as a conceptual guide for the study.

To study in more detail the reciprocal interactions between strategy, the competitive environment, and firm capabilities, we consider the above framework in the context of the firm's internationalization process, and as manifested through changes in product strategy towards services and solutions. Graphically, this is depicted in figure 3 below:

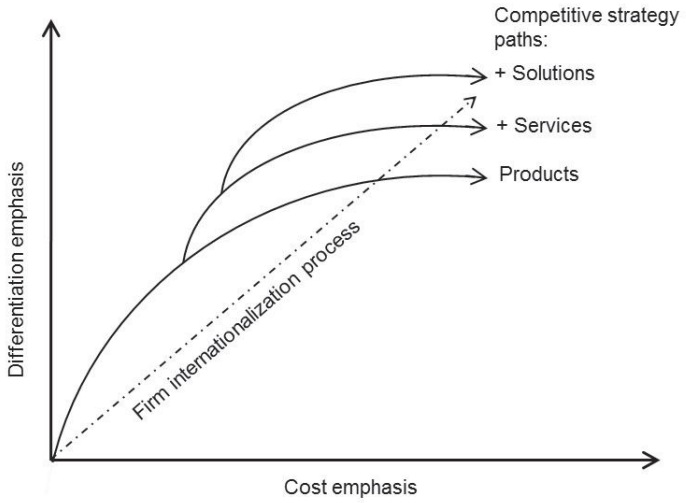

Figure 3: Development of firm competitive strategy in different stages of the internationalization process

The assumption in the figure is that firms initially internationalize with a particular type of strategy that builds on types of ownership-specific advantages that are consistent with the firm's local strategic factor market (Barney, 1986; Porter, 1990; Collis, 1991). Since the focal point of interest in this study is Finland based MNEs, we assume these firms to base their internationalization upon a differentiation-led strategy, which would be consistent with the strategic factor conditions of the Finnish economy. In later stages of the internationalization process, the firm will likely benefit from increased attention to cost efficiency of operations, as necessitated by changes in the competitive environment and enabled by industry conditions.

Furthermore, consistent with earlier research (Luostarinen, 1979), we assume that Finland based MNEs first base their internationalization strategy upon pure product leadership strategies and later complement these with more advanced types of product strategies related to services and solutions. These more advanced types of product strategies are primarily viewed as ways through which to enhance the original differentiation advantage of the firm to

avoid having to revert to cost based competition. The assumption here is that at some point as the industry matures, it becomes more difficult to base the firm's competitiveness on pure technology-based product leadership. At the same time, reverting to pure cost based competition may not be desirable or even possible due to the path-dependent nature of firm capabilities. In such a situation, new sources of differentiation can be found through transition to services and solutions. These logics are explored in more detail in this study.

3 Methodology

This dissertation consists of four empirical papers based on the case study methodology. Most of the case study data was collected in conjunction with the RESPONSE project financed by the Finnish Funding Agency for Technology and Innovation (TEKES). The objective of the RESPONSE project was to study how the globalization phenomenon affects firm competitiveness and how firms should respond to these challenges. The project commenced in August 2006 and ended in April 2009. This research draws mainly from data collected at four partner firms of the RESPONSE project: Nokia (mobile phones), Kone (elevators and escalators), Wärtsilä (ship machinery), and Perlos (mobile phone parts). In some instances a better understanding of a particular phenomenon has required inclusion of more cases, whereby data has been collected outside of the partner firms.

3.1 Research approach

This research follows the phenomenological rather than the positivistic research tradition. The nature of the research question, given its complexity, suggests that a non-positivist research strategy is particularly appropriate (Remenyi et al., 1998). Also, non-positivistic research is often chosen for research that concerns people and their organizations (Remenyi et al. 1998, p.94).

Phenomenology is a qualitative research orientation that stresses the importance of describing the world from the point of view of the persons who live in and experience it. Rather than seeking to generate and/or test hypothesis through deductive reasoning, studies in this stream rely on inductive reasoning to reveal deeper structures of phenomena. In-depth interviews are the primary method of data collection, which can be supported by documentary analysis and/or participant observation. (Sanders, 1982)

The phenomenological tradition is thought to embody an interpretive approach, which Gummesson (2003) argues is a key aspect of business research. Therefore, the phenomenon to be studied is understood intuitively

which negates the need for strict a priori research protocol that dictates the research process as understood in the positivistic tradition. Instead, the approach unfolds as the research progresses and evidence is collected and interpreted (Remenyi et al. 1998).

While ascribing more closely to a phenomenological rather than a positivistic approach in stressing the importance of understanding and interpretation, this research has not been conducted in a purely inductive manner. Rather, the research approach could best be described as abductive. Abduction is a term used to describe a middle ground between deductive and inductive research. As noted by Locke (2010), abduction is a critical part of theorizing from case study research. Under the abductive approach, understanding of a phenomenon is largely an intuitive and iterative process where deduction and induction are used in turn to form theoretical insights (Locke, 2010). The abductive approach is described by Dubois and Gadde (2002) under what they term "systematic combining" – an approach that advocates continuous movement between the empirical and model world. During this process, the research issues and the analytical framework are reoriented as directed by empirical findings.

As an example of an abductive process utilized in this study, the author set out to initially investigate the strategy of integrated solutions as a way through which to enhance firm competitiveness in response to changes in the competitive environment. However, as the research progressed, it became apparent that a solutions strategy is better understood in the context of a more extensive service transition process, whereby the firms apply quite distinct service transition logics to enhance overall competitiveness. For example, in the industrial manufacturing sector, the firms have a separate service division that offers lifecycle services to the installed base, which helps to improve profitability, secure revenue growth, and guard against industry cyclicality. At the same time, a strategy of integrated solutions has been adopted to enhance the differentiation potential of the core product business. This dual logic helps, for instance, to explain why firms are willing and able to implement solution strategies despite the reported difficulties most companies experience in doing so. Essentially, product-related services offer financial support, while companies implement a strategic redirection towards solutions as a way to create a gradual change in the organizational mindset and capabilities regarding how value creation and delivery through products takes place. Thus, the concept of solutions can be referred to as a way of thinking and acting, in addition to it being a concrete business deliverable. This distinction is not

readily apparent in existing research, but very much affects the way in which the topic can be studied.

3.2 Data collection

As to the method of data collection, the study utilizes the case study method, which is a common method in non-positivistic research (Remenyi et al., 1998). The case study method has made it possible to develop in-depth understanding of a complex phenomenon through direct interaction and cooperation with a limited number of firms. According to Gummesson (2000), academics typically lack access to the proper information and do not understand the conditions in a specific company, market, and industry that influence the phenomenon being studied. Access in this study has been greatly facilitated through participation of the case firms in the RESPONSE project.

3.3 Sample selection

This research relies on purposeful sampling whereby we have selected information-rich cases for in-depth study that enhance our understanding of the phenomenon under study (Patton, 2002). Nokia, Kone, Wärtsilä, and Perlos represent an informative sample, as they all operate in highly global and mature or maturing industries, where the effects of globalization are expected to be felt especially strongly. Still, there is some variety between the firms concerning the nature of industry dynamics, which adds to the richness of our understanding. Wärtsilä and Kone operate in more traditional metal engineering sectors where the external competitive environment is not as turbulent as the industry in which Nokia and Perlos operate. In fact, the mobile phone industry has globalized and matured in about 10 years, which is extremely rapid and one could argue, without precedent. It is interesting to compare such extreme cases where the rate of external environmental change differs quite drastically, so as to see what effect this may possibly have on the strategies being adopted.

These two pairs of firms are also interesting in other respects. For instance, Wärtsilä and Kone, although operating in different industry sectors, both manufacture industrial machinery with a long and serviceable lifecycle. Thus, it was possible to utilize replication logic when exploring service transition

strategies of industrial manufacturers, as detailed in essay 3. Furthermore, since Nokia and Perlos occupy different positions in the industry value chain (customer vs. supplier), it was interesting to see what effect this has on the competitive positions of the respective firms. Moreover, as the research progressed, it became apparent that the addition of more firms was appropriate in order to gain a fuller understanding of the phenomenon under study. These firms included Elcoteq (electronic manufacturing services) and Aspocomp (mobile phone parts), both suppliers to Nokia. It was deemed appropriate to collect data from these firms to further explore the observed pattern of customer-dependent growth and internationalization, as described in essay 2.

3.4 Data collection phases

The research process approximates what Dubois and Gadde (2002) term systematic combining. Within this approach, research sites are entered with some preliminary analytical frameworks which can then be developed over time as the research progresses and new insights are generated. This approach recognizes that case study research aimed at developing new insights and theories is seldom a linear process. At the same time, to avoid producing simply rich descriptions of events that lack theoretical foundations, purely inductive approaches are not necessarily recommendable. Thus, researchers should enter the field with some tools and frameworks, which can then be developed or redirected as the research progresses. This approach describes very much the actual research process adopted in this study. While the researchers had a preliminary plan for the research process and data collection, this plan was revised several times during the process as understanding of the phenomenon under study evolved and research opportunities presented themselves.

To describe what the research process entailed in this study, we can roughly divide it into two stages. The second stage can be further divided into three separate phases. Altogether, this research draws on 72 interviews, which are listed in appendix 1. The start of the research process reported in this study (stage 1) can be traced back to 2003-2004 when the author first engaged in research collaboration with Wärtsilä. The objective of that research was to study the firm's recent strategic reorientation into a solution provider. The data collected at this stage is reported in essay 4. Research collaboration with

Wärtsilä pointed towards the importance of investigating in more detail strategic redirections among Finnish MNEs as a response to the changing intensity and type of competition faced by these firms. Interviews at this first stage were conducted at Wärtsilä, three customer organizations, and one collaboration partner.

With the support of funding from TEKES, continued collaboration with Wärtsilä, and inclusion of new corporate partners, the author continued the research effort in collaboration with the RESPONSE project team in the second stage of research. In the first phase of this second stage, the research team set out in 2006 with the broad objective of investigating how globalization affects the competitiveness and strategies of Finland based MNEs. Given the complexity of the topic at hand and relative unfamiliarity with many of the case firms, the researchers first decided to conduct a standardized round of interviews at all the partner firms that addressed industry globalization drivers (Yip, 2003), industry structure and value chain analysis, and firm competitive strategy (Porter, 1980, 1985). This phase was deemed to be important for gaining understanding of the conditions in each specific company, market, and industry that influence the phenomenon being studied. The persons interviewed were identified by company representatives of the steering group. These interviews took place during fall 2006.

One of the themes that emerged from the interviews conducted during the first phase was the need for the development of new types of capabilities to support firms' competitiveness in an environment characterized by shifting industry drivers and structures. The researchers decided to investigate this development during the second phase of research from the perspective of internationalization and globalization processes in the case firms. Of particular importance was to determine which resources and capabilities formed the basis for the initial competitiveness of the firms as they built their international presence, and how these resources and capabilities had to be updated in later stages. The researchers also addressed the importance of the firms' operations in large emerging countries such as China and India, as these markets were identified in the first phase interviews to be important for the firms' overall strategy and competitiveness.

This second phase research was conducted using the focus group interview method in which a researcher, relying on a discussion guide, acted as the facilitator. This research method was seen to be an appropriate one to limit interviewer bias and to enable focus group participants to converse freely

around structured topic areas. Focus groups were organized at Wärtsilä, Nokia, Kone, and Perlos during fall of 2007 and spring of 2008. Informants included top management team members or senior managers. Additional interviews were organized with knowledgeable individuals who could not join the focus groups or with whom discussion was continued following the focus groups. In addition, the researchers interviewed people at the Chinese subsidiaries of these firms during spring of 2008 to get more first-hand knowledge of this important market.

In the third phase, the doctoral researchers carried out independent research. As regards to this study, the independent research stage consisted of product strategy research with the focus being on the topic of systems/solutions. As mentioned earlier, the focus on this topic already dates back to research that began prior to the commencement of the RESPONSE project. In this research, the author studied the use of a strategy of systems selling in Wärtsilä as a way to enhance the competitiveness of the company amid an industry shift to East Asia. Additional interviews were conducted in this topic area at Nokia, Perlos, and Kone during 2007-2008 as part of the RESPONSE project. Furthermore, some follow-up interviews were conducted at Kone and Wärtsilä in 2010, both to track the development of the solutions concept at these firms as well as to verify certain findings.

Moreover, during the third phase, the author also conducted research that, while linking with the topic of systems integration, nevertheless adopted a slightly different theoretical focus. More specifically, during the first phase interviews, a key challenge that arose in terms of Perlos' competitiveness was its dependence on Nokia as the biggest customer. This high dependence resulted from the way in which Perlos internationalized in Nokia's footsteps while the industry was rapidly growing and internationalizing. This topic provided for an interesting research opportunity and provided links with the concept of systems/solutions in that, due to high dependence on Nokia, Perlos was unable to respond to developments in the industry requiring capabilities in systems integration.

Some of the interviews during the third phase were conducted with firms not affiliated with the RESPONSE project. Mainly, interviews were conducted at Elcoteq and Aspocomp, which followed a similar pattern to Nokia-dependent growth, to allow for cross case comparisons. The author also interviewed the Executive Vice President of the National Innovation Fund several times given his background as a high level manager at Nokia as well as his research experience in the field of systems/solutions.

The topic of essay 2, which looks at the internationalization of Nokia-dependent, Finland based suppliers, was challenging in terms of data collection because sufficient understanding of the phenomenon required access to informants very high in the organizational hierarchy, such as board members and functional heads who had sufficient understanding of firm strategy and strategic relationships. Also, the phenomenon under investigation was retrospectively longitudinal thus requiring access to persons who knew the history of cooperation between Nokia and the suppliers for a period of over ten years. To accommodate for this, at times it was necessary to interview individuals who had already left the case companies. Access to all of these key informants was gained through the snowball sampling method.

3.5 Data analysis

Data analysis for each essay is reported separately in the respective methodology section. However, in general, the data analysis method utilized in the essays follows the thematic analysis method, whereby data is analyzed and reported according to identified themes and constructs that pertain to theoretical frameworks or propositions developed in individual essays. As argued by Lee (1999), qualitative data analysis is analogous to exploratory factor analysis in that data is reorganized into major themes or categories thus resulting in a few "factors" that explain the phenomenon under study better than data in its original form. In this process, constant comparison is important whereby data collection and analysis take place recursively (Suddaby, 2006), and drive further data collection efforts.

In practice, the author has sought familiarity with the case database through numerous rounds of reading through the interview transcripts and other supporting case material. Through juxtaposing the data with theory, it has been possible to develop relevant themes and categories, and to manually code the interview material for subsequent regrouping. To enable the voice of the interviewees to emerge, the author has sought to organize the data, so that original quotes by the informants are preserved.

3.6 Assessment of research method

A study is usually assessed against validity, reliability, and generalizability. These measures were originally developed for positivistic research and as such are not all directly applicable to phenomenological research. However, Remenyi et al. (1998, p.114) argue that the same criteria used to assess positivistic research can be applied to phenomenological research as long as the measures used are softer and refer to issues such as whether there has been consistency and integrity in study design. Good phenomenological research should consider whether conditions for validity, reliability, and generalizability have been met as they are understood by phenomenologists (Ibid, 114)

In phenomenological research validity results from gaining full access to the knowledge and meanings of respondents (Remenyi et al. 1998, p.115). As already mentioned, access in this study was ensured through close collaboration with corporate partners. Particular attention was paid to framing the research in managerially relevant terms, as suggested by Doz (2011). This made it possible to gain the support of the participating organizations and to benefit from managerial insights. To improve understanding of the respondents' meanings, the researcher worked to gain sufficient understanding of the company, its products, and the industry. This involved studying secondary material such as annual reports, company websites, articles, and press releases. Validity was further improved by tape-recording, transcribing, and verifying the interviews with respondents. Many of the interviews were attended by at least two researchers and interview findings were discussed among multiple researchers. Having the papers included in this study read by and commented on by key informants from the different case companies also helped to eliminate misunderstandings and to improve the validity of the study.

Reliability refers to the idea that similar observations should be made by other researchers on different occasions (Easterby-Smith et al., 1994). Thus, the study should be replicable. However, the concept of reliability is challenging in phenomenological studies because the studies are manifestations of a particular issue in a particular setting. These circumstances are difficult if not impossible to replicate. Thus, Marshall and Rossman (1999) argue that instead of trying to pretend that the study could be replicable, the investigator should follow good research practices such as establishing an audit trail, so that the evidence can be verified by others, if necessary. As already mentioned, most of the interviews in this study were tape-recorded and sent to

the informants for verification. All the transcripts related to the interviews have been filed as a database.

Lastly, generalizability refers to the applicability of the findings to other settings. Phenomenological research is less concerned with making statements about the commonality of findings than it is with gaining an understanding of organizational processes. The essays presented in this study rely on in-depth case studies of a limited number of firms in a limited context (MNEs based in Finland that are operating in highly global and mature or maturing industries). The objective has been to identify certain phenomena and to exemplify mechanisms that quite possibly also exist in other companies that conform to similar contextual conditions. Based on such investigations, the understanding gained of a process in one setting can form the basis on which such processes are understood in other similar companies (Gummesson, 2000).

The value of studying phenomena in context is highlighted in recent methodological debates in international business. For instance, Welch et al. (2011) strongly argue for more qualitative research that embraces context as an important analytical factor in the theorizing process. As noted by Welch et al. (2011), most qualitative research in international business conforms to Eisenhardt's (1989) inductive theory building research approach whereby the researcher's goal is to ultimately decontextualize case data in favor of broad generalizations. However, such an approach downplays the importance of contextual explanations that seek to specify causal mechanisms and the contextual conditions under which they apply. The fairly homogenous sample of case firms, and accompanying in-depth study and description of these cases offers a basis for providing a contextualized explanation of the phenomenon under study.

4 Introduction of case firms

This section provides brief summaries of the case firms. As mentioned previously, the main case firms analyzed in the study include Nokia (mobile phones), Kone (elevators and escalators), Wärtsilä (ship machinery), and Perlos (mobile phone parts). Consistent with figure 3, we briefly describe the firms' internationalization process and describe the ways in which the firms have attempted to enhance cost efficiency of operations while furthering differentiation through a transition to services and solutions.

4.1 Nokia

Nokia is a global mobile handset manufacturer headquartered in Finland with 38.7 billion Euros in net sales in 2011. Its products are sold in 160 countries around the world and manufactured in factories located in Europe, Asia, and Latin America. Its global sales are divided as follows: Asia 40%, Europe 31%, Middle East and Africa 14%, Latin America 11%, and North America 4%.

Nokia's history dates back to 1865, and as an industrial conglomerate, it has been involved in various industries including forestry, rubber, and consumer electronics. Following a severe crisis that resulted from unsuccessful international acquisitions, the disappearance of bilateral trade with the dissolved Soviet Union, and an economic depression in the domestic market, Nokia made the strategic decision in 1992 to focus on mobile handsets and networks. The network business of Nokia no longer exists as a separate entity since the creation of the joint venture Nokia Siemens Networks in 2007. The analysis in this study focuses on Nokia's mobile handset business.

Nokia has been involved in the development of telecommunication technologies since the 1960s when an electronics department was established in one of its units to produce radio-transmission equipment. Nokia introduced its first car phone model in 1982 and in 1987, the world's first mobile handset based on the Nordic NMT (Nordic mobile telephone) standard. A significant turning point was the adoption of GSM (global system for mobile

communications) as the European standard for digital mobile telephony in 1987. Nokia, having been an active member in its development, was well placed to exploit the new standard that would later become the most widely used cellular standard in the world. Nokia's first product based on the GSM standard was introduced in 1992 and from thereon, the company grew at a phenomenal rate, particularly as mobile phones quickly become smaller in size and more affordable.

The internationalization process of Nokia's telecommunication technologies can be traced to the late 1970s when its products were sold in neighboring countries such as the Soviet Union and Scandinavia. Internationalization to other European countries continued in the 1980s and an early foothold was gained in the US market through the establishment of a joint venture in 1984 with a US based distributer. The 1991 acquisition of a U.K based mobile phone manufacturer made Nokia the second largest manufacturer in Europe and third largest in the US. However, at this time, the market for mobile handsets was still relatively small as they were not yet mass market products. The company's pace of rapid growth and internationalization began in the 1990s. For instance, in 1994 and 1995, the firm doubled the number of phones sold compared to the previous year. Also, between 1992 and 1996, Nokia doubled the number of countries in which its products were sold from 60 to 120. By 1998 Nokia had become the world's largest handset manufacturer. Despite some early acquisitions, Nokia's internationalization has mainly relied upon organic growth and Greenfield investments.

During the past ten years the mobile handset industry has increasingly matured and growth in demand has shifted to the emerging economies. This has significantly heightened the strength of cost drivers in the industry. Nokia weathered this particular industry trend very well by relying on substantial scale economies, superior manufacturing and logistics efficiency, and early understanding of the importance of being able to offer devices in low cost segments. The company shifted manufacturing to lower cost countries and concentrated on squeezing costs in the value chain.

Furthermore, as a response to increasing maturity in traditional voice based mobile technologies, the industry has heavily promoted so-called digital convergence. Accordingly, in addition to traditional features such as voice and text message communication, mobile devices are increasingly being used to take and send pictures, listen to music, record video, surf the Internet, use e-mail etc. In this so-called smart phone segment, Nokia has adopted a "solution mode of operation" where the focus is on "complete user experience and the

seamless integration of hardware, services, applications, content, and context" (Nokia Form 20-F 2009). Despite this stated objective, Nokia has come under severe attack for its inability to provide compelling solutions for end users. This seems at least partly due to Nokia's relative lack of competitiveness in software development and content provision.

Traditionally, Nokia's competitors have included other handset manufacturers such as Motorola, Samsung, Sony Ericsson, and LG over which Nokia, for a long time, had a substantial market share lead. However, industry convergence has brought a wealth of new competitors that possess capabilities that are very different from Nokia's. For instance, companies such as Apple with extensive experience in software development, user friendly interfaces, and content provision capabilities, have been able to introduce appealing products in the smart phone segment. At the same time, free-to-use software platforms such as Google's Android have enabled original design manufacturers (ODM) from East Asia, such as HTC, to offer premium quality smart phones under their own brand, while new entrants in low cost phone segments are challenging Nokia's volume products. These developments have recently eroded Nokia's market position and profitability.

4.2 Perlos

Perlos no longer exists as an independent company because in 2007 it was acquired by a Taiwanese subcontractor, Lite-On, and its name was changed to Lite-On Mobile. Thus, with the name Perlos, we refer in this study to the company prior to its acquisition by Lite-On. In 2007, Perlos had net sales of 454 million Euros and manufacturing in eight factories in Europe, Latin America, and Asia, and sixty-four percent of its sales were generated outside of Europe.

Perlos was established in 1953 as a manufacturer of plastic components used in various industrial applications. In the early 1990s, focus shifted to mechanical parts required in mobile handsets, such as mobile phone covers and frame components, connectors, and antennas. The company was Nokia's key supplier for most of the 1990s and for some years after 2000.

Perlos exported its products since the 1950s. A more significant commitment to international markets was made in the mid-1980s through the establishment of a manufacturing unit in the UK. However, a larger scale internationalization effort only began in the 1990s when Perlos began to build factories around the

globe to serve mobile handset manufacturers with Nokia as the largest customer. The market for mobile handsets grew exponentially with global demand growing between 1991 and 2000 from 6.2 million to 402.3 million units. To support this growth, factories were established in the US, Hungary, and China. After the turn of the millennium, investments were continued to establish factories in Brazil, Mexico, and India.

Perlos' position in global markets was built on a superior customer relationship with Nokia, good manufacturing know-how, and the capability and willingness to rapidly build and ramp up global manufacturing operations to support Nokia's growth. By cooperating with relatively small, customer-dependent suppliers that had sufficient capabilities, Nokia was able to ensure that suppliers such as Perlos remained highly responsive to its needs.

After the turn of the millennium, the nature of the industry changed dramatically with heightening of cost drivers. Perlos attempted to address this through relocating production to lower cost countries, but these actions were insufficient. Mainly by being too closely tied to Nokia, Perlos lacked sufficient scale economies. Furthermore, the company was not able to respond to industry developments calling for greater systems integration capabilities. Following the maturation of the industry and ensuing pressures to build greater cost efficiency in the industry value chain, the structure of the supply chain shifted in favor of large scale ODMs acting as system integrators. Such ODMs are able to design and manufacture integrated subassemblies and complete mobile phones based on a model of vertical integration. These suppliers can provide a short lead time for product delivery, a fast development cycle, and lowered total costs. Consequently, large East Asian ODMs characterized by a high degree of vertical integration and scale economies afforded by horizontal diversification across industries have largely come to dominate the industry. As a result of diminished competitiveness and continued weak financial performance, a Taiwanese ODM, Lite-On, acquired Perlos in 2007.

4.3 Kone

Kone is a Finland based global provider of elevators, escalators, automatic doors, and related services. In 2011 the company had annual net sales of 5.2 billion Euros. Service business accounted for 54% of sales while new equipment sales accounted for 46%. Kone has manufacturing units located in

Europe, Asia, North America, and Latin America, and more than 1000 offices around the world. In terms of geographical spread, 55% of sales come from Europe, Middle, and Africa, 27% from Asia, and 18% from the Americas. The global industry is dominated by a limited number of companies that account for about 60% of the global market and Kone is among the top four manufacturers in its industry.

Established in 1910, Kone has experimented with a range of industries such as textile manufacture, medical technology and the design of hydraulic piping systems. However, the firm's main focus has always been on the elevator and escalator business. Kone has a very long history as a fully-fledged international firm by Finnish standards. While most of Kone's postwar production capacity was geared towards war reparations to the Soviet Union, already in the 1960s the company had begun an acquisition-based internationalization strategy. The company's management believed that rapid international growth was the only way to ensure the firm's long-term viability and to avoid being eventually acquired by a larger, international competitor. This strategy has been implemented through a series of acquisitions that at times have seen Kone absorbing companies larger than itself.

Kone's first cross border acquisition took place in 1968 when it acquired a Swedish competitor that was bigger than Kone at the time. This acquisition turned Kone into the largest manufacturer in northern Europe. Another major acquisition in the company's early internationalization period took place in 1975 when it acquired a US based competitor's operations in Europe. In the 1960s and 1970s, Kone also acquired manufacturers in Spain, Austria, France, Germany, and England.

Kone's early acquisitions focused on Europe, but since the 1980s, it has sought greater geographical spread by also acquiring companies outside of Europe, for instance in North America. Furthermore, since the 1990s, Kone has purposefully built its presence in Asia. In 1998 the company made a Greenfield investment to establish a factory in China and has later entered into a joint venture with a local Chinese elevator manufacturer. These investments have been important to build the firm's presence in what is today the world's largest market for elevators and escalators. After the turn of the millennium, Kone has also enhanced its presence in other emerging markets through investments, for instance, in India and Russia.

Kone has traditionally been a technological innovator and is probably the best known for development of proprietary technology that eliminates the need for a separate machine room for elevators. This technology was key to the

firm's early success in China where, unlike its competitors, Kone entered with the newest technologies and products. However, due to increasing industry maturity, the technological gap between Kone and its competitors has been diminishing. Moreover, informants at Kone believe that new innovations, when developed, are more rapidly diffused to competitors than before. Thus, the firm's future competitiveness cannot rest solely on technological leadership, and other sources of differentiation should be found. Increasing industry maturity and growing demand from the emerging economies have also prompted efforts to improve cost efficiency.

Due to the nature of the industry, and also as a legacy of its acquisition-based internationalization strategy, Kone pursued a multidomestic strategy until the mid-1990s. Country subsidiaries replicated the entire value chain and managed operations rather independently. This resulted in very high operating costs and in 1995 a decision was made to improve profitability through increased standardization of products, processes, and procedures. This was made easier by increasing unity in technical standards and norms. The network of foreign production plants was also gradually rationalized and several decisions to divest were implemented in Europe. Kone has continued to improve cost efficiency through development of globally standardized product platforms that rely to a large extent on external providers of modularized systems and use globally standardized components. These contracted modules can be directly shipped to the construction site where the elevator is assembled. Factories have also been established in low cost locations in Asia.

While addressing the cost drivers in the industry, Kone has also attempted to enhance its differentiation advantage by redefining itself as a provider of people flow and access solutions. From about 2005, the firm has attempted to drive a gradual change in firm mentality and ways of operating that facilitate greater focus around the customer. With these changes, Kone's aim is to enhance the ability of building users to move smoothly, safely, comfortably, and without delays in buildings. A further development of its service business has been a major driver for growth and profitability. The company even considers the business to be service driven in the sense that product sales without possibilities to add services are deemed unattractive. The company has very heavily invested in acquiring smaller elevator companies with the primary purpose of enlarging its serviceable installed base. The service division offers a full range of product-related services.

4.4 Wärtsilä

Wärtsilä is a Finland based global provider of power solutions for the marine and energy markets. In 2011 the firm had net sales of 4.2 billion Euros and had operations in more than 70 countries around the world. Its geographical split of sales is as follows: Europe 30% of net sales, Asia 38%, the America's 20%, and others 12%. Its factories are located mainly in Europe and Asia. Wärtsilä is composed of three divisions: ship power (24% net sales), power plants (32%), and service (43%). The findings reported in this study concern the firm's ship power division and related service operations. The ship power division's most important product group has traditionally been its medium speed diesel engines and the company is the global market leader in this product segment.

Established in 1834, Wärtsilä has a relatively long history as a Finnish industrial conglomerate. The company has been involved in a range of industries, including manufacturing of ships, diesel engines, paper machines, porcelain, and locks. Today, engine manufacturing activities form the core of the company. The company first experimented with manufacturing diesel engines in the 1930s based on a license from the German conglomerate Krupp. They accumulated know-how in diesel manufacturing technologies during the post war era, as Wärtsilä supplied ships to the Soviet Union in the form of war reparations. In 1978 the company made its first major technological breakthrough when it developed a medium speed engine type that could run on heavy fuel oil. Such an engine led to greater operating economy on board ships. The success of this product formed the basis of Wärtsilä's initial international success, and the company has from thereon built its international presence based on technological competence and product innovation.

Wärtsilä has internationalized mainly by acquiring competing manufacturers in Europe and by gradually building a global network of sales and service subsidiaries. In 1978 the company made its first international acquisition and bought a Swedish diesel manufacturer, followed in the 1980s and 1990s by acquisitions of manufacturers based, for instance, in Sweden, Spain, France, the Netherlands, and Italy. The primary purpose of these acquisitions was to build Wärtsilä's share of the global diesel engine market. Wärtsilä has historically allowed acquired manufacturers to operate fairly independently with little restructuring taking place.

A major development in the industry has been the geographical shift of shipbuilding activities to East Asia, first to Japan, and later to South Korea and China. This has meant escalating cost pressures for industry incumbents.

Following deterioration in its financial performance, Wärtsilä began, in the late 1990s, a global restructuring program. This program has involved rationalizing production into fewer and larger factories, increasing reliance on external providers of parts and sub-modules, and relocating parts of its production to East Asia, particularly to China. Relocating production to Asia was a major shift for the company that had, as a legacy of its acquisitions, most of its manufacturing operations based in Europe. A greater focus on Asia in terms of manufacturing has enabled Wärtsilä to benefit from lower manufacturing costs and to gain better customer proximity.

Following the turn of the millennium, another major shift for the company has been a redefinition of itself from an engine manufacturer to a provider of total lifecycle power solutions. As part of this strategy, the company has grown considerably its product portfolio and capabilities through acquisitions of related businesses. The first major acquisition took place in 2002 when Wärtsilä acquired a global supplier of marine propulsion systems based in the UK and has from thereon continued with a series of acquisitions in the fields of automation, naval architecture, and maritime engineering. As a result of these acquisitions, the firm has attempted to improve its ability to deliver integrated solutions that consist of the engine, propulsion equipment, and related control and automation systems. By internalizing different capabilities in related system areas, Wärtsilä is able to better guide the long-term development efforts of the different solution components, with the aim of developing solutions that have been designed to optimize lifecycle performance. The company's solutions are, for instance, aimed at achieving greater fuel efficiency, environmental friendliness, and operational reliability. The firm's solutions also ensure interface compatibility and reduce customer risks.

Closely linked to Wärtsilä's solutions strategy is the utilization of a global service infrastructure to offer services to support solutions and equipment installations during their lifecycle. The company has consistently grown its global service infrastructure both through organic growth as well as acquisitions. Its service division offers a full range of product-related services such as spare parts, equipment repair, modernization, operation, and maintenance contracts.

5 Summaries of the essays

This study consists of four essays. Table 1 summarizes the content of each essay. As is evident under the column "main theories used", the essays draw on a wide range of supporting literature – not all of which is discussed in the introduction to this thesis. However, each of these essays helps in some way to address the research questions posed in the introductory chapter.

Essay no.	Essay title	Essay objective(s)	Theoretical perspectives	Methodology
1	Shifting strategies and patterned capabilities: exploring the dynamics of strategic fit	• To explore how firm competitive strategy shifts over time as a response to changes in the firm's internal and external contingencies, so as to develop an integrated and more dynamic perspective to strategy formulation in global markets	• Strategic fit (Zajac et al., 2000) • Generic competitive strategy (Porter, 1985) • RBV (Barney, 1991; Teece et al., 1997) • Firm internationalization (Tallman and Fladmoe-Lindquist, 2002)	• Case study of Wärtsilä, Kone, and Nokia.
2	The challenge of MNC led growth and internationalization: the case of Nokia dependent suppliers	• To enhance understanding of the conditions under which supplier customer relationships characterized by asymmetrical power and dependence can be mutually beneficial despite the problems traditionally associated with relationship asymmetry.	• Power and dependence (Emerson, 1962)	• Case study of Nokia and its suppliers: Perlos, Aspocomp, and Elcoteq
3	Service transition strategies of industrial manufacturers	• To produce a more accurate portrayal of the organizational logics and challenges involved in managing a transformation towards greater service intensity among industrial manufacturers.	• Service transition strategies (Fang et al., 2008) • Solutions selling (Evanschitzky et al.,2011)	• Case study of Wärtsilä and Kone
4	Systems sales as a competitive response to the Asian challenge: case of a global ship power supplier	• To explore how systems sales can be used to achieve competitive advantage against cost-based competition	• Systems selling (Kosonen, 1991) • Generic competitive strategy (Porter, 1985) • RBV (Barney, 1991; Teece et al., 1997)	• Single case study of Wärtsilä

Table 1: Summaries of dissertation essays

While each of the dissertation essays has its own individual objectives and theoretical perspectives, they can all be positioned in terms of the conceptual framework presented in figure 2. This illustration is provided in figure 4.

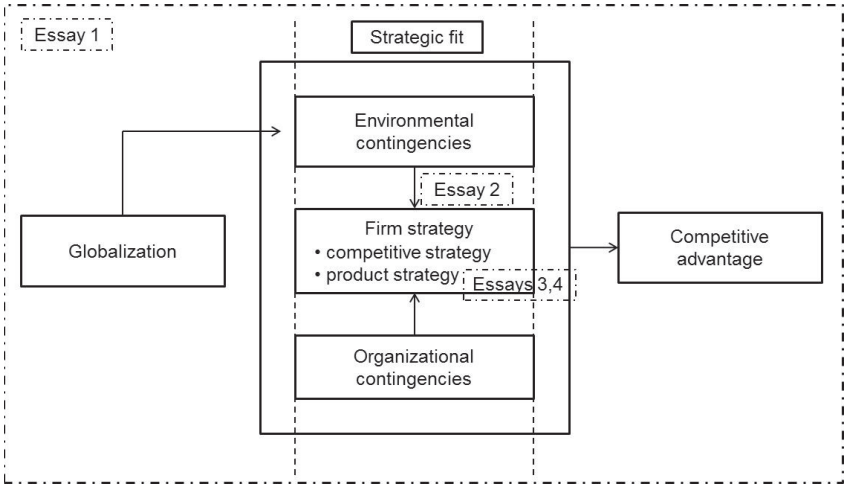

Figure 4: Positioning of the dissertation essays

All of the dissertation essays are consistent with the logic of the conceptual framework presented in figure 4. Essay 1 is the most broadly focused and aimed at providing a more holistic understanding of the conceptual framework and the mechanisms that underlie it. Essay 2 draws particular attention to the importance of the external competitive environment as a key driver that causes changes in firm level strategic behavior. Essays 3 and 4 are most focused around the firm's product strategy in the form of transition into services / solutions. A brief description of the essays is provided below.

5.1 Essay 1

Salonen, Anna (2011). Shifting Strategies and Patterned Capabilities - Exploring the Dynamics of Strategic Fit. A paper presented at the *11th Vaasa Conference on International Business*, August 24-26, University of Vaasa, Finland.

The purpose of essay 1 is to provide an integrated perspective to strategy through the concept of strategic fit, whereby competitive advantage is contingent on a careful management of fit between strategy, firm capabilities,

and changes in the competitive environment. The essay draws on the multiple case study methodology, with Wärtsilä, Kone, and Nokia acting as the case firms. While the firms studied have adapted their competitive strategies and underlying capabilities at different paces due to differences in industry dynamism, they nevertheless depict strikingly similar patterns of strategy and capability development. Essentially, all three case firms have internationalized with a differentiation strategy based on product leadership. This strategy has later been complemented by increased focus on cost efficiency of operations, and later, by efforts at finding new sources of differentiation through transitioning to services and customer-focused solutions. Based on the cases studied, we argue that firm strategy must stay responsive to changes in the competitive environment while relying on clear patterns of capability development. When the external environment calls for changes in strategy that represent a discontinuous evolution in terms of underlying firm capabilities, the focal firm faces significant barriers to successful strategic change, particularly if environmental change is rapid.

5.2 Essay 2

Salonen, Anna and Gabrielsson, Mika (2012). The Challenge of MNC-Led Growth and Internationalization – the Case of Nokia Dependent Suppliers. *Journal of Business-to-Business Marketing*, 19(2): 147-173.

Essay 2 is an in-depth case study of Nokia and three of its Finland based suppliers that have grown and internationalized in a customer-led manner. The paper is focused on gaining a better understanding of supplier-customer relationships in the context of asymmetrical dependence. More specifically, we are interested in developing an enhanced understanding of the conditions under which such relationships can be mutually beneficial despite the problems traditionally associated with relationship asymmetry.

In terms of the dissertation project, this essay serves two important purposes. Firstly, it draws attention to the importance of the external competitive environment as a key driver that causes changes in firm level strategic behavior. We explain deterioration of the relationship between Nokia and its Finland based suppliers through reference to changes in the external competitive environment. As is demonstrated through the experiences of Nokia's Finland based suppliers, failure to sufficiently understand the nature of

the changes that are occurring in the external competitive environment and to respond to these changes in a timely manner can have drastic consequences for firm-level competitiveness. We also find in this essay support for the importance of transitioning towards systems / solutions in later stages of the firm's internationalization process, so as to maintain competitiveness in an increasingly mature industry.

5.3 Essay 3

Salonen, Anna (2011). Service Transition Strategies of Industrial Manufacturers. *Industrial Marketing Management*, 40(5): 683-690.

Essay 3 is an in-depth case study of Wärtsilä and Kone. The purpose of this study is to provide a more holistic understanding of the service transformation process among industrial manufactures and to explore the ways in which these manufacturers exploit different types of service intensive strategies, ranging from basic to more advanced. We furthermore investigate the solutions selling concept as a promising alternative through which to transition towards advanced services while building on and strengthening the competitiveness of the firm's core product manufacturing operations.

In terms of the dissertation, essay 3 is important because it enables a clear portrayal of the organizational logics and challenges involved in managing a transformation towards greater service intensity. We find that industrial manufacturers are implementing different types of service transition strategies ranging from those in support of the supplier's product (SSP) to those in support of the client's action (SSC). SSP are mainly commercialized through the service division that offers services to the installed base of equipment. The service division is the most profitable and highest growing part of the case companies' businesses, and important in steadying their revenue streams. At the same time, industrial manufacturers are increasingly transitioning to services in support of the client's action (SSC) through a strategy of integrated solutions. The shift towards solutions reflects a cultural reorientation, whereby the firms studied are gradually shifting focus away from product features towards greater orientation around customer processes, so that value can be added in other ways besides pure technological innovation. Such a transition helps to enhance the competitiveness of the firm's core product business in a relatively mature industry where technological leadership alone is insufficient.

5.4 Essay 4

Salonen, Anna; Gabrielsson, Mika; and Al-Obaidi, Zuhair (2006). Systems Sales as a Competitive Response to the Asian Challenge: Case of a Global Ship Power Supplier. *Industrial Marketing Management*, 35(6): 740-750.

Essay 4 is based on an in-depth case study of Wärtsilä. It investigates the value creation logic of a solutions strategy with the aim of developing a process model through which to explain how a transition to systems selling helps to enhance the competitive advantage of the focal firm. Empirical findings from this study suggest that systems selling is a value-enhancing strategy whereby the seller integrates into the buyer's value chain and takes over the buyer's value activities related to systems integration. We argue that transitioning to systems selling has the potential to lower total costs for the buyer and to result in enhanced customer performance. The process model developed in the essay details how this value adding occurs, including required resources, the kinds of customers likely to be receptive to systems selling, requirements for cost control, ways to build entry barriers for competitors to enter systems business, and finally, ways of communicating the resultant value to customers.

6 Discussion[1]

The purpose of this study has been to investigate globalization and its firm level effects. More specifically, at the outset of the study, we posed the following main research question: *How is the environmental change of globalization affecting the way in which MNEs strive to sustain a competitively superior industry position?*

In general terms, the experiences of the case firms suggest that as a result of globalization, competitive intensity and the pace of change in the external competitive environment have greatly escalated, thus leading to a more dynamic perspective on strategy and competitive advantage in global markets. We have investigated this development through the concept of competitive strategy by posing the following sub-question: *How does the MNE's generic competitive strategy evolve to maintain fit with a changing external competitive environment?*

This development has been investigated in detail through essay 1. In this essay, we acknowledge that Porter's original conceptualization, though useful in its parsimony, is overly static in nature and does not explicitly address the appropriateness of particular generic strategies to different environmental contingencies. Thus, successful strategy is more about maintaining fit with a changing competitive environment than about choosing and maintaining a static industry position. We explicate this development in more detail in the context of firm internationalization processes.

The case firms reported in this study have built their international positions through a differentiation-driven strategy that has been based on product excellence as well as the underlying capabilities in R&D and technology development. At the same time, these firms have looked towards new strategies and capabilities to match changes in the external competitive environment. More specifically, the firms studied have, in the later stages of internationalization, paid particular attention to cost efficiency as the external industry conditions have evolved in a direction that has both enabled and

[1] This section will not discuss findings of the study in relation to previous literature. Linkage to previous literature will be made in the conclusions section.

forced such a shift. Mainly, the phenomenon of globalization has both enabled and forced firms to improve cost efficiency, for instance, by rationalizing and relocating production to lower cost locations, and to increase externalization through greater use of external partners in sourcing and manufacturing operations. Nokia is the only one of the four firms that managed for some time to shift from a differentiation-based strategy to one of simultaneous cost leadership due to its extensive scale economies as well as industry leading practices in logistics and demand and supply network management. Wärtsilä, Kone, and Perlos have continued to base their competitive advantage primarily on differentiation-driven initiatives while building greater cost efficiency of operations.

We also posed a second sub-question at the outset of this study concerned with evolving product strategies of MNEs: *How does the MNE's product offering strategy evolve to maintain fit with a changing external competitive environment?*

Thus, in this study we have investigated the process of firms transitioning from products to services and customer-focused solutions, as an empirical illustration of the way in which firms can enhance their competitive advantage in global markets through organizational innovation that enables logical evolution of underlying firm capabilities. Such a progression has involved concerted efforts to enhance the case firms' original competitive advantage based on product leadership through recombination with new complementary capabilities. This development from products to services and solutions has been investigated through different angles in the individual dissertation essays.

In the case of Wärtsilä and Kone, both have fought commoditization pressures in their core product businesses by first developing a global service network to provide services to the installed base of products. The service division is the most profitable and highest growing part of their businesses. Services are also extremely important to steady the revenue streams of these firms. Wärtsilä and Kone have then transitioned to offer integrated solutions primarily as a means to enhance the competitiveness of their core product business. This transition has entailed a cultural shift away from an engineering-driven perspective to a customer focused one, and the building of greater understanding of customer needs and processes. Such a strategy enables them to develop offerings where the value proposition centers on ways to better support client actions. In the case of Wärtsilä, an integrated solution, for instance, decreases customer risk and enhances important operational priorities such as fuel efficiency, environmental friendliness, and equipment

reliability. In the case of Kone, its solutions address important customer priorities such as speed of construction process, which is important for the constructor; and optimized people flow and access, which is important for the building user.

A solution transformation essentially shifts the focus away from product functionalities towards greater emphasis on end-user processes. Both firms have emphasized that the transition is a gradual one and requires a fundamental cultural change in these organizations that have strong product and engineering foundations. Also, the needed resources and capabilities are slow to build. At the same time, the development path has been a logically continuous one. For instance, at Wärtsilä and Kone, the product has an extended lifecycle that requires service operations thereby making an expansion to service based business a natural evolution. Similarly, in terms of customer-specific solutions, Kone and Wärtsilä operate in business-to-business fields that are characterized by a limited pool of customers with whom collaboration takes place on a long term basis. Thus, the firms have throughout their operating histories accumulated significant stocks of know-how related to customer operations and business priorities whereby a solutions orientation represents a way of better utilizing and further developing many of the capabilities that already exist in these organizations.

In the case of Nokia, the company has similarly attempted a transition towards services and solutions. However, this transition has been somewhat difficult. For one, the link between the firm's core product capabilities and those needed to provide services and solutions is less clear than in the case of Wärtsilä and Kone. More specifically, the capabilities needed to develop and manufacture physical handsets differ quite drastically from those needed to develop content creation services or to develop software capable of supporting a unique user experience. Furthermore, the evolution in required capabilities has needed to be realized in an extremely short frame in an environment where the firm is being challenged with entry of new players with an established base in capabilities that have become critical for continued success in the industry. At the same time, traditional core capabilities in handset manufacturing operations have commoditized extremely rapidly.

Finally, as discussed in essay 2, Perlos did not even properly initiate the process of transitioning towards larger scale systems / solutions due to its high dependence on Nokia and slowness in responding to changes in the external competitive environment. In the case of Perlos, in conjunction with the maturation of the industry, the structure of the supply chain shifted in favor of

large scale ODMs acting as system integrators. These ODMs are able to manufacture and integrate subassemblies or even complete mobile phones based on a model of vertical integration. Such suppliers can provide a short lead time for product delivery, a fast development cycle, and lowered total costs. This development on the supply side supports the trend of mobile handset manufacturers themselves shifting emphasis further downstream towards the customer in the form of services and content provision. In many cases physical manufacturing of handsets has become a peripheral rather than a core activity. Thus, many handset manufacturers have increasingly outsourced the manufacturing of handsets to ODMs and some new players such as Apple have entered the industry without ever having internal handset manufacturing operations. Perlos was unable to keep abreast with this development. While it acquired, for example, project management and design capabilities, important skills needed for an ODM, it would have nevertheless needed to significantly enlarge its delivery scope beyond the physical housing module, so as to be able to provide a more complete solution for the end customer. Thus, Perlos, partly due to over-embeddedness in its relationship with Nokia, did not begin the process of strategic change early enough and was, as a result, acquired by a competitor.

Connected to essay 2, it seems that one of the most challenging side effects of globalization has been the way in which some industries have become extremely dynamic, whereby external change is both fast and profound. This development is most pronouncedly demonstrated through the case of the mobile handset industry. As described in essay 2, it is an industry that has progressed from international growth to maturity in a time period of about ten years. Sustaining competitiveness in such industries is extremely difficult due to rapid changes in the basis for competitive advantage. The difficulty of doing this is most clearly demonstrated by the case of Perlos, which did not respond to certain key industry trends, and which, retrospectively speaking, would have required drastic shifts in strategy. The company essentially built its global presence on a superior customer relationship with Nokia, sufficient manufacturing know-how, and the capability and willingness to rapidly build and ramp up global operations. While this recipe explains much of the firm's early success, Perlos did not upgrade its original advantages to a sufficient extent. For one, in this particular industry, sustained competitiveness would have required a rapid shift to enhanced cost efficiency at the turn of the millennium to mirror increasing industry maturity and growing competition from East Asia. Despite this, Perlos remained in high cost locations for too long

and more importantly, was unsuccessful in sufficiently diversifying its customer base to afford itself sufficient scale economies. In terms of differentiation-based advantages, the firm did not develop capabilities in systems integration even through the industry requirements began to increasingly favor such an approach.

Further, Nokia is currently experiencing severe challenges in terms of the ability to renew itself. These challenges can at least partly be attributed to the new types of resources and capabilities that have needed to be built within a short time frame to support the company's evolution into a service and solution provider. These resources and capabilities essentially represent a discontinuous evolution compared to the firm's traditional product manufacturing operations. Wärtsilä and Kone have fared better due to the more stable nature of the respective industries and the possibilities to more logically build upon core capabilities in product manufacturing operations while gradually transitioning towards services and solutions. With regard to Nokia, a solution orientation would entail sophisticated combinations of hardware, software, and content creation services to deliver complete end-user experiences. Beyond hardware manufacturing capabilities, such activities lack clear links to the firm's existing capabilities, thus representing a discontinuous development. Nokia is still early in its transformation process and is somewhat struggling with the approach due to the lack of clear competences and capabilities in these new fields.

7 Conclusions

At the outset of this study we presented different perspectives on the multinational, as categorized by Forsgren (2008). We then proceeded to argue that changes in the external environment, described in this study through the globalization phenomenon, have profoundly changed the nature and behavior of the multinational.

More specifically, traditional MNE theory, as portrayed through the views of the dominating and coordinating multinational (Forsgren, 2008), describes the multinational as an entity that carries with it the competitive advantages built in the home environment, which enables it to overcome the liability of foreignness and to benefit from foreign location advantages (Hymer, 1976; Caves, 1982). While this is still largely true, it has also become much more difficult for firms to continue deriving benefits from their original advantages due to increasingly rapid diffusion of advantages among competitors and overall increased levels of competition. Thus, a more accurate depiction of the successful MNE is an entity that not only exploits its existing advantages, but also actively builds new ones, as suggested by the perspective on the knowing multinational. At the same time, and as suggested by the perspective on the designing multinational, the way in which this upgrading is done must be consistent with the changes in the MNE's external environment. Due to the emphasis placed on the external environment as a driver of changes at the firm level, the perspective on the designing multinational, which is based on contingency theory, has been the focal perspective in this study.

In terms of contingency theory, we have chosen to apply it to issues concerning firm strategy, and have thus relied on the concept of strategic fit. More specifically, as depicted in figure 2, we have conceptualized firm strategy as a balancing process in which the firm seeks to maintain alignment with the external competitive environment, but does so in ways that are consistent with its organizational constraints. To illustrate these processes in more detail, we have explored the development of competitive strategy through the firm's internationalization process and have furthermore illustrated changes in strategy through the product-based perspective. Product level changes have been utilized in previous research as a proxy for changes in strategy (Romanelli

and Tushman, 1994) and product strategies have been found to mirror the firm's capability development (Helfat and Raubitschek, 2000; Shamsie, Martin, and Miller, 2009). Thus, the product strategy perspective enables one to illustrate how firms change their strategies through time as a response to changes in the external environment, while taking into consideration organizational constraints. In this study, we have focused on the transformation of product manufacturers into service and solution providers (Wise and Baumgartner, 1999). We argue that this shift provides an empirical illustration of how firms change strategy in systematic ways (Zajac and Shortell, 1989), so as to maintain fit with a changing external environment, while building on a logical and continuous evolution of firm-specific capabilities.

Overall, the findings in this study support the notion that competitive advantage has become increasingly more difficult to sustain, leading to notions of a series of temporary advantages in which strategic change becomes a necessity for success (Wiggins and Ruefli, 2005). Thus, as pointed out by D'Aveni et al. (2010), firms do not stick with just one type of advantage, but rather constantly seek new sources of advantage that match the rapidly evolving external competitive environment. At the same time, firms need to maintain a degree of consistency as a necessary condition for survival (Lamberg et al., 2009). Accordingly, the firm's ability to adapt itself is constrained by the path-dependent nature of resources and capabilities needed to support particular strategies (Miller and Friesen, 1984; Barnett and Hansen, 1996; Sheth and Sisodia, 2002). Therefore, it seems that firms must become increasingly adept at managing the paradoxical challenge of driving strategic change, so as to maintain fit with a rapidly changing external competitive environment, while somehow maintaining consistency with internal organizational contingencies in the form of the resources and capabilities needed to support particular strategic redirections.

Given the increasingly turbulent competitive environment faced by the modern multinational, substantive research has been conducted on the transformative aspects of firm resources and capabilities. Particularly the so-called dynamic capabilities stream (e.g. Teece et al. 1997; Eisenhardt and Martin, 2000; Winter, 2003) emphasizes the importance of the firm's ability to develop new capabilities to address rapid changes in the external competitive environment. However, as noted by (Schreyögg and Kliesch-Eberl, 2007, p.914), the presumption of capability dynamization threatens to "crowd out the genuine essence of an organizational capability". More specifically, given that

organizational capabilities are based on learning processes and subject to constraints such as path-dependence, organizational inertia, and previous commitments, there are likely to be limits to capability dynamization.

Based on the cases studied, we would argue that firms are capable of even radical changes, thus creating completely new types of capabilities to address changes in their external environment, as is evidenced through a transition from a focus on product technologies to adoption of a service and solution orientation. Such a shift changes the logic of the firm's value creation efforts and highlights the importance of developing entirely new types of capabilities that link with customer processes rather than product technologies. At the same time, this change is better described as a stage-wise evolution rather than an overnight revolution.

Connected with the above point, we would argue that the transformative aspects of firm capabilities benefit greatly from an evolutionary perspective, which stipulates that capabilities evolve gradually and proceed along logical steps or stages that correspond to current and expected industry requirements (Amit and Schoemaker, 1993). We have more specifically drawn on Helfat and Peteraf's (2003) concept of capability lifecycles to demonstrate how success in international markets is predicated on well managed capability branching that preserves the value of the firm's original core capabilities, while recombining them with new ones thus providing improved fit with a changing external environment.

We have studied the development described above through the firm's internationalization process in order to explore how the case firms studied have first replicated home grown capabilities in international markets and later, in response to changes in the external environment, have proceeded with strategic renewal by recombining original capabilities with new complementary ones. This has resulted in a gradual process of evolving from a focus on product/technological excellence to building greater emphasis on services – particularly in the form of customer-specific solutions. In this process, original core capabilities have not been abandoned in the form of retirement or retrenchment. If the external industry environment has changed so rapidly so as to threaten original core capabilities with obsolescence, as in the case of Nokia, the focal firm has faced significant barriers to successful strategic change.

In conclusion, it seems that, at least in the industrial manufacturing sector, a shift to services and solutions presents a viable alternative through which to tackle conflicting demands for simultaneous strategic change and consistency

that enables gradual co-evolution of firm capabilities and changing industry requirements. If the external industry environment changes extremely rapidly, as it has in the mobile handset industry, it may be difficult to manage the capability branching process fast enough to successfully transition into service and solution-based business. How to then tackle the demand for strategic change is a difficult question, and one for which future research is needed.

7.1 Theoretical contributions

The theoretical contributions of this study can be addressed on multiple levels. Each of the essays included in the study has its separate contribution. Rather than repeat them here, we highlight what we consider to be the overall contributions of the larger research effort at hand.

At the outset of the study, we had the broad objective of examining the phenomenon of globalization and its firm level effects. More specifically, we have utilized the globalization phenomenon as a representative of the changes that are occurring in the firm's competitive environment and have studied the effects of these changes on firm level strategic behavior. By explicitly turning the focus on the external competitive environment, and changes in it, as a driver of firm level strategic behavior, we have given prominence to the perspective of the designing multinational (Forsgren, 2008). This perspective, based in contingency theory, has served as a focal lens through which to explain the behavior of the multinational enterprise.

Most existing studies on the MNE that build on contingency theory adopt a structural contingency perspective (Burns and Stalker, 1961; Lawrence and Lorsch, 1967; Donaldson, 2001), but the same argument can be extended to the strategy perspective (Chandler, 1962). In the strategy field, contingency-based perspectives have been investigated through the concept of strategic fit. Despite its historic centrality and intuitive appeal, the concept of strategic fit has been notably absent from more recent research (Zajac et al., 2000). Furthermore, most existing studies of fit adopt a static orientation (Ibid). Given increased environmental dynamism (D'Aveni et al., 2010), there have been calls for more research that assesses the concept of strategic fit using a longitudinal perspective (Venkatraman, 1989; Zajac et al. 2000).

We thus contribute to existing research by firstly refocusing MNE research on the perspective of the designing multinational (Forsgren, 2008) that is based on contingency theory. From a strategy perspective, we contribute to the

concept of strategic fit by exploring how firm strategy shifts over time and as a response to changes in the firm's external competitive environment, but in ways that correspond to its internal base of capabilities. Through this, we are able to develop an integrated and more dynamic perspective to strategy formulation in global markets that takes into account both external and internal contingencies faced by the firm, as well as their interaction over time. This is likely to present a more accurate portrayal of firm strategic behavior than research that adopts a static perspective, or that only draws on environmental or resource-based explanations of competitive advantage.

In terms of the generic competitive strategy concept, which has served as a focal theoretical perspective in this study, we give further support to previous findings that competitive strategy is not just about choosing and implementing a strategy of cost or differentiation, as implied in its original formulation. Rather, competitive strategy consists of choosing a strategy that is properly aligned with environmental contingencies (Campbell-Hunt, 2000), and changes in the competitive environment must be matched by changes in strategy (Zajac and Shortell, 1989). In this process, firms can shift strategies and even adopt hybrid ones of simultaneous cost and differentiation (see also Salonen et al. 2007). However, instances of strategic change must be premised on well managed capability lifecycles (Helfat and Peteraf, 2003), whereby the firm may continue to develop an existing capability or attempt to implement capability branching – a process we have described in this study through a transition from products to services and solutions.

Finally, this study contributes to literature on firm internationalization processes (Johanson and Vahlne, 1997) in that we describe the nature and importance of capability development in different stages of this process, and suggest an additional stage, so as to sufficiently capture the dynamics involved. More specifically, while it has been acknowledged that MNEs must and do upgrade their initial advantages as a result of increased international activities (e.g. Luo, 2000), this need is not explicitly addressed in existing depictions of the internationalization process. Moreover, the literature suggests (e.g. Tallman and Fladmoe-Lindquist, 2002; Gabrielsson and Gabrielsson, 2003) that the process consists of two distinct stages – firm internationalization and firm globalization, whereby the firm first configures its activities in international locations, and then, in the second stage, consolidates them. However, we argue that such an approach does not sufficiently account for the multidimensionality of the phenomenon at hand. More specifically, contrary to existing research, we find evidence that firms do not merely internationalize

with a particular capability and then increase efficiency through coordination. Instead, efforts at strategic renewal are also important, so as to maintain competitiveness in a changing environment. We discuss this process in detail in essay 1 and have termed the third stage global regeneration.

To conclude, we thus suggest that research concerning firm internationalization processes should pay more attention to capability development patterns that enable sustained competitiveness in international markets. Currently, much of the research concerning firm internationalization processes stresses the importance of explicating the extent (e.g. geographical spread) and nature (e.g. configuration vs. coordination) of firm internationalization. However, a more interesting aspect would be to study capability development patterns through the firm's internationalization process. Arguably, this would result in theories that move beyond describing the process of internationalization to explaining how this process actually contributes to sources of firm-specific advantages. As theories currently stand, these processes are described through, for instance, strategic asset-seeking behavior (Dunning, 1993), but we know relatively little about the specific mechanisms that lead to upgrading of initial firm advantages or the capability development patterns that result. Also, more emphasis should be placed on understanding firm internationalization as a nonlinear, but nevertheless continuous process of configuration, coordination, and regeneration. In the regeneration stage, it is important to look for new sources of advantage that enable a logical development of underlying firm capabilities. Development of the firm's product strategy towards services and solutions has been suggested as one feasible alternative.

7.2 Managerial implications

As discussed throughout this study, understanding of the sources of competitive advantage and the shifting basis for them has become of foremost importance in the context of an increasingly global competitive environment. Thus, one can say that the importance of understanding and reacting to changes occurring in the external environment has become a prime managerial priority. Among the case firms studied here, the ones that operate in more traditional industries, such as metal engineering, seem to have weathered globalization forces better than those in high-tech industries. This has much to do with the difference in the rate at which these industries are undergoing

change. In industries where external industry change is rapid, the importance of understanding and responding to changes in the external environment is of key importance, and lack of strategic foresight can turn very rapidly into crippling competitive disadvantage. This challenge is all the tougher in industries where the change is not only rapid, but also disruptive, thereby creating discontinuous development trajectories for the firm's sources of competitive advantage. How to address the issue of strategic change in such industries is a crucial problem, but one to which there are no easy answers. Given the path-dependent nature of capabilities, successful partnering may be the most realistic alternative through which to gain access to capabilities in cases where organic growth is deterred through time constraints.

In terms of developments in product strategy, this study finds support for the tendency of manufacturers to gradually move downstream in the form of services and solutions, as a way to maintain differentiation advantage in highly competed and maturing industries. As detailed in essay 3, particularly in the industrial manufacturing sector, development of product-related services to the installed base of equipment has been extremely important as a means to boost profitability and growth, and to guard against industry cyclicality. At the same time, through transition into solutions business, these firms are choosing to gradually change the way in which value creation through products takes place. Thus, manufacturers are moving away from a focus on product features towards a greater orientation around customer processes in an effort to create value in ways that extend beyond pure technological innovation. As emphasized by the case firms, this is a slow and painful, but nevertheless necessary process to sustain competitiveness of their product-based businesses. Given the strong engineering basis of many Finland based MNEs, the change in mindset will be difficult to realize. Consequently, the change process should start while the firm's competitiveness is still strong enough to support a long-term strategic redirection. Thus, solution transformation works best when used proactively rather than reactively, and helps to complement excellence in products rather than compensating for relative weaknesses.

7.3 Limitations

Since empirical data utilized in this study mainly comes from four MNEs based in Finland, there is a high element of context specificity as well as possible concerns over sample size. However, context specificity is not necessarily a

weakness. As noted by Ramamurti and Singh (2009), context free generalizations are often too broad to guide managerial decision-making or government policy-making. Thus, and in line with Welch et al. (2011), we argue for more theory that incorporates contextual variables as contingencies. Furthermore, qualitative case studies utilizing small sample sizes can be powerful instruments when used to investigate complex real life phenomena whereby the understanding gained of a process in one setting can form the basis on which such processes are understood in other similar companies (Gummesson, 2000). Thus, the basis for generalization in this study rests on analytical rather than statistical generalization. Furthermore, even though we have adopted a dynamic orientation to the phenomenon at hand, the data collection effort has relied on a combination of real time and retrospective approaches. More specifically, the author has conducted interviews at the case firms in different stages between 2003-2010 with most of the interviews taking place between 2006-2009. While this has enabled some real time longitudinal research to take place, it has also been necessary to rely on retrospective approaches, particularly to understand the time period connected with building the case firm's international positions based on product excellence. Therefore, the study may suffer from retrospective bias. However, given the difficulty of doing real time longitudinal research, retrospective data collection has been utilized in combination with real time longitudinal research. Furthermore, when utilizing a retrospective approach, we have attempted, whenever possible, to interview individuals who witnessed particular developments first hand – even if this has involved interviewing individuals no longer employed by the case firms. We have also attempted to enhance our historical understanding of the case companies by drawing on supporting documentation such as media texts and previously written company histories or case studies.

7.4 Suggestions for further study

This study has investigated the development in the firm's product offering strategy as a way to progressively enhance the firm's differentiation degree and therefore to resist competition that is solely based on price considerations. We have described this transformation as the movement towards service and solution-based business. Based on the experiences of the case firms included in this study, such a transition has particular potential in the industrial

manufacturing sector. In this sector, transition to product-related services is natural since the products being sold are typically investment goods that require regular maintenance. This presents a natural business opportunity for the manufacturer who can incrementally build more advanced types of service business models such as maintenance contracts based on equipment availability or training services for customers. Furthermore, a transition to solution business is made easier by the fact that these firms typically have a limited pool of customers with whom the relationship is ongoing. Consequently, it is possible through a solution orientation to learn how to better link with customer processes in a way that enhances the value of the firm's offering.

How the service transition logic applies to other contexts is less clear. For instance, if the business lacks an installed base of equipment that requires regular maintenance, the firm will need to find other avenues for transition into a service business. Furthermore, for a manufacturer trying to transition to a solution business in mass consumer markets, lack of direct interactions with end customers is likely to pose a major challenge. It is therefore likely that service and solution transformation in different business contexts require different types of transition logics. Thus, a more detailed understanding of movements "downstream" in the form of services and solutions would benefit from in-depth case studies of firms in different industry contexts that have successfully transitioned beyond pure product-based business.

Moreover, this research has focused on MNEs from developed countries with MNEs originating from Finland as the empirical context. Therefore, research into competitive strategies of MNEs originating from the developing economies would be of interest. It would be particularly interesting to see how MNEs from the developing countries position their competitive strategies in light of those being adopted by developed country MNEs. For instance, to what extent they continue to rely on cost innovation strategies (Zeng and Williamson, 2007), and whether and with what success, they will emulate service and solution-based strategies in the future would be interesting avenues to explore.

Finally, in this study we have utilized the globalization phenomenon as a representative of the changes that are occurring in the firm's competitive environment, so as to study the effects of these changes on firm level strategic behavior. In future studies, it would be useful to attempt to further distill the nature of these external changes. More specifically, while globalization can be understood as a general phenomenon that increases the pace of change in the external competitive environment, it is also possible to attempt to pinpoint

certain aspects of the competitive environment, such as increased pace of technological or institutional change. A more targeted definition of changes in the external competitive environment would likely result in a more fine grained explanation of firm level responses.

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Appendix 1: List of interviews

Stage 1: Wärtsilä's Solution Strategy 2003-2004		
Company	*Position of informant*	*Duration (min)*
Wärtsilä	Vice President, Finance, Ship Power	120
Wärtsilä	Director, Sales Support and Concept Design, Solutions, Ship Power	60; 210
Wärtsilä	General Manager, Business Intelligence, Ship Power	
Wärtsilä	Sales Director, Solutions, Ship Power	80
Wärtsilä	General Manager, Product and Application Development, Ship Power	120
Wärtsilä	Project Manager, Solutions, Ship Power	80
Wärtsilä	Director, Quality Development, Ship Power	30
Wärtsilä	Regional Sales Director, Service	30
Elomatic (collaboration partner)	Manager, Marketing and Sales	60
IHI Marine United (customer)	Manager, Machinery System Engineering	30
Kvaerner Masa-Yards (customer)	Vice Manager, Machinery/HVAC Design	60
Kvaerner Masa-Yards (customer)	Senior Vice President, Strategic Sourcing	45
Aker Finnyards (customer)	Senior Vice President, Design	80
Aker Finnyards (customer)	Project Coordinator, Machinery Design	80
Stage 2: RESPONSE Project 2006-2009		
Phase 1: Contextual understanding		
Company	*Position of informant*	*Duration (min)*
Wärtsilä	Group Vice President, Ship Power	158
Wärtsilä	Sales Director, 4-stroke Business, Ship Power	101
Wärtsilä	Vice President, Solutions Business, Ship Power	105
Wärtsilä	Vice President, Finance and Control, Ship Power	91
Wärtsilä	General Manager, Supply Management, Ship Power	86
Wärtsilä	Vice President, Propulsion Business, Ship Power	91
Kone	Vice President, Design	109
Kone	Vice President, Sales and Product Marketing, New Elevators and Escalators	91
Kone	Managing Director, R&D	107
Kone	Vice President, Global Customer Management	38
Kone	Executive Vice President, New Elevators & Escalator Business and Technology	131
Kone	Senior Vice President, Technology and R&D	155
Kone	Senior Vice President, Marketing & Quality	42
Kone	Assistant Vice President, Portfolio Management & Business Analysis, New Elevators and Escalators	30
Nokia	Director, Strategy	83
Nokia	Director, Corporate Strategy	109
Nokia	Head of Insight & Innovation, Nokia Design	112
Nokia	Director, Corporate Strategy	80
Nokia	Head of Industry Intelligence	69
Perlos	Director, Global Sourcing & Logistics	85
Perlos	Senior Vice President, Nokia Account	87
Perlos	Senior Vice President, Global Sales and Marketing	158
Perlos	Chief Development Officer	114; 122
Perlos	Chief Operating Officer	82

Phase 2: Development of firm capabilities		
Company	*Position of informant*	*Duration (min)*
Wärtsilä focus group		80; 92
	General Director, Business Intelligence, Ship Power	
	Vice President, Finance and Control, Ship Power	
	Director, Operational Development, Ship Power	
	Director, Business Development, Ship Power	
	Director, Cruise Business, Ship Power	
	HR Director, Ship Power	
Kone focus group		124
	Vice President, Design	
	Senior Vice President, Marketing and Quality	
	Assistant Vice President, New Elevators and Escalators	
	Sales and Product Marketing Manager, New Elevators and Escalators	
	Vice President, Sales and Product Marketing	
	Vice President, Global Customer Management	
Nokia focus group		116
	Manager, Strategic Planning	
	Manager, Strategy Planning and Development, Services	
	Director, Strategic Planning, Corporate Strategy	
	Manager, Strategy Planning, Devices	
Perlos focus group		106
	Senior Vice President, HR and Communications	
	CFO	
	Senior Vice President, Global Sales and Marketing	
Individual interviews with "China & India experts"		
Wärtsilä	Sales Director, Ship Power	38
Kone	Assistant Vice President, Market Strategy and Development	90
Perlos	Senior Vice President, Global Sales and Marketing	50
Interviews in China: role and importance of operations in China		
Wärtsilä	Vice President, General Manager, Ship Power	113
Wärtsilä	Senior Technical Manager, Ship Power	96
Wärtsilä	Sales Manager, Southern China, Ship Power	86
Kone	Director, Research and Development Center, China & Asia	105
Kone	Managing Director, Kone, China	51
Kone	Vice President	49
Nokia	Director, Technology Officer, China	71
Perlos	General Manager (Guangzhou)	119
Perlos	General Manager (Beijing)	151

Phase 3: Independent research streams		
Company	*Position of informant*	*Duration (min)*
Elcoteq	Chief Financial Officer	52
Nokia	Senior Vice President, Sourcing and Procurement	46
Perlos (ex)	Chief Development Officer	60
Nokia (ex)	Senior Vice President, Sourcing and Procurement	25
Nokia (ex)	CIO, Senior Vice President, Business Infrastructure	62
Perlos	Chairman of the Board	52
Aspocomp	Senior Vice President, Operations	38
Perlos	Senior Vice President, Global Sales and Marketing	36
Kone	Assistant Vice President, New Elevators and Escalators	52; 52
Nokia	Sourcing, Director	38
Sitra	Executive Vice President	48
Kone	Senior Vice President, Marketing & Quality	32
Kone	Executive Vice President, Major Projects	21
Wärtsilä	Vice President, Offshore	61
Wärtsilä	Business Development Manager, Services	60

PART II: Original research papers

Paper 1

Salonen, Anna (2011). Shifting Strategies and Patterned Capabilities - Exploring the Dynamics of Strategic Fit. A paper presented at the *11th Vaasa Conference on International Business*, August 24-26, University of Vaasa.

Shifting Strategies and Patterned Capabilities - Exploring the Dynamics of Strategic Fit

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Abstract

This study explores the concept of strategic fit in the context of firm internationalization processes in order to develop a more dynamic and integrated perspective to strategy formulation in global markets. Through in-depth case studies of three Finland based multinationals, we explore how firm competitive strategy shifts over time as a response to changes in the firm's internal and external contingencies. Based on the experiences of these case firms, we find competitive advantage to be contingent on careful management of the fit between strategy, firm capabilities, and changes in the competitive environment. More specifically, while strategy must stay responsive to changes in the competitive environment in different stages of the firm's internationalization process, these shifts are guided by clearly identified patterns of capability development.

Introduction

Much of existing strategy research deals with the fundamental question of what accounts for sustained competitive advantage and thus performance differences between firms. Environmental models such as Porter's (1980) five forces framework and the related generic strategy concept emphasize the importance of external industry forces as determinants of firm performance, while the resource-based view (e.g. Wernerfelt, 1984; Barney, 1991) has refocused the theoretical lens to firm level attributes. Given the lack of conclusive evidence supporting either internally or externally focused models of competitive advantage, some more recent studies have highlighted the importance of developing an integrated view that accounts for both environmental and resource-based explanations (Henderson and Mitchell, 1997; Cockburn, Henderson, and Stern, 2000; Spanos and Lioukas, 2001; Priem and Butler, 2001). More specifically, it has been suggested that reciprocal interactions between the market environment and firm capabilities shape strategy and performance (Henderson and Mitchell, 1997).

Such notions of competitive advantage not only call for more integrated, but also for more dynamic approaches to strategy formulation and research. Integrated approaches, as such, have long roots in strategy research through the idea of strategic fit. At the same time, recent research has devoted surprisingly little attention to such integrated perspectives (Fahy and Hooley, 2002; Zajac, Kraatz, and Bresser 2000) and the few studies that do, tend to adopt static orientations to a phenomenon that is inherently dynamic (Zajac *et al.*, 2000).

In order to contribute to this important line of research, the objective of this study is to investigate the development of competitive strategy and supporting capabilities in the context of firm internationalization processes. To do so, we conduct in-depth case studies of three Finland based multinationals. While the firms studied have adapted their competitive strategies and underlying capabilities at different paces due to differences in industry dynamism, they nevertheless depict strikingly similar patterns of strategy and capability development. Essentially, all three case firms have internationalized with a differentiation strategy based on product leadership. This strategy has later been complemented by an increased focus on cost efficiency of operations, and later, by efforts at finding new sources of differentiation through transitioning to services and customer focused solutions (see e.g. Wise and Baumgartner, 1999). We thus find competitive advantage to be contingent on careful

management of the fit between strategy, firm capabilities, and changes in the competitive environment. More specifically, while strategy must stay responsive to changes in the competitive environment, these shifts are guided by clearly identified patterns of capability development.

Theoretical background

The idea of strategic fit, or the fit between organizational and environmental contingencies, has deep roots in strategy research. For instance, the field of business policy, which served as the initial strategy paradigm (Schendel and Hofer, 1979), is based on the idea of matching organizational resources with environmental opportunities and threats. In fact, the early frameworks that emerged in the 1960s and 1970s typically gave equal weighting to firm resources and the environmental context in which it operated (Fahy and Hoolay, 2002). Since then, the idea of fit has been examined through distinct research streams that have examined different facets of the SWOT framework. For instance, externally based models grounded in the industrial organization paradigm (e.g. Porter, 1980; 1985) have mostly concentrated on the fit between strategy and external elements, while the resource-based view of the firm (e.g. Barney, 1991) has mostly concentrated on elements internal to the firm.

These distinct but complementary streams of research are discussed in more detail in the subsequent sections. More specifically, we first discuss Porter's (1985) concept of generic competitive strategy, which is seen as the most prominent perspective in externally focused models of competitive advantage (Fahy and Hoolay, 2001) and also as one of the most influential contributions in the field of strategic management (Campbell-Hunt, 2000). Thereafter, we discuss in more detail the resource-based view of the firm (Barney, 1991), as well as its extension, the dynamic capability view (Teece *et al*., 1997). To illustrate the reciprocal interactions between strategy, the market environment, and firm capabilities, we then discuss as an empirical context the firm's internationalization process as well as development of product strategy towards services and solutions.

The concept of generic competitive strategy

The concept of generic competitive strategy (Porter, 1985) is perhaps the best known example of strategy typologies (Thornhill and White, 2007). According to Porter (1980), the competitive advantage of a firm is a function of its ability

to find and maintain a superior industry position, which will then translate to superior profitability. This profitability is constrained by industry dynamics, described through the five forces model. Accordingly, overall attractiveness of an industry is shaped by five industry forces and their interaction: current rivals, new entrants, suppliers, customers, and substitutes. While some industries are inherently more attractive than others due to the structural determinants of the industry, the focal firm can, nevertheless, actively shape its performance through application of superior competitive strategies (Porter, 1985).

According to Porter (1985) there are two basic types of competitive advantage a firm can possess: cost leadership or differentiation. Cost leadership means becoming "the low cost producer in the industry" while maintaining "parity or proximity in the bases of differentiation" relative to competitors (pp. 12-13). A differentiator "seeks to be unique in its industry along some dimensions that are widely valued by buyers" while "[reducing] cost in activities that do not affect buyer value" (p. 14). The firm must make a decision between these two strategies or risk being "stuck in the middle" with negative performance implications. These basic generic types can also be extended to a cost focus and a differentiation focus. Competitive advantage is thus achieved through successfully pursuing cost or differentiation, in broadly or narrowly targeted industry segments.

Soon after its publication, Porter's theory was recognized as the dominant paradigm in the field of strategic management (Hill, 1988; Murray, 1988). According to White (1986, p.220), Porter's typology of generic strategies incorporates "a few critical dimensions, yet has strong theoretical underpinnings". At the same time, the paradigm's theoretical propositions have attracted intense debate. Critics of the "stuck-in-the-middle" hypothesis (Karnani, 1984; Murray, 1988; Hill, 1988) argue that conditions that might favor cost leadership are independent of conditions that might favor differentiation. Furthermore, as argued by Hill (1988), in many industries no unique low cost position exists, therefore necessitating the simultaneous pursuit of both low cost and differentiation strategies. In support of these observations, a wealth of empirical evidence has failed to provide unequivocal evidence for the validity of the "stuck in the middle" hypothesis (Thornhill and White, 2007; Campbell-Hunt, 2000).

Growing dissatisfaction with Porter's original formulation has led to the notion that successful strategy is not only about maintaining strategic purity, but also about choosing a strategy that fits the external contingencies faced by

the firm (Campbell-Hunt, 2000). Porter's original work (1980; 1985), while building on the idea that a firm's industry position can be manipulated through implementation of particular generic strategies, does not explicitly address the appropriateness of particular generic strategies to different environmental contingencies. However, as noted by Hambrick (1983), the characteristics of the environment place limits on feasible firm strategies, thereby favoring particular types of generic strategies over others. For instance, the idea of product lifecycle has been referred to as an important contingency variable that influences appropriate strategy (Hofer, 1975). Moreover, Porter's (1985) conceptualization of strategy does not incorporate changes in generic strategies through time, even though organizations have been found to shift strategies in non-random ways as a response to major environmental shifts (Zajac and Shortell, 1989).

The notion that strategy must stay responsive to changes in external contingencies is intuitively appealing given increased environmental dynamism. Some scholars even talk of temporary as opposed to sustainable competitive advantage as being more appropriate, whereby strategy is seen as dynamic maneuvering rather than static positioning (D'aveni, Dagnino, and Smith, 2010). At the same time, despite increased consensus towards more dynamic models of strategy and competitive advantage, it has also been noted that firms need to maintain some degree of consistency in order to survive (Miller and Friesen, 1984; Barnett and Hansen, 1996; Sheth and Sisodia, 2002; Lamberg *et al.,* 2009). More specifically, changes in strategy need to be consistent not only with changes in the environment, but also with the firm's own internal contingencies (Zajac *et al.,* 2000). These internal contingencies have been discussed, for instance, in terms of path-dependence (David, 1985), momentum (Miller and Friesen, 1982) and firm history (Nelson and Winter, 1982). The aforementioned internal contingencies can conceptually be linked to resource-based models of competitive advantage, which help to explicate the impact of idiosyncratic firm attributes required for implementation of particular strategies.

The resource-based view

The resource-based view of the firm stresses the importance of firm resources in determining the sources of competitive advantage (Wernerfelt, 1984; Barney, 1991). Resources, defined as "all assets, capabilities, organizational processes, firm attributes, information, knowledge etc. controlled by the firm that enable the firm to conceive of and implement strategies that improve its

efficiency and effectiveness" (Barney, 1991, p. 103), are viewed as being at the heart of firm competitiveness. Unlike external models of competitive advantage, this view assumes resources to be heterogeneously distributed among firms and to resist mobility. When these resources are valuable, imperfectly imitable, and cannot be substituted by alternative resources, they form a basis for sustainable competitive advantage (Barney, 1991).

In early work, resources and capabilities are often referred to interchangeably (Spanos and Lioukas, 2001). However, a distinction can be made in that resources are assets owned or controlled by a firm, while capabilities refer to the firm's ability to combine resources to accomplish particular organizational goals (e.g. Amit and Schoemaker, 1993). Furthermore, given increased dynamism in the external environment, so-called dynamic capabilities have attracted increased attention (e.g. Teece *et al.,* 1997; Eisenhardt and Martin, 2000; Winter, 2003). According to Teece *et al.*, (1997, p.516) dynamic capabilities consist of "the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments". Winter (2003) argues dynamic capabilities to be higher order capabilities that extend beyond the capabilities required for the firm to carry out its existing value-adding activities. Usually dynamic capabilities are conceptualized as routines that represent reliable patterns of problem solving and decision making (Winter, 2000; Helfat and Peteraf, 2003). They enable the firm to create new products or services, and to restructure activities for greater fit with the competitive environment. A slightly different perspective is provided by Hamel and Välikangas (2003) who highlight the importance of organizational innovation such as creation of new business models, rather than, for instance, product innovation, in efforts to take the company beyond existing business activities.

Despite growing consensus around the need for firms to embrace so-called dynamic capabilities in order to maintain fit with a changing external environment, it has been noted that organizational flexibility is, nevertheless, significantly deterred by path-dependence and structural inertia (Nelson and Winter, 1982; Hannan and Freeman, 1984). Consequently, firms need to follow a certain logical trajectory toward capability development through a time consuming process of capability building (Dierickx and Cool, 1989; Teece *et al.,* 1997). Furthermore, firms tend to have problems adapting to environmental changes that are inconsistent with their existing capabilities (Henderson and Clark, 1990). As argued by Schreyögg and Kliesch-Eberl (2007), such constraints on organizational flexibility constitute a serious theoretical

disparity in so far as capabilities can be truly conceptualized as dynamic. Therefore, approaches to capability development that stress gradual evolution, as opposed to revolution of capabilities, may prove more tenable.

A useful illustration of dynamic capabilities that conforms to the above mentioned constraints is provided by Helfat and Peteraf (2003) through the idea of capability lifecycles, whereby capability development proceeds along well-defined stages characterized by strongly path-dependent processes. The lifecycle of a new capability begins with the founding stage, proceeds with gradual building of the capability, and finally reaches the maturity stage. According to Helfat and Peteraf (2003), factors internal or external to the organization can have an impact strong enough to change the capability trajectory. In such a case, capability branching can occur into one of at least six additional stages: retirement, retrenchment, renewal, replication, redeployment, and recombination. For instance, as an alternative to capability retrenchment or retirement, a firm might attempt to improve or renew the capability in some way. It is also possible to transfer the capability to a new geographical market or to redeploy that capability to a different, but closely related product or service. The firm may also recombine an original capability with another (Helfat and Peteraf, 2003).

In the context of this study, we are particularly interested in the process of replicating initial capabilities in other markets through the process of firm internationalization, as well as the subsequent upgrading of these capabilities as demanded by changes in external contingencies.

The firm's internationalization process

The international business community has a long tradition with regard to studies that seek to explain the firm's internationalization process. For instance, the process school of internationalization, which draws on behavioral theory (Johanson and Vahlne, 1977), assumes the firm's internationalization process to be a linear, sequential process of increased learning and commitment about foreign markets (Mathews and Zander, 2007).

Researchers coming from the strategy perspective are less interested in process aspects as such. Instead, emphasis is placed on managing the firm's foreign operations. In this, two distinct approaches to international business operations are recognized – that of global configuration, and coordination of activities (Porter, 1986; Yip, 2003). Global configuration is concerned with the geographical spread of activities outside the home country, whereas global coordination is concerned with rationalization of activities across countries to

achieve greater cost efficiency of operations. While the strategy stream is not concerned with the firm's internationalization process per se, the sequence of internationalization is nevertheless assumed to first consist of global configuration of activities, and later, given that industry drivers accommodate such development, greater attention is given to increasing efficiency (see e.g. Yip, 2003). To account for these distinct stages, Tallman and Fladmoe-Lindquist (2002, p. 123) define firm internationalization as a "strategy of greater presence in international locations" and firm globalization as a "strategy of consolidating international markets and operations into a single worldwide entity".

This nonlinearity in the firm's internationalization process provides for an interesting background against which to study the interaction between firm strategy, environmental change, and development of capabilities. More specifically, the changing nature of factors internal and external to the firm that drive development of firm capabilities (Kilpinen *et al.,* 2009) and strategy (Salonen *et al.,* 2007) at different stages of the firm's internationalization process provide for an interesting context to explore the concept of strategic fit. We briefly discuss these logics in more detail.

The firm's initial internationalization process, or global configuration of activities, is primarily driven by factors internal to the firm – more specifically, the capabilities it has developed in the home country (Dunning, 1988). This is consistent with the resource-based view, whereby, for instance, Collis (1991) finds that firms primarily acquire their resources from domestic factor markets, which form the basis of strategy in international markets. These domestically grown resources/capabilities allow the firm to commence the process of global configuration. Through the process of global configuration, the firm seeks out those foreign locations that best enable exploitation of its firm-specific advantages (Dunning, 1988).

At the same time, as noted by Luo (2000), the initial advantages possessed by a multinational enterprise are not necessarily sufficient to provide a sustainable competitive position and long-term profitability. Thus, the firm needs to be committed to building new capabilities. While the capabilities developed vary by firm, Collis (1991), for instance, notes that international configuration offers learning opportunities through exposure to new markets and competitors. Therefore, it can be assumed that in later stages of the internationalization process, strategies and supporting capabilities are further shaped by exposure to different environmental contingencies. This enables the firm to integrate internal resources and external learning, so as to better

respond to the competitive environment it faces (Kogut and Zander, 1992). The growing importance of the external environment is also evident in the idea that global configuration is followed by coordination – a process that is driven by so-called industry globalization drivers (Yip, 2003). Similarly, the firm's competitive strategy is likely to change in different stages of its internationalization process to reflect changes in the external competitive environment. For instance, a growing competitive intensity is likely to demand more emphasis on cost efficiency of operations through global integration in the later stages of the internationalization process.

In summary, we can say that firm competitive strategy is best understood as a dynamic process whereby the strategy being implemented must stay attuned both to the firm's internal base of resources and capabilities as well as the changing external competitive environment. When investigated in the context of the firm's internationalization processes, we would expect firms to first internationalize based on a competitive strategy that is consistent with the resources and capabilities built in the home country (Dunning, 1988; Collis, 1991). The firm will then shift its strategy and develop new capabilities in later stages of internationalization as the external competitive environment evolves. While high velocity markets may demand high strategic responsiveness (Eisenhardt and Martin, 2000), the extent that firms can rapidly change strategies in ways that represent a discontinuous evolution of firm capabilities (Helfat and Peteraf, 2003; Schreyögg and Kliesch-Eberl, 2007) is questionable.

In terms of the types of changes associated with strategies and supporting capabilities, the product-based perspective has often been adopted in previous research. For instance, Romanelli and Tushman (1994) measure strategy change through introductions of new product lines. In terms of the resource-based view, Wernerfelt (1984) observes products and resources to be two sides of the same coin. Similarly, Shamsie, Martin, and Miller (2009) stress that decisions concerning product strategies must build incrementally on a specific set of capabilities, while Helfat and Raubitschek (2000), through the idea of product sequencing, argue that products co-evolve with firm knowledge and capabilities over time.

In the context of this study, we integrate the product-based perspective by investigating the increased propensity of firms to "move downstream" (Wise and Baumgartner, 1999). Accordingly, manufacturers have been found to increasingly transition to services (see e.g. Fang, Palmatier, and Steenkamp, 2008) and customer-specific solutions (see e.g. Davies, Brady, and Hobday, 2006) while building on their core manufacturing capabilities. Such a shift

represents an organizational innovation with potential to add to firm competitiveness in highly competed and increasingly mature markets where pure product-based innovation is insufficient.

As will be demonstrated through the case studies, firms in our sample have based their initial internationalization process on a differentiation based strategy of product leadership. This has been subsequently complemented by efforts to improve cost efficiency of operations, and in later stages, services and customer-specific solutions have been added to enhance differentiation in ways that extend beyond basic products. In principle, such a development path enables firms to shift strategies in ways that correspond to developments in the external competitive environment, while building on a logical evolution of underlying firm capabilities.

Methodology

Research design

This research adopts an abductive approach, whereby forming an understanding of a phenomenon is an iterative process that occurs in the recursive interplay between deduction and induction in order to form theoretical insights (Locke, 2010). During this process, the research issues and the analytical framework are reoriented against evolving findings from the empirical world (Dubois and Gadde, 2002). We utilize the case study methodology, which is consistent with the abductive approach (Dubois and Gadde, 2002) and has been highlighted as a particularly suitable method for conducting managerially relevant research (Amabile *et al.,* 2001). To enable replication logic, we rely on multiple cases (Yin, 2003).

Sample selection

Access to the firms included in this study was gained through a government agency sponsored project designed to study the effects of the globalization phenomenon on firm level strategies and competitiveness with a focus on leading multinational companies in Finland. Cooperation through this project enabled unique access to the participating firms (Gummesson, 2000; Yin, 2003). The findings reported concern three Finland based multinationals: Wärtsilä, Kone, and Nokia. Wärtsilä is a global provider of power solutions to the marine and energy markets with net sales of approximately 4.2 billion Euros in 2011. The firm is the global market leader in medium speed diesel

engines. Kone is a global provider of elevators, escalators, automatic doors and related services. In 2011 the company had annual net sales of 5.2 billion Euros. Kone is among the four largest companies in its industry. Nokia is a global mobile handset manufacturer headquartered in Finland with approximately 38.7 billion in net sales in 2011.

While the companies chosen for this study operate in different industries characterized by different industry dynamics, they nevertheless share many important similarities. Namely, the firms all originate from the same domestic environment, have internationalized with a differentiation strategy based on product/technological leadership, and are currently operating in highly global industries. These common characteristics enable us to study the processes of strategy development that are largely affected by similar initial conditions and to then see whether and how changes in the external environment prompt similar patterns of subsequent strategy and capability development.

Data collection

As emphasized by D'aveni *et al.,* (2010), studies that rely on dynamic theories should utilize data that reflects this orientation. Most studies related to the concept of strategic fit have tended to adopt static, cross-sectional approaches thus leading to calls for more research to examine fit within a longitudinal perspective (Venkatraman, 1989; Zajac *et al*., 2000). We have attempted to resolve the practical challenges connected with longitudinal research through a data collection approach that combines real-time longitudinal research with retrospective data collection.

Research collaboration with the case firms mainly took place over a period of close to three years, between 2006 and 2009, during which data was collected in multiple stages. To gain an overall understanding of the current situation faced by the firms, the researchers first conducted a standardized round of interviews that addressed industry globalization drivers (Yip, 2003), industry structure and value chain analysis, as well as firm competitive strategy (Porter, 1980, 1985). This stage was deemed to be important in gaining understanding of the conditions in each specific company, market, and industry that influence the phenomenon being studied. This stage involved interviews with 19 company executives, the positions of informants ranging from division head to manager. Each interview lasted between one hour and two and a half hours, and was tape recorded.

One of the themes that emerged from these first round interviews was the need for development of new types of capabilities to support firm

competitiveness in an environment characterized by shifting industry drivers and structures. The researchers decided to approach this issue from the perspective of firm internationalization processes. Of particular importance was to determine which resources and capabilities formed the basis for the initial competitiveness of the firms as they built their international presence, and how these resources and capabilities have had to be updated in later stages. The researchers also addressed the importance of the firms' current operations in large emerging countries such as China and India as these markets were identified in the first stage interviews as important for the firms' overall strategy and competitiveness.

This second research stage was conducted using the focus group interview method in which a researcher, relying on a discussion guide, acted as the facilitator. This research method was seen as an appropriate one to limit interviewer bias and to enable focus group participants to converse freely around structured topic areas. The focus groups were conducted at each firm, and took between two and three hours each. Sixteen participants took part, including top management team members or senior managers. Two additional interviews were organized with knowledgeable individuals who could not join the focus groups or with whom a discussion was continued following the focus groups. Finally, the researchers interviewed persons at the Chinese subsidiaries of these firms to obtain more first-hand knowledge of this important market. Taken together, seven persons were interviewed in China, their positions ranging from country manager to director. Mostly, these interviews lasted between one hour and two hours. Finally, given that a common theme that emerged in all three firms in terms of strategy development was a transformation from a product seller to a service/solution provider, this transformation logic was studied in more detail through individual interviews at all three case firms. Altogether seventeen interviews were conducted with knowledgeable individuals to understand this transformation process in more detail.

Data analysis

Due to the abductive approach utilized in this study, data analysis occurred in several stages, and earlier findings directed subsequent data collection and analysis. Data were categorized and analyzed manually according to emergent themes (Yin, 2003). Of particular importance was to identify patterns and to trace processes (Denzin and Lincoln, 1994; Eisenhardt, 1989; Pettigrew, 1997). For instance, during the first stage of the research, it became clear that all the

three case firms had internationalized using a strategy of differentiation, whereas cost efficiency had become much more important in later stages. At the same time, the firms had attempted to find new ways to build a differentiation lead and this development had involved a transition from products to services and solutions. Subsequent research enabled a better exploration of the exact dynamics involved in these processes.

Empirical findings

This section provides an overview of the evolving strategies and supporting capabilities at Wärtsilä, Kone, and Nokia at different stages of their internationalization processes. While existing literature recognizes two distinct stages to the internationalization process – global configuration and global coordination – it became apparent through the interviews that an additional stage is needed to accurately describe changes in strategy and subsequent patterns of capability development. Thus, in addition to global configuration and coordination, we can discuss of global regeneration. More specifically, in conjunction with global configuration, we discuss the types of strategies and supporting capabilities that were utilized to successfully penetrate international markets. In the global coordination stage, we discuss ways in which the firms have evolved beyond global configuration to the coordination of activities. Finally, in the regeneration stage, we discuss the ways in which the companies have attempted to enhance their positions in global markets through finding new ways to enhance differentiation beyond competence in product technologies. Due to similarities between Wärtsilä and Kone, we discuss these firms jointly, and then compare their experiences with those of Nokia.

Stage of global configuration

Both Wärtsilä and Kone based their initial internationalization process on a differentiation led strategy of product/technological leadership. In terms of their internationalization, Wärtsilä has a somewhat shorter history than Kone. Beyond exports to the Soviet Union in the form of war reparations, a larger scale internationalization effort at Wärtsilä started only in the 1980s. The company has mainly internationalized through exports and acquisitions of foreign competitors. Wärtsilä's traditional core competences reside in R&D and this has enabled the company to consistently introduce innovations that provide superior functionality over existing products offered by the competition. For instance, Wärtsilä was the first to introduce engines that can

burn heavy fuel as well as engines based on dual fuel technology. Such innovations have been fundamental to achieving greater operating economy in ships. This technological edge has consistently enabled the firm to successfully penetrate international markets. As commented by Wärtsilä respondents:

> *Wärtsilä has, since the 60s and 70s, put a lot of effort into R&D and has been the frontrunner in the development of four stroke engines. (Sales Director, Wärtsilä)*

> *When we entered this market (China in the 90s) we had this saying that a Wärtsilä engine is like the Mercedes Benz. Still today, this is the case. (Senior Manager, Wärtsilä)*

The internationalization of Kone began much earlier than that of Wärtsilä and has been somewhat more aggressive. Already in the 1960s the company acquired a Swedish competitor with international operations that was bigger than Kone at the time. Since then the company has consistently grown through an acquisition based strategy. Similar to Wärtsilä, Kone has always placed great emphasis on product excellence and technological leadership. Kone considers itself to be one of the most innovative companies in its industry and has introduced a number of ground-breaking technological breakthroughs such as the machine-room-less elevator and elevator designs that eliminate the need for a counterweight. Such innovations save space and construction costs, and result in higher energy efficiency. As commented by a Kone respondent:

> *Kone is a typically good Finnish engineering driven firm…we are truly one of the most innovative companies in this business. (Senior Vice President A, Kone)*

A significant development for both firms in the past decade has been the growing importance of China. Both firms see success in China as critical for long term profitability and growth, as approximately one third of all new equipment sales take place in China. Consistent with their original strategy of technology based product leadership, both firms were able to build their presence in China in the 1990s by introducing industry leading products to that key market. In the case of Wärtsilä, it entered the market with heavy fuel burning engines, which the competitors could not offer at the time. Kone similarly entered the market with the machine-room-less elevator concept, which was proprietary to the firm.

The case of Nokia also follows a similar development path in the sense that it has based its internationalization on a differentiation led strategy of product

and technological leadership by being the industry pioneer in mobile handset technology. As commented by a Nokia respondent:

> *In the beginning it was a lot about R&D capabilities, who can actually build this…so having the core R&D was the key. (Director A, Nokia)*

> *Nokia was the true front-runner when it came to the device. (Director B, Nokia)*

By being the first to market with digitally based mobile handset technology, Nokia was able to internationalize extremely rapidly in the 1990s and to quickly establish itself as the global market leader.

Stage of global coordination

In this stage, all three firms have complemented their original advantages with more attention to cost efficiency. In all the cases, the so-called globalization phenomenon seems to have necessitated the building of greater cost-effectiveness, and the companies currently rate cost drivers in the industry to be very high and likely to intensify further. Cost drivers have particularly intensified since the turn of the millennium as all three industries have experienced a radical rise in the importance of the emerging economies, particularly of Asia, as a source of demand and supply.

In the case of Kone and Wärtsilä, greater cost efficiency has been achieved, for instance, by rationalizing production and relocating parts of it to lower cost locations such as China. In both firms, global sourcing efficiencies and product platforms are utilized as much as possible. The structure of production has changed so that external suppliers of components and modules perform a major role. The focal firms act mostly as assemblers while retaining internal control of certain key modules. This development has proceeded so far at Kone that its own factories for the most part no longer manufacture complete elevators. Instead, they produce some modules of the final elevator and these modules, together with parts and modules from external suppliers, are shipped directly to the construction site to be assembled. However, despite efforts to improve cost efficiencies, the competitive advantage of both firms continues to stem from a differentiation strategy.

In the case of Nokia, the company has had a fairly global approach from the beginning of its internationalization process due to the global nature of its product and the industry in which it operates, as well as its relatively late start in the internationalization process. Thus, it has not had as much need, for instance, to restructure its activities because production capacity had already at

a fairly early stage of internationalization been located in lower cost countries and the company has always pursued a high degree of global standardization in its products. However, the cost drivers in the industry have nevertheless significantly intensified since the early internationalization period in the 1990s due to intensified competition and product commoditization. Nokia, unlike Wärtsilä and Kone, has been able to meet these challenges by complementing its early differentiation strategy with a simultaneous strategy of cost leadership. The change in the firm's strategy occurred already in the mid-1990s, as commented by a Nokia representative:

> *At the beginning everything is based on innovation, technology, getting fast to the market. Whatever the cost, it doesn't matter, so companies are not very efficient. In the 1990s Nokia was not very efficient. Capability to execute, to operate. We almost collapsed in 1996.....Then we realized we need to strengthen this position. (Senior Vice President, Nokia)*

The company, thus, understood very early on in the internationalization process the importance of complementing its differentiation capabilities with cost efficiency. From the mid-1990s, it worked to develop superior logistics, and demand and supply network management – a capability the company even today considers as one of its core competences. Moreover, Nokia's significant lead in market share has been seen to confer some cost advantages in the form of scale economies. Due to its efforts to build a cost leadership strategy, Nokia is able to make money even with low cost phones sold in large volumes in the emerging markets.

Stage of global regeneration

All three case firms have been highly successful and are among the largest players in their respective industries. Nevertheless, each recognizes the importance of searching for new ways to complement traditional strengths. More specifically, it has become increasingly questionable as to what extent differentiation based on product and technological leadership in the absence of new business models remains a sufficient strategy for the future.

In the case of Kone and Wärtsilä, the firms view that their products are still differentiated compared to the competition, but it has become more difficult to sustain an innovation lead due to growing competition and more rapid diffusion of innovations, as commented by company representatives:

It (globalization) has shortened the cycle...from being a technology user to becoming a technology provider...[from] thirty years...to maybe even just ten years. (Vice President, Wärtsilä)

I think technologies are becoming more and more similar. So having these big differences or big leaps, it's difficult...there's easier access to information...seems like whenever you come up with something new it comes out by someone else pretty quickly. (Senior Vice President B, Kone)

As a result of diminishing technology gaps, Wärtsilä and Kone have placed growing emphasis on moving downstream in the form of after sales services and integrated customer solutions. After sales services currently drive the growth and profitability of both firms. Kone even considers its business to be service driven in the sense that product sales without possibilities to add lifecycle services are deemed unattractive. In addition, Wärtsilä and Kone have increasingly defined themselves as solution providers whereby the firms no longer merely sell products and product related services, but rather provide solutions that enhance the use of their products in customer processes. As commented by a Kone respondent, such a shift implies a cultural change away from product features and technologies to greater customer understanding and responsiveness:

Creating the competitiveness is now starting with the customer. It's a mindset. It's customer centric thinking. In the past it was that the operations were near the customer, but our operations were driven by the factories and technologies...It will take a painful change. (Executive Vice President, Kone)

More concretely, in the case of Wärtsilä, the company has gradually moved beyond its base in diesel engines to offer integrated ship power solutions that consist of the engine, propulsion equipment, and related control and automation systems. These solutions are optimized for greater fuel efficiency, environmental friendliness, and operational reliability, which are important performance criteria for the firm's end customer – the ship owner. Also, such integrated and pre-packaged solutions ease the ship's construction process, thus benefiting the direct customer – the shipyard. As noted by a Wärtsilä respondent, the movement towards solutions represents a natural continuation that enables the firm to better capitalize on its existing strengths:

We have through our entire existence had a dialogue with people who operate ships…Wärtsilä has a lot of products and a lot of know-how…our job is to maximize what we can do with this (Vice President, Wärtsilä).

Similarly, Kone has redefined itself as a provider of people flow and access solutions with the aim of developing offerings that enhance the ability of building users to move smoothly, safely, comfortably, and without delays. From its base in elevators, Kone has improved its ability to link with control and automation systems in buildings to deliver more complete user experiences. For instance, Kone has developed elevator concepts that enable users to enter the building and arrive at their home door without opening any doors or pressing any buttons. To appeal to the direct customer, who is often the building developer, Kone has developed elevator designs that are already available for use in the construction phase of the building, thus speeding up and simplifying the construction process. The solutions provided by both firms – Wärtsilä and Kone – can be serviced and supported globally through their lifecycle.

To support these strategic reorientations, both firms have had to build new capabilities. For instance, both have consistently grown their global service networks through organic growth and acquisitions, and have developed more advanced service capabilities such as advanced maintenance based on equipment availability. Similarly, specific capabilities have been developed to support the firms' solution orientation. Wärtsilä has, for example, acquired a major manufacturer of ship propulsion equipment as well as companies specialized in automation and ship design in order to improve its capabilities to deliver complete ship power solutions. Kone has not invested as aggressively in its solution strategy through acquisitions, but rather has utilized partners when needed to complement its internal capabilities. However, emphasis has been put to enhance the firm's ability to integrate with systems provided by external partners. Furthermore, the company has, for instance, developed capabilities in visual design, traffic planning, project planning, and specification analysis.

A solution orientation at Wärtsilä and Kone represents a way in which to derive more value from their traditional strengths in product technologies by recombining these with new capabilities. As stated by a Kone representative, this transition does not signal retrenchment of traditional core competences in engineering or R&D, but rather provides a way in which to better apply these competences:

Kone is still a very strongly technology driven company…we're trying to see what the customer needs really are….but then behind that you need to still have a strong technology and ultimately you need to have good engineering competencies and capabilities in place. (Senior Vice President B, Kone)

In Nokia's case, the trend towards providing services and solutions is also evident. The mobile handset has been heavily commoditized in recent years and as a response the industry players have promoted so-called digital convergence. Accordingly, in addition to traditional features such as voice and text message communication, mobile devices are increasingly being used to take and send pictures, listen to music, record video, surf the Internet, use e-mail, and engage in social media. While Nokia has placed a lot of emphasis on its service and solution orientation, the company has struggled somewhat with the approach. A solution orientation would entail sophisticated combinations of hardware, software, and content creation services to deliver complete end-user experiences. Competitors such as Google and Apple have much more experience in software and services, and physical handset manufacturing operations can be outsourced to OEMs. Thus, while transformation to becoming a service/solution provider is seen as a strategic necessity, the process is not easy to realize since the needed capabilities are so different from the firm's traditional capabilities; as commented by a Nokia representative:

It's not even about the device anymore, it's about the device experience…it's about how you do your services. (Director A, Nokia)

Traditionally we have been only in consumer electronics and now we are trying to jump also into this consumer [oriented] service business…there are different capabilities in those two industries. (Manager, Nokia).

While Kone and Wärtsilä have also, to a large extent, needed to develop new capabilities to transform into lifecycle service and solution providers, it seems that the transition has been made easier by the fact that the industries in which they operate are characterized by greater stability.

This is an industry in which you need a lot of support…a lot of overlapping industries…you need a lot of history. (Senior Manager, Wärtsilä)

There has been, is a certain threshold for others…to enter to this business on a global scale…it's been kind of a protected business….so therefore we have not been

encountering these change needs as strongly as some others. (Vice President, Kone)

Given the slower pace of change in these industries, as well as less dramatic commoditization of underlying competencies tied to the physical product, Wärtsilä and Kone have had more time to build the new capabilities that are needed for continued success in their respective industries.

Discussion

Based on in-depth case studies of three Finland based multinationals reported in this study, it becomes clear that explanations of competitive advantage benefit strongly from an integration of both internally and externally focused perspectives, and of a finer grained understanding of the dynamics involved in interactions between strategy, capabilities, and the environment. We have primarily approached the issue through the lens of competitive strategy, thus seeking to explore how firms shift strategies in response to environmental change. At the same time, explicit attention has been placed on explicating the capability based logic that has driven initial adoption and later changes in strategy.

The firms reported in this study have built their international positions through a differentiation driven strategy that has been based on product excellence as well as the underlying capabilities in R&D and technology development. As noted by a Kone respondent, this is a typical core competence of Finnish firms that enables them to be competitive in international markets. In later stages, all have placed more emphasis on cost efficiency as the external industry conditions have evolved in a direction that has both enabled and forced greater cost efficiency of operations. Mainly, the phenomenon of globalization has forced the firms to improve cost efficiency, for instance by rationalizing and relocating production, and by increasing externalization. Nokia, due to its extensive scale economies as well as industry leading practices in logistics and demand and supply network management, was for some time able to enjoy a hybrid position of simultaneous cost leadership and differentiation.

At the same time, the firms have not been content with simply trying to become more efficient at what they are already good at. Thus, efforts to increase cost efficiency have been coupled with new business models aimed at

adding value beyond products, in the form of services and solutions. While such an approach is challenging due to the need to build new capabilities, for Wärtsilä and Kone, the development path has been a logically continuous one. For example, at Wärtsilä and Kone, the product has an extended lifecycle that requires service operations thereby making an expansion to service based business a natural evolution. Similarly, in terms of customer-specific solutions, Kone and Wärtsilä operate in business-to-business fields that are characterized by a limited pool of customers with whom collaboration takes place on a long-term basis, or at least in the context of an extended sales cycle. Thus, the firms have throughout their operating histories accumulated significant stocks of know-how related to customer operations and business priorities, whereby a solutions orientation represents a way of more systematically utilizing and further developing many of the capabilities that already exist in these organizations.

In the case of Nokia, the company has similarly attempted a transition towards services and solutions. However, this transition has been somewhat difficult. For one, the link between the firm's core product capabilities and those needed to provide services and solutions is less clear than in the cases of Wärtsilä and Kone. More specifically, the capabilities needed to develop and manufacture physical handsets differ quite drastically from those needed to develop content creation services or to develop software capable of supporting a unique customer experience in a converged device. Furthermore, the evolution in required capabilities needs to be realized in an extremely short time-frame in an environment where the firm is being challenged by the entry of new players with an established base in capabilities that have become critical for continued success in the industry. At the same time, its traditional core capabilities in handset manufacturing operations have commoditized extremely rapidly.

All in all, it can be said that the strategies that firms implement do depict high responsiveness to changes in the external environment. The speed at which this occurs depends on industry dynamics, with more traditional industries undergoing slower change. At the same time, competitive strategies utilized by the firms display great resilience. All of the case firms initially based their internationalization on a strategy of differentiation, and continue to strive for such a position by transitioning into services and solutions. The new capabilities needed to function as service/solution providers have been built alongside traditional capabilities in product technologies and manufacturing operations. In cases where these original core competences continue to provide

a significant competitive edge and where the industry dynamics change more slowly, as in the case of Wärtsilä and Kone, the transition is easier to realize.

Conclusions

As stated in the introduction, the question of what explains competitive advantage and sustained performance differences between firms has been at the center of existing research in the strategy field. Initial strategy paradigms, grounded in the idea of strategic fit, adopted an integrated perspective on the matter through models that gave equal weighting to firm capabilities and external contingencies (Fahy and Hoolay, 2002). Since then, the pendulum has swung first towards externally and later to internally focused models of competitive advantage. Lack of conclusive evidence in support of either orientation has led to calls for more integrative approaches that account for both environmental and resources based explanations of competitive advantage (Henderson and Mitchell, 1997; Cockburn, Henderson, and Stern, 2000; Priem and Butler, 2001; Spanos and Lioukas, 2001). Furthermore, given increased environmental dynamism, researchers have called for approaches that depict strategy as dynamic maneuvering rather than static positioning (D'aveni, Dagnino, and Smith, 2010). To address the gap in existing research, this study has investigated the development of competitive strategy in the context of firm internationalization processes. The aim has been to explore how firms shift strategies over time and in ways that maintain fit with internal and external contingencies.

In support of previous research, we find firm competitive strategy to be more about aligning strategy with external contingencies rather than about maintaining strategic purity (Campbell-Hunt, 2000), which causes firms to shift strategies over time (Zajac and Shortell, 1989). At the same time, firms do face considerable constraints on organizational flexibility in terms of the degree to which capabilities needed to support shifting strategies can be successfully upgraded (Schreyögg and Kliesch-Eberl 2007). In fact, successful strategic redirection is not easy and certainly not rapid if it requires a discontinuous evolution of underlying capabilities. Put in the context of capability lifecycles (Helfat and Peteraf, 2003), one could say that successful strategy is based on well managed capability branching. In the cases reported in this study, the firms have first replicated the capabilities built in the home environment in international markets and then, as changes in the external

environment have prompted strategic renewal, have proceeded in capability recombination whereby original capabilities have been combined with new complementary ones. For the case firms studied here, this has entailed a gradual process of evolving from a focus on product/technological excellence to building greater emphasis on services and solutions (Wise and Baumgartner, 1999). In this process, original core capabilities have not been abandoned in the form of retirement or retrenchment. In cases where these original core capabilities have been threatened by obsolescence due to extremely rapid change in the external competitive environment, the focal firm has faced significant barriers to successful strategic change.

Therefore, it seems that while strategic change has become necessary for continued success (Wiggins and Ruefli, 2005), strategic flexibility is nevertheless constrained by the path-dependent nature of the firm's resources and capabilities, thus highlighting the need for strategic consistency (Miller and Friesen, 1984; Barnett and Hansen, 1996; Sheth and Sisodia, 2002; Lamberg *et al.,* 2009). If the nature of the industry changes so fundamentally as to obliterate the value of existing resources, and if this change happens rapidly, the firm's ability to adapt itself is greatly constrained. For instance, Nokia which has in the past demonstrated great "strategic agility" (Doz and Kosonen, 2008), is currently experiencing severe challenges in terms of the ability to renew itself, which seems to be a result of inconsistency in terms of the evolution of underlying firm capabilities needed to adapt to changed industry requirements.

In terms of firm internationalization processes, this study suggests that a further dimension is needed that takes into account the need for strategic renewal. Currently, the literature suggests (e.g. Tallman and Fladmoe-Lindquist, 2002) that the process consists of two distinct stages – firm internationalization and firm globalization – whereby the firm first configures its activities in international locations, and then, in the second stage, consolidates them. Such an approach fails to sufficiently appreciate that firms do not merely internationalize with a particular competence and then increase efficiency through coordination. Instead, efforts at strategic renewal are also important to maintain competitiveness in a changing environment. We have termed this stage global regeneration.

Finally, in terms of limitations, this study is based on case studies of three firms. While inclusion of a limited number of cases has enabled greater in-depth exploration of each case, replication across more cases would enhance generalizability. Furthermore, although the phenomenon under investigation

requires a longitudinal approach, a significant portion of the data collection effort has relied on a retrospective approach. However, given the practical problems associated with real-time longitudinal research that spans over several decades, the approach utilized in this study was seen as a reasonable compromise.

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Paper 2

Salonen, Anna and Gabrielsson, Mika (2012). The Challenge of MNC-Led Growth and Internationalization – the Case of Nokia Dependent Suppliers. *Journal of Business-to-Business Marketing*, 19(2): 147-173.

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The Challenge of Multinational Corporation (MNC)-Led Growth and Internationalization: The Case of Nokia-Dependent Suppliers

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Purpose: This research is aimed at gaining a better understanding of supplier–customer relationships in the context of asymmetrical dependence. Of particular interest is to develop an enhanced understanding of the conditions under which such relationships can be mutually beneficial despite the problems traditionally associated with relationship asymmetry.

Methodology: The empirical context is provided by a case study of Nokia and three of its Finland-based suppliers that have grown and internationalized in a customer-led manner. Following a review of the literature, we introduce a conceptual model and then test it against findings from the case study.

Findings: We find that relationships characterized by asymmetrical dependence can be mutually beneficial as long as the boundary conditions governing the relationship remain favorable. In particular, relational variables such as trust and commitment can balance an otherwise asymmetrical relationship. However, such relationships are vulnerable to changes in the external environment, which may expose the more dependent party to power influences. Thus high customer dependence is best viewed as a temporary condition and the supplier should actively seek for strategies to reduce dependence.

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Originality: Much of existing research on interorganizational relationships fails to provide an understanding of relationship development over time and, in particular, in relation to changing environmental conditions. This study provides such a perspective and does so in the context of a supplier–customer relationship characterized by asymmetrical dependence.

KEYWORDS internationalization, globalization, supplier–customer relationships, power, dependence

INTRODUCTION

As a response to growing competitive pressures, companies have increasingly begun to develop closer relationships with their suppliers (Sheth and Parvatiyar 2002; Ulaga and Eggert 2010). For instance, multinational corporations (MNCs) such as Nokia have adopted the practice of "end-to-end demand-supply nets" (Hoover et al. 2001; Möller and Svahn 2003) whereby strong "channel captains" or hub firms closely coordinate demand for the firm's products with its manufacturing activities. The increasing popularity of organization forms that stress closer cooperation between the MNC and its suppliers naturally raises the issue of relationship asymmetry and its consequences for the more dependent partner (Johnsen and Ford 2008). Of particular interest is to develop an enhanced understanding of the conditions under which such relationships can be mutually beneficial despite the problems traditionally associated with relationship asymmetry.

To shed light on this issue, we report a case study of Nokia and three of its first-tier suppliers. What makes the case of Nokia and its suppliers highly interesting is that it enables us to look at the evolution of a relationship characterized by asymmetrical dependence. The cooperation between Nokia and these suppliers dates back to the creation of the mobile communications industry in the early 1990s. Interestingly enough, although the suppliers' dependence on Nokia has remained fairly constant, the relative position of the suppliers has not. Nokia's performance has been solid, even exceptional, whereas the suppliers' fast growth and high profitability characterizing the 1990s has been replaced by modest to low growth and diminished performance since the turn of the millennium.

In light of our case, it seems that the consequences of an asymmetrical relationship are situation dependent. Therefore, recognizing the circumstances under which dependence is beneficial or detrimental becomes of utmost importance. To address this issue, we investigate the determinants of a functioning supplier–customer relationship, particularly the nature of power and dependence. As noted by Anderson and Narus (1990), power and dependence are among the most widely studied aspects of channel working partnerships and affect to a large extent the dynamics of the relationship.

We also investigate whether changes in the nature of power and dependence, and therefore the nature of the relationship, can be explained by changes in the external environment, depicted in this case as the evolution of the industry from a period of growth to maturity (Abernathy and Utterback 1978). Finally, we look at ways in which the suppliers, should they wish to do so, can attempt to build greater independence.

LITERATURE REVIEW

The literature review is structured into two parts. We first discuss factors encouraging greater supplier–MNC cooperation. As such cooperation leads into greater interfirm dependencies, we then take a closer look at the concepts of power and dependence.

Factors Encouraging Supplier–MNC Cooperation

As stated in the introduction, growing competitive pressures have led to development of closer interfirm relationships (Sheth and Parvatiyar 2002; Ulaga and Eggert 2010). Firms are thus more and more replacing arm's length transacting with co-operative arrangements that stress close cooperation between suppliers and customers. *Closeness* is defined as the "the extent of mutual understanding and predictability of behavior that exists between two parties" (Ford, McDowell, and Tomkins 1996: 161) and cooperation implies joint striving toward a common goal (Stern 1971). An illustration of such collaboration is the practice of supply chain coordination whereby "channel captains" or hub firms coordinate demand for the firm's products with its manufacturing activities.

Such instances of supply chain coordination that place emphasis on cooperation over arm's length transacting lead to a wealth of benefits for the channel members. Maloni and Benton (2000) summarize these as *reduced buyer uncertainty* (material costs, quality, timing and lead times), *reduced supplier uncertainty* (understanding of customer needs, product/material specifications), *reduced uncertainty for both* (convergent expectations and goals, reduced opportunism, increased communication, shared risk and reward), *cost savings* (economies of scale, decreased administration costs, integration of processes and technologies, improved asset utilization), and *enhanced responsiveness* (joint product and process development, faster time to market, improved cycle times).

The MNC is therefore motivated to build close and cooperative relationships with its suppliers to increase the efficiency and responsiveness of its value chain. On the other hand, cooperation with an MNC provides growth and learning opportunities for suppliers (Laanti, Gabrielsson, and Gabrielsson 2007). Particularly in fast growing, high technology sectors, competitive pace, and subsequent resource requirements can be

considerable encouraging suppliers to seek cooperation with resource-rich MNCs. In some cases, the MNC may also demand closer cooperation to preserve the supplier's position in the MNC's network (Hoover et al. 2001; Möller and Svahn 2003).

Thus, close cooperation between suppliers and customers is a well-documented phenomenon that seems to result in more efficient, flexible, and capable supply chain structures. However, as reflected by the case presented in this article, and also as reported in previous studies (see, e.g., Sambharya and Banerji 2006 for a study of performance of Keiretsu suppliers), what is less clear is how the benefits of such a relationship are divided between the actors. Close cooperation, especially in a situation where the supplier becomes tied to a single customer, easily results in a situation whereby the supplier becomes overly dependent on the MNC and exposes itself to power influences. To take a closer look at these issues, we explore in more detail the nature of power and dependence.

Power and Dependence

A formal definition of power states that when A is highly dependent on B, B is more powerful (Emerson 1962). Dependence in turn in a dyadic exchange relation Ax;By (where A and B are actors, and x and y are resources introduced in exchange) is a joint function (1) varying directly with the value of y to A, and (2) varying inversely with the availability of y to A from alternate sources (Cook et al. 1983).

Relationships in which one party is more dependent on the other are thought to be asymmetric (Kumar, Hiddard, and Stern 1994) and often involve coercive use of power, whereby the more powerful party uses its influence to obtain favorable outcomes at the expense of the more dependent partner (Cook et al. 1983; Frazier, Gill, and Kale 1989; Anderson and Weitz 1989; Geyskens et al. 1996). At the same time, several authors have noted the importance of relationship asymmetry in promoting channel cooperation (e.g., Scheer and Stern 1992; Provan and Gassenheimer 1994; Frazier and Antia 1995; Maloni and Benton 2000).

In short, studies that have explored the relationship between asymmetry and use of influence strategies have produced inconclusive results (Lai 2009). One explanation for this may stem from the imprecise nature of the concept of asymmetry. As noted by Johnsen and Ford (2008), asymmetry in relationships is multifaceted and has been measured in different ways. Asymmetry may result from difference in firm sizes between a supplier and customer, relative contribution to sales and profits, possession of rare or critical resources, or potential to contribute to advancement of strategic objectives (El-Ansary and Stern 1972; Johnsen and Ford 2008; Paulin and Ferguson 2010). Thus, as pointed out by Larson (1992), relationships that are asymmetric in an overall sense may nevertheless depict varying degrees of interdependence in specific areas of the relationship.

Several authors have also stressed the importance of relational variables that contribute to channel performance and moderate the use of influence strategies (Crosno and Dahlstrom 2008; Lai 2009). Particularly, trust and commitment have been recognized as the central building blocks in interorganizational relationships (Dwyer, Schurr, and Oh 1987; Morgan and Hunt 1994; De Ruyter, Moorman, and Lemmink 2001; Palmatier, Dant, and Grewal 2007). Trust has been conceptualized as the confidence that relationship partners have in the reliability and integrity of each other (Morgan and Hunt 1994; Anderson and Narus 1990). As noted by Ganesan (1994), with trust the focus is on future conditions rather than short-term inequities in the relationship. Trust thus serves to reduce any negative impact of relationship asymmetry and mitigates the hazards of opportunistic behavior in long-term relationships (Dwyer et al. 1987; Ganesan 1994). According to Anderson and Weitz (1989), trust is affected positively by factors such as support provided, cultural similarity, communications, and goal congruence.

Commitment refers to the motivation to maintain the relationship (Dwyer et al. 1987; Anderson and Weitz 1989) and a high level of trust is seen to contribute to greater levels of commitment (Anderson and Weitz 1989; Morgan and Hunt 1994; Geyskens et al. 1996). According to Anderson and Weitz (1992), a high level of commitment enhances cooperation between channel members and increases mutual profitability. It is furthermore possible to distinguish between two different types of commitment: affective and calculative commitment (Kumar et al. 1994). *Affective commitment* refers to the extent to which actors in a relationship would like to maintain a relationship due to a general positive feeling toward the partner. *Calculative commitment* presents commitment as a calculative act in which the costs and benefits of maintaining a relationship are assessed. Earlier studies have mostly considered the role of trust in leading to higher levels of affective commitment (Kumar et al. 1994; Geyskens et al. 1996). However, as mentioned by Ganesan (1994), credibility, or perceptions of the partner's competence and reliability, is a better predictor of long-term orientation than benevolence. The level of commitment is affected by comparison level of alternatives, defined as the quality of outcomes (economic, social, and technical) available from alternative exchange relationships (Anderson and Narus 1984). If there are only a few alternatives, or if the comparison level of alternatives is low, commitment to a relationship is higher (Hocutt 1998).

De Ruyter et al. (2001) furthermore argue that commitment and trust are affected by offer and market characteristics. The need for a relational orientation is particularly evident under conditions of high environmental volatility where technology is changing rapidly, the end markets are uncertain, and it is difficult to predict trends and future outcomes (Klein, Frazier, and Roth 1990). Under such conditions, it is difficult and costly to write contracts that cover all contingencies (Ganesan 1994). At the same

time, changes in the environment, for instance in the form of regulatory, economic, or competitive alterations, may produce changes in the channel partners' relational orientation through time whereby a relational orientation becomes increasingly unnecessary (Aijo 1996; Palmer 2002; Pillai and Sharma 2003).

Development of Conceptual Framework

In summary, it seems that the nature of a supplier–customer relationship depends upon a complex dynamic in which the sources and consequences of relationship symmetry are far from clear and can vary through time. However, based on a review of the existing literature in the field, we propose a conceptual framework as shown in Figure 1.

The starting point for the framework is the supplier's decision to engage in MNC-led growth and internationalization due to the MNC's control of critical resources such as potential for learning and/or market access. In some instances, cooperation with an MNC can in fact be the only viable alternative due to resource constraints and short windows of opportunity in high-growth industries, as have been widely documented for instance in the born global literature (see, e.g., Gabrielsson and Kirpalani 2004). Such collaboration will decrease relationship symmetry due to the supplier's dependence on the MNC. Although sources of asymmetry can vary, we take as a starting point the frequently used indicators of asymmetry such as the "sales and profit" approach (El-Ansary and Stern 1972) as well as relative differences in firm sizes (Johnsen and Ford 2008). The resultant relationship asymmetry creates potential for the MNC to use its position to obtain favorable outcomes

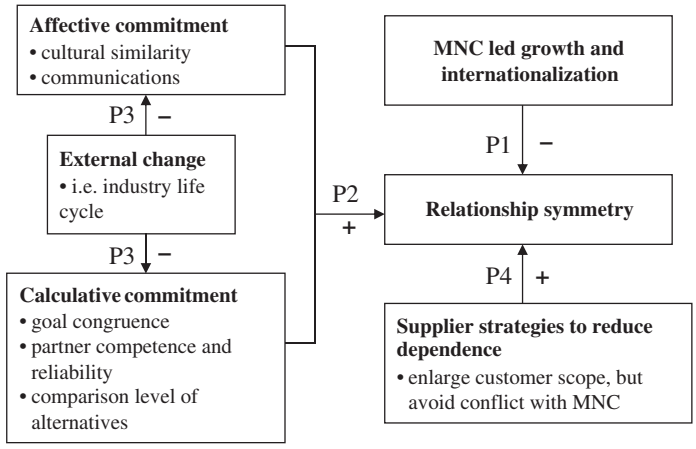

FIGURE 1 A process framework of supplier MNC relationship development in the context of MNC led growth and internationalization.

at the supplier's expense (Emerson 1962; Cook et al. 1983). Therefore, we formulate Proposition 1 as follows:

> P1: A strategy of MNC-led growth and internationalization decreases relationship symmetry due to the supplier's high dependence on the MNC.

At the same time, asymmetry in relationships is a multifaceted phenomenon and relationships that are asymmetric in an overall sense may nevertheless depict varying degrees of interdependence in specific areas of the relationship (Larson 1992; Johnsen and Ford 2008). Also, relational variables can impact the functioning of otherwise asymmetrical relationships (Crosno and Dahlstrom 2008; Lai 2009). Consistent with previous research, we treat commitment as a key relational variable that enhances cooperation and performance outcomes in a relationship (Anderson and Weitz 1992). Although trust is also important, we assume that trust in relationships is manifested through commitment (López Sánchez, Santos Vijande, and Trespalacios Gutiérrez 2010). In the framework, a distinction is made between affective and calculative commitment (Kumar et al. 1994). Therefore, we assume that previously identified components of trust contribute to affective and calculative commitment. More specifically, we assume that cultural similarity and high levels of communication lead to greater levels of affective commitment (Anderson and Weitz 1989). Goal congruence, the partner's perceived competence level and reliability, and comparison level of alternatives can in turn be expected to contribute toward calculative commitment (Anderson and Weitz 1989; Ganesan 1994).

Thus, the supplier's high dependence on the customer does not necessarily result in negative power influences due to the impact of relational variables. The previously identified dimensions of dependence such as possession of critical and rare resources or the partner's ability to facilitate advancement of strategic objectives can be incorporated under the variable of calculative commitment (Paulin and Ferguson 2010). Thus, even though a relatively small supplier may be dependent on the MNC for a significant portion of its sales and profits, the MNC may be dependent on the supplier through goal congruence; the supplier's perceived competence level and reliability; and low comparison level of alternatives. In light of the above discussion, we formulate Proposition 2 as follows:

> P2: The MNC's high levels of affective and calculative commitment toward the supplier increase relationship symmetry.

Therefore, in the presence of certain boundary conditions, identified here as high levels of affective and calculative commitment, the supplier can

take a calculated risk and engage in MNC-led growth and internationalization of its activities. However, the problem from the supplier's perspective is that the relationship does not exist in a vacuum. Instead, changes in the external environment can affect relationship asymmetry (Aijo 1996; Palmer 2002; Pillai and Sharma 2003). For instance, it was mentioned that commitment and trust are affected by offer and market characteristics (De Ruyter et al. 2001). Therefore, if the relationship was initially formed under certain market or offer characteristics, it is likely that significant changes in these characteristics will affect relationship symmetry. For instance, evolution in the industry life cycle can bring considerable changes to the conditions governing the relationship. When an industry evolves from growth to maturity, the buyer is likely to revise its priorities so that for instance cost competitiveness becomes more crucial. Moreover, factors such as cultural similarity, which may have mattered as the relationships were formed, are likely to matter less in a globalized environment. Therefore, we formulate Proposition 3 as follows:

> P3: Changes in the external environment, such as evolution in the industry life cycle, may have a negative effect on the MNC's levels of affective and calculative commitment towards the supplier, thus diminishing relationship symmetry.

Given that a relationship whereby the supplier is highly dependent on the MNC is vulnerable to changes in the external environment, it is imperative that the supplier begins to seek greater independence prior to deterioration of its position. As noted by Coviello and Munro (1997), it is typical of smaller firms seeking international market development and sales growth to seek initial relationships with a larger firm, which provides market knowledge and potential access/mode of entry to markets around the world. In time, the firm gains increased visibility and expertise that enables it to seek increased autonomy and control. At the same time, the supplier must be careful to avoid unnecessary conflict, so as to preserve the existing relationship upon which it continues to depend. Thus increased autonomy should be sought in ways that does not perpetuate incompatibilities in goals, aims, or values (Stern 1971). In light of these arguments, we formulate Proposition 4 as follows:

> P4: The supplier can increase relationship symmetry by enlarging its customer scope through ways that avoid channel conflict.

The framework developed above will be explored in the empirical section. Of particular interest is to see how the relationship symmetry between Nokia and its suppliers has evolved and therefore to gain more insight

into the management of supplier–customer relationships. More insight should also be developed about ways in which suppliers can build greater independence through ways that avoid unnecessary channel conflict.

METHODOLOGY

The topic of this article was born out of a concrete managerial problem. The authors have been involved in a multiyear project investigating the competitiveness of Finland-based firms. A phenomenon of interest within this project has been the internationalization of Nokia and its suppliers. As mentioned in the introduction, Nokia's mode of internationalization was to pull a number of Finnish suppliers in its footsteps. At first it seemed that such collaboration was highly beneficial for both Nokia and its suppliers. However, in recent years the performance and competitiveness of the Finland-based suppliers has severely diminished. The objective of the research was to explain this development.

To gain an in-depth understanding of this process, we conducted a case study of the supplier–customer relationships between Nokia and its three Finland-based suppliers: Perlos, Elcoteq, and Aspocomp. These suppliers have been part of Nokia's demand–supply net from the early 1990s and are regarded by Nokia as the most important Finland-based suppliers that have contributed to its internationalization efforts. The interviews were conducted in two phases. The objective of the first round was to gain a preliminary understanding of the phenomenon. In the second round, the interviewers asked more targeted questions based on the developed framework. Altogether, including the first-round interviews, thirteen senior managers were interviewed for 1 to 2 hours each. With the exception of a few background interviews, all the informants were at the position of senior vice president or higher and had a long experience of working in the industry. In the case of Nokia, some key individuals had already left the firm, so we also interviewed executives who are no longer employed by Nokia to gain historical perspective. Quotes by Nokia include comments made by both current and former Nokia employees. Supplier quotes are reported in an aggregate form to maintain confidentiality.

This study uses the case study methodology. As pointed out by Pettigrew (1997), the case study method is particularly suited to the study of complex phenomena in a real life context and allows for the tracking of dynamic processes. The mobile telecommunications industry serves as an explanatory case of the dynamics involved in close supplier–MNC cooperation, and one to which the researchers were able to have good access (Yin 2003; Gummesson 2000). The industry provides a suitable context to observe the dynamics of supplier–customer relationships since the relationship between Nokia and its suppliers has a relatively long history, and the

industry itself is highly dynamic, therefore allowing the researchers to study the impacts of external change on relationship development. Furthermore, the case of Foxconn, a Taiwanese-based supplier, emerged throughout the interviews to serve as an example of a firm that has entered the industry at a later stage and has adopted a very different operating model from those of the Finnish suppliers. It serves as an example of a model that seems better suited to current industry needs. Information related to Foxconn has been gained through interviews with the Finnish suppliers and Nokia, as well as an archival study of media publications.

Triangulation has been used to improve the validity of the research (Yin 2003). Of particular importance was triangulation between informants at the supplier firms and Nokia, so as to gain an accurate and balanced perspective of the phenomenon. The researchers also received some secondary material from the companies and conducted a comprehensive study of media coverage on the topic, both to increase background understanding as well as to triangulate the findings. Two researchers were present at all the interviews. All interviews were tape recorded, transcribed, and sent to the informants for verification. Interviews were stopped after it was felt that no significant new information was obtained from further interview rounds and there were no significant discrepancies between the accounts given by different informants.

In terms of data analysis, the interview transcripts and other supporting documents were first read through several times to gain an overall "feel" for the data. The interviewers then grouped the data under appropriate themes to reflect the constructs developed in the framework to ensure that the findings supported the framework. Empirical findings from the study were reviewed by both interviewers to confirm commonality of findings. Lastly, two key informants, one from Nokia and one from the supplier side reviewed the manuscript to ensure accuracy of findings.

EMPIRICAL FINDINGS

This section details how the relationship between Nokia and its Finland-based suppliers has evolved from the beginning of the relationship until recently. Special emphasis is given to exploring the dynamics of the relationship in terms of relationship symmetry.

Background on the Case Companies

Perlos, Elcoteq, and Aspocomp together with Nokia have been important participants in the Finnish mobile telecommunications cluster. Nokia as the flagship firm has led developments in the industry, and many of its suppliers have grown and internationalized in a customer-led manner as part of

its supply network. Each supplier has its own core competence area. Perlos specializes in mechanic parts and examples of its products include mobile phone covers and frame components, connectors, and antennas. Elcoteq provides electronics manufacturing services for mobile handset manufacturers. Aspocomp manufactures high-density interconnection printed circuit boards. For most of their history, these suppliers have had limited international presence, but all four embarked on a rapid internationalization program in the early 1990s. As can be seen in Table 1, by 2007 the suppliers had achieved a very high degree of internationalization, as measured by both sales and production figures.

There is a significant size asymmetry between Nokia and these suppliers. As measured by net sales, Nokia is thirteen times larger than Elcoteq, 112 times larger than Perlos, and 1,216 times larger than Aspocomp. In addition, all the suppliers have been highly dependent on Nokia. The firms do not provide exact figures and the percentages have varied, but estimates for Perlos have been as high as 70 percent of sales, whereas the lowest one has been for Aspocomp at around 30 percent of sales. Aspocomp's dependence has been significantly higher than 30 percent, but during the time the interviews were conducted, it had already lost quite a bit of business with Nokia because of its decreased competitiveness. All three suppliers confirmed in the interviews that they consider their dependence on Nokia to be too high, although the degree of this dependence has varied within and between firms.

MNC-Led Growth and Internationalization

The cooperation between Nokia and the suppliers began in the early 1990s. In 1992 Mr. Jorma Ollila became the CEO of Nokia, then an almost bankrupt conglomerate with diversified industrial operations. Mr. Ollila focused the company on telecommunications, and in 1992 Nokia launched its first GSM handset. Nokia was not the first company to develop the mobile handset technology, but it was the first one to understand its global consumer

TABLE 1 Background Information on the Case Firms

Case firm	Offering	Net sales 2007 EUR mil	% sales outside of Europe 2007	No. of countries with production 2007
Nokia	Mobile phones and network equipment	51,058	61	9
Elcoteq	EMS	4043	48	6
Perlos	Mechanic parts	454	64	8
Aspocomp	HDI PCBs	42*	40	3

*In 2007, Aspocomp sold its manufacturing units in China and India to pay off debts. Its net sales prior to that in 2006 were 149 EUR mil. EMC = electronics manufacturing services; HDI PCB = high-density interconnection printed circuit boards.

potential. To capture this growth potential, Nokia needed competent and reliable suppliers that were willing to work with Nokia globally.

> We had to constantly bring new technologies and products to production and at the same time double our capacity every year. We had no time to do anything except scale up the cooperation with our current partners with whom we were used to cooperating. (Nokia comment)

> The strong growth in mobile phones in the mid-'90s created a need for Nokia to rapidly build a reliable and well-functioning supplier network. (Supplier comment)

The suppliers understood from very early on the risks of relying heavily on one major customer, but the risk was deemed acceptable given the high-growth prospects and attractive profits afforded by this relationship. The cooperation between the suppliers and Nokia remained extremely tight throughout the 1990s. There existed a strong spirit of cooperation and mutual support. Even though Nokia did not make formal guarantees related to the level of orders or the time length of cooperation, the suppliers were ready to make customer specific investments and to rely heavily on the Nokia account.

Commitment Between the MNC and Suppliers

There seemed to be a high level of affective and calculative commitment between the suppliers and Nokia that balanced the relationship. In terms of calculative commitment, the relationship was characterized by high goal congruence, namely rapid growth and internationalization of activities to capture explosive demand for mobile handsets. In terms of supplier competence and reliability, the Finland-based suppliers had the needed technical capabilities and were able to scale up their operations and to deliver the required quantities with agreed upon delivery times. At the same time, compared to present day, the comparison level of alternatives was lower since there was less choice of capable suppliers that were available to meet demand that was growing exponentially. Furthermore, by cooperating with relatively small, customer-dependent suppliers, Nokia was able to ensure that the suppliers remained highly responsive to its needs enabling Nokia to create a supply chain that functioned as its extended enterprise. Also, it can be said that the levels of affective commitment were high whereby the relationship was characterized by a high degree of cultural similarity and intense communications. The high degree of cultural similarity led to a view whereby joint internationalization was partly seen as a national undertaking.

> I believe Nokia has been the tool of Finland to become what Finland is today . . . You see some entrepreneur around Finland, so you try to cooperate . . . Then you create a relationship which is very intense . . . Automatically a nationalistic sentiment develops. (Nokia comment)

Affective commitment was strengthened by intensive communication and information sharing:

> We had excellent and well working personal relations at different levels of the organization. This made it possible to meet with Nokia's top management . . . [and to get], you could say, fatherly guidance . . . but of course it was always clear for understandable reasons that overall performance is what counts. (Supplier comment)

The word *fatherly* used in the above supplier comment to describe Nokia's role is indicative of the views expressed during interviews both at Nokia and the supplier firms whereby the relationship was characterized as filial. Thus the relationship was one in which Nokia acted as the parent that guided its suppliers. These relationships were sustained through close personal relations and communications between key personnel at Nokia and the supplier firms, while at the same time close attention was paid to hard performance measures.

Impact of External Change on the Relationship

According to the informants, the change in the relationship between Nokia and its Finnish suppliers occurred around 2002–2003. Up until this point, one supplier representative said that Nokia had been a fairly "gentle" buyer.

The mobile communications industry had not grown in two years and it became clear that the industry had entered into a globally mature stage. This had a distinct impact on levels of affective and calculative commitment. In terms of calculative commitment, levels of goal congruence began to diminish. Namely, rapid growth and internationalization were no longer Nokia's top priorities. Instead, emphasis turned to squeezing costs in the value chain.

> In 2001, we noticed that the market is no longer growing. I was sitting on the board of Nokia at that time and it came as a complete surprise to us. Our reaction was to press the breaks and control costs. We passed the weakening profitability right up the value chain. A certain kind of selfishness steps in at that point. (Nokia comment)

> For the first time price really came into the picture. Before that we talked about quantities. (Supplier comment)

In this new environment the Finnish suppliers still had high differentiation driven competences and reliability. However, the new environment called for cost efficiency, which the Finnish suppliers lacked:

> When we were no longer in a period of super growth and the product started to commoditize . . . the problem with the Finnish suppliers was that their cost competitiveness was not good enough. (Nokia comment)

Although Nokia still portrayed a general positive feeling toward its Finnish suppliers, it began nevertheless to seek other partners due to changed external circumstances. This was made easier by two factors. First, the comparison level of alternatives was significantly higher than in the growth stage of the industry. Particularly, more cost-efficient competitors had emerged in East Asia. Second, Nokia had become a more global company both in terms of operations and personnel therefore lessening factors related to cultural similarity. The purchasing function for instance had hired non-Finnish managers from outside the firm. This was seen as having some degree of impact on the relationship:

> Surely to some extent this disruption has been caused by the fact that personnel at Nokia has changed . . . the team that built this up has left. (Nokia comment)

> Nokia has become more international in the sense that there aren't so many Finnish managers anymore . . . It might partly diminish this Finnish sense of fellowship. (Supplier comment)

Many of these newly recruited managers had experience from other consumer electronics industries already in more advanced stages of life cycle. Such international managers had the willingness and the ability to develop new operating models that fitted with the changed industry conditions and were less bound to personal and cultural ties developed in the earlier part of the company's operations. It was at this point that Foxconn, a Taiwanese-based contract manufacturer, for instance, was introduced as a supplier to Nokia.

Strategies to Reduce Dependence

All three suppliers stated that it was always understood that high dependence on Nokia was a two-edged sword. Although it enabled the suppliers to grow and internationalize at incredible speed, it also led to a situation whereby the suppliers had very little room for independent strategy development and exposed themselves to relationship asymmetry, particularly in later stages of the relationship.

All three suppliers have attempted to reduce dependence by acquiring new customers within the same industry, essentially Nokia's competitors, as well as by diversifying into other industries. A key consideration in this development has been avoidance of conflict.

According to Nokia, the company was somewhat wary of their suppliers pursuing other accounts in the early part of the relationship. At the same time, and particularly in later stages, Nokia also understood that its suppliers would need to diversify their relationships, so as to have sufficient scale economies and cost competitiveness. However, a key criterion was that these efforts should not compromise Nokia's position.

> Our conscious strategy was that our suppliers are not overly dependent on Nokia . . . [However], in case of capacity bottlenecks, we expected our suppliers to prioritize Nokia. (Nokia comment)

It seems that the suppliers did not have enough capacity during the 1990s to grow other accounts and to continue to provide the same level of service to Nokia. Thus, efforts to reduce dependence were for this reason not always welcomed by Nokia, and the suppliers did not press the issue due to fear of conflict.

> We didn't have enough capacity and we would have had to say no to Nokia. We were in a difficult situation. (Supplier comment)

> Nokia was particularly sensitive in this early phase to our discussions with other parties . . . the reaction was quite drastic when [Nokia's competitor] suddenly became a fairly important customer. (Supplier comment)

Compounding these difficulties was the fact that the Nokia account was highly profitable therefore lessening the motivation of the suppliers to seek other accounts at the expense of the Nokia account.

> Nokia's business was so good that probably all the other alternatives looked less profitable. (Nokia comment)

> The temptation was so big . . . you couldn't have gotten that kind of growth from elsewhere. (Supplier comment)

In light of this background, it was understandable that the suppliers did not manage to build greater independence from Nokia during the stage of international growth. However, in hindsight, this was a problematic choice and one that would greatly hinder their competitiveness in later stages. In fact,

it seems that although the suppliers understood the importance of reducing customer dependence, they somewhat underestimated the consequences of not doing so. In other words, they did not fully appreciate the magnitude of the changes that would take place as the industry evolved from a stage of international growth to global maturity.

> I think they had underestimated the competition and cost pressures that develop when the S curve flattens. (Nokia comment)

> Profitability has been good. Every year you get more and more profit, so there is no threat based reason to think proactively . . . We have been too short sighted and tried to just somehow manage this 50 percent growth every year. We haven't concentrated on the fact that this can't continue for many years. (Supplier comment)

All in all, it could be argued that high customer dependence played against the ability of the suppliers to recognize external change and its implications. For one thing, the cooperation in the 1990s was so deep and profitable that it was easy to get trapped in a false sense of security. The cooperation was also of the nature that the suppliers were not forced to develop strategic capabilities.

> There was no perceived need for long term strategic planning or a road map of future competences . . . our strategy was to follow Nokia . . . Nokia's requests, such as building of new plants, were directly implemented. (Supplier comment)

Therefore when the industry conditions began to press for change, the suppliers did not have the needed strategic skills to respond. The onslaught of new competitors with strong positions in the growing East Asian markets and viable operating models caught the Finland-based suppliers off guard and exposed their ill-preparedness for the new environment.

Following the maturation of the industry and the ensuing pressures to build greater cost efficiency in the industry value chain, the structure of the supply chain has shifted in favor of large scale ODMs (original design manufacturers) and system integrators. These ODMs and systems integrators are able to manufacture and integrate subassemblies or even complete mobile phones based on a model of vertical integration. Such suppliers can provide a short lead time for product delivery, a fast development cycle, and lowered total costs.

Suppliers in Asia, such as Taiwanese Foxconn, are extremely well adapted to the current operating logic of the industry. Foxconn, an affiliate of Hon Hai Precision Industries, is a Taiwanese based contract electronics manufacturer operating in the mobile handset business. However, the

Group is engaged in the manufacturing of a wide range of consumer electronics. Foxconn is highly integrated vertically and, according to one informant, has the capabilities to do in-house everything that Perlos, Elcoteq, and Aspocomp together can do, and even more, does this extremely cost-efficiently. According to Credit Swiss First Boston's (2005) investment analysis report, the Hon Hai Group is the world's lowest-cost downstream hardware system integrator. Its cost-efficiency is due to both vertical integration and scale economies afforded by horizontal diversification across industries. The fact that it is horizontally diversified also helps it to avoid customer dependence.

In addition to moving production to low-cost locations, the Finland-based suppliers have attempted to respond to this new competition and operating environment by, for instance, enlarging the scope of their offering and technological capabilities. However, this is difficult to do reactively once the firm's competitiveness has already diminished, together with profitability.

> At the same time that your earnings started to fall, you would have needed to buy firms and increase vertical integration. We couldn't afford it. (Supplier comment)

> There was a lot of pressure. Nokia was all the time pressing down costs. You are in a difficult situation. That kind of competence should have been built when things were still going well. (Nokia comment)

As acknowledged by the respondents, the suppliers should have engaged much earlier in mergers and acquisitions, which would have enabled them to grow capacity and to pursue other accounts. These mergers and acquisitions could also have been undertaken in a manner that would have enabled them to take part in the industry trend of growing vertical integration that enables larger-scale systems deliveries. This would have enhanced their long-term competitiveness and ability to attract new customers. However, it seems that the suppliers were too embedded in their relationship with Nokia to truly understand the industry developments taking place and the consequences of these changes. Thus, they did not reduce dependence early enough.

Performance Implications of Relationship Asymmetry

The inability of the Finland-based suppliers to adjust to the changing industry conditions has had clear performance implications. Table 2 summarizes the performance of the Finnish suppliers and their main customer Nokia.

The latter part of the 1990s up until 2002 was a period of strong growth and profitability for the suppliers. Around 2001–2002, the industry growth leveled off and also marked a turning point in the relationship between

TABLE 2 Performance Data of the Case Firms

Case firm	Sales growth % 1997–2002	Sales growth % 2002–2007	Operating margin 1997	Operating margin 2007
Nokia	240	70	16.1	15.6
Elcoteq	167	25	4.5	−7.4
Perlos	552	120	4.8	−2.4
Aspocomp	63	−77	10.1	−37.3

the suppliers and Nokia. This change is reflected in the performance data. Sales growth and operating margin of the Finnish suppliers was still at a competitive level in the 1990s. However, starting from 2002 sales growth of the suppliers has leveled off and profitability has severely diminished. Operating margin, a measure reflecting the firm's value capture (Thornhill and White 2007), is quite low among the suppliers. Thus it seems that Nokia has been much more successful than Perlos, Elcoteq, and Aspocomp in value capture and has been able to withstand its position in a maturing industry.

For comparison purposes, Foxconn in 2007 had an operating margin of 7.3 percent. This indicates that it is still possible to maintain profitability in the industry as a supplier. Therefore, the problems faced by the Finnish suppliers relate more to the strategies they have pursued rather than the profitability of the industry as a whole. The weakened financial performance of the Finnish suppliers has forced many of them to liquidate assets and to become acquisition targets. In 2007, Perlos was acquired by Taiwanese subcontractor Lite-On. Aspocomp has effectively been forced to exit the handheld device business, and it has sold its manufacturing units in China and India to a Hong Kong–based firm. Elcoteq has been more successful than Perlos and Aspocomp in diversifying into other industries, and it still remains an independent firm, but its financial situation remains precarious. Therefore, it seems that Elcoteq's efforts, though in the right direction, started too late.

DISCUSSION AND ANALYSIS

The case of Nokia and its Finland-based suppliers is interesting in many respects. In the first instance, it exemplifies the dynamic nature of supplier–customer relationships. High dependence can be beneficial in some circumstances but less advantageous in others. In this case, dependence of the suppliers on Nokia has been key to their initial success at growth and internationalization but doesn't seem to be carrying them equally well through the period of industry maturity.

This development can be explained by reference to the earlier developed propositions, for which we find support. As stated in Proposition 1, a

strategy of MNC-led growth and internationalization decreases relationship symmetry due to the supplier's high dependence on the MNC. In many ways, one can say that a decision by relatively small suppliers to closely ally themselves with one main customer as a way to grow and internationalize made them highly dependent on Nokia. Here asymmetry rests on the "sales and profit" approach as well as relative differences in firm sizes.

At the same time, and as discussed in the literature review, asymmetry in relationships is a complex phenomenon. Relationships that are asymmetric in an overall sense may depict varying degrees of interdependence in specific areas of the relationship. For instance, dependence may stem from possession of critical resources for which there may be lack of alternative sources or the partner's ability to facilitate advancement of strategic objectives. In the case studied here, the Finland-based suppliers provided critical resources that Nokia could rely on to support its growth and internationalization efforts at a point in time when there were less attractive alternative sources of supply. These factors balanced relationship symmetry.

In the conceptual framework, the factors that balance relationship symmetry have been operationalized through the relational variable of commitment, which helps to explain to a large extent why the relationship was for a long time mutually beneficial despite seemingly asymmetrical dependence. For instance, in terms of calculative commitment, factors such as goal congruence, partner competence and reliability, as well as the comparison level of alternatives were critical factors that balanced relationship symmetry despite the suppliers' high dependence.

This more rationally based commitment was furthermore supported by high affective commitment in the form of cultural similarity, and intense and open communication. Based on case findings, cultural similarity can be understood in several ways. Typically cultural similarity is thought of in terms of national culture. However, it seems that in this case, an equally important factor that contributed to affective commitment was a filial attitude between Nokia and its suppliers. In a sense, Nokia acted as a parent that provided its suppliers with nurture and guidance in exchange for compliance with its requests. These filial relations were maintained by intense communication and close personal relations between key individuals at Nokia and the supplier firms. Throughout this early period, Nokia was more powerful than its suppliers, but this asymmetry was used as a tool to obtain better coordination of the supply chain for the benefit of all participants. Therefore, we also find support for Proposition 2: The MNC's high levels of affective and calculative commitment toward the supplier increase relationship symmetry.

The problem from the supplier's perspective is that they failed to understand the vulnerability of the relationship. More specifically, in Proposition 3 we stated that changes in the external environment, such as evolution in the industry life cycle, may have a negative effect on the MNC's levels of affective and calculative commitment toward the supplier,

thus diminishing relationship symmetry. From the case study, it is evident that Nokia's attitude toward its suppliers changed dramatically as the industry entered into the globally mature stage. It was emphasized by Nokia respondents that although the company continued to foster a general positive feeling toward the Finnish suppliers and a sense of moral obligation, the business case for cooperation deteriorated due to weakened competitiveness of the Finnish suppliers and the availability of other, more competitive alternatives. Thus factors related to calculative commitment overshadowed those related to affective commitment. It was at this point that Nokia, in the words of one of the suppliers, became "much tougher." Thus, levels of calculative commitment diminished due to a switch in Nokia's priorities from growth to cost containment, and the lack of supplier competences to match these changing priorities. At the same time, the better comparison level of alternatives enabled Nokia to seek other partnerships. It was at this point that Nokia began to wield its power in a way that led to a gradual deterioration of the suppliers' position and performance. This reversal seems to have coincided also with the changed profile of Nokia as it had become a more global company in terms of operations and personnel. For instance, new, non-Finnish managers from outside the firm were recruited to the company's purchasing function, which seems to have facilitated exploration of new partnerships.

Lastly, in Proposition 4, we stated that the supplier can increase relationship symmetry by enlarging its customer scope through ways that avoid channel conflict. This proposition explains, to a large extent, the deteriorating position of the Finnish suppliers. Namely, they failed to broaden customer scope early enough. Long-term competitiveness would have required systematic and credible efforts to seek a wider customer base already in the international growth stage of the industry. As first-tier suppliers to one of the world's leading mobile phone manufacturers, they should have been in a position to leverage learning and reputation effects to gain other major accounts. An explanation as to why they failed to do so is one of the most pertinent findings of this study.

First, given the important position of Nokia, the suppliers were extremely careful to avoid conflict in the relationship. Although Nokia understood that its suppliers would need to diversify their relationships so as to have sufficient scale economies and cost competitiveness, the company, according to its suppliers, nevertheless displayed sensitivity to any interruptions such activities may have to its goal of ensuring availability of high-quality components. It seems that these underlying sources of conflict hindered the suppliers' efforts to diversify customer relations and also made it more difficult to discuss possibilities openly.

However, given that Nokia, in principle, understood the importance of diversified customer relations for its suppliers' long-term competitiveness, it seems that efforts to do so would have been possible. In hindsight, this would have required mergers and acquisitions with other industry

participants to create sufficient scale and capacity. These mergers and acquisitions could also have been undertaken in a manner that would have enabled them to take part in the industry trend of growing vertical integration that enables larger scale systems deliveries. Unfortunately, such efforts were not actively pursued by the suppliers due to lack of strategic foresight.

Therefore, it seems that the crux of the matter lies in the suppliers falling captive to their own success with subsequent inability to correctly anticipate the consequences of external changes on the focal relationship. The 1990s were characterized by such rapid growth, good profitability, and a well functioning cooperation with Nokia, that it was difficult for the suppliers to see the magnitude of the changes that lay ahead. Therefore, the efforts to reduce dependence were not entirely wholehearted. It was only when their performance had started to significantly deteriorate that the suppliers truly appreciated the pitfalls of high dependence on Nokia and stepped up their efforts to reduce dependence. However, all this came too late. The competences and financial position of the suppliers were not on a strong enough level to support such efforts.

Nevertheless, based on experiences in this particular industry, it seems that there are two possible avenues open to suppliers that want to expand customer scope. One is that the supplier diversifies horizontally, meaning that it operates in multiple industries. This is a strategy that Aspocomp, Elcoteq, and Perlos have attempted to follow but have fallen short of, resource-wise. In this way, the supplier avoids customer dependence, and is also able to avoid catering to close competitors. With this alternative, the potential for conflict is the lowest. The other, and possibly complementary, solution is that the supplier possesses such unique competences that buyers are willing to accept simultaneous cooperation with a competitor. Foxconn, for example, seems to have competences that have wide industry appeal. Its competence is based on cost efficiency combined with sufficient differentiation. By having large-scale operations in low cost locations, it is extremely cost competitive. At the same time, its high degree of vertical integration and systems integration capabilities enables it to respond to the fast industry product cycles in a cost-effective manner. This makes it an attractive partner even for handset manufacturers that are competing against each other.

CONCLUSIONS

This article started with the premise that as a response to growing competitive pressures, companies have increasingly begun to develop closer relationships with their suppliers (Sheth and Parvatiyar 2002; Ulaga and Eggert 2010), thus elevating in importance studies that examine asymmetry in relationships. To contribute to this gap in existing research, we have conducted an in-depth case study of Nokia and three of its Finland-based suppliers.

By concentrating on the patterns of power-dependence relations as determinants of channel behavior and performance, we have conceptually positioned this study under the behavioral approach (Stern and Reve 1980). Furthermore, we have adopted Stern and Reve's (1980) notion that interorganizational relationships are evolutionary in nature whereby interactions between external environments and internal relationships characteristics cause changes in the relationship. Thus, unlike many previous studies in supplier–customer relationships, our analysis has concentrated on changes in patterns of power-dependence relations over time and as a response to changes in external environmental conditions. Furthermore, we have examined both sides of the relationship.

Although the behavioral processes of power and dependence are among the most widely studied aspects of channel relationships (Anderson and Narus 1990), previous studies exploring the relationship between dependence and use of influence strategies have produced inconsistent results. These inconsistencies in existing research have been attributed to the multidimensional nature of relationship asymmetry (Johnsen and Ford 2008; Hammervoll 2005) and to the existence of moderating variables such as relational norms (Crosno and Dahlstrom 2008; Lai 2009). To create greater clarity, more in-depth exploration of these dynamics has been highlighted as a key line for future research (Hammervoll 2005).

As is evident from our study, the sources and consequences of dependence in relationships is a complex phenomenon. More specifically, relationships that according to an overall assessment seem highly asymmetrical can nevertheless be balanced by interdependencies in particular areas of the relationship (Larson 1992). In this study, we have used the relational variables of trust and commitment as key variables of interest (Lai 2009). Thus, suppliers that are highly customer-dependent as frequently measured by means such as the sales and profit approach (El-Ansary and Stern 1972) or relative differences in firm sizes (Johnsen and Ford 2008) may nevertheless be engaged in fruitful collaboration given that the relationship is balanced through the presence of relational variables such as trust and commitment. More specifically, we have discussed affective and calculative forms of commitment (Kumar et al. 1994) as important relational variables that balance an otherwise asymmetrical relationship.

Based on this study, we would conclude that high supplier dependence on an MNC does not automatically involve actual misuse of power. Instead, as pointed out in some previous works (e.g., Scheer and Stern 1992; Provan and Gassenheimer 1994; Frazier and Antia 1995; Maloni and Benton 2000), relationship asymmetry can be used as an effective tool to promote channel cooperation. However, as demonstrated in this study, such positive outcomes require high mutual commitment between the supplier and customer.

Consistent with Stern and Reve (1980), the challenge from the perspective of the more dependent partner is the evolutionary nature of relationships. More specifically, we find relationships characterized by asymmetrical dependence to be unstable due to the potential for changes in the external environment to impact on the relational variables that govern the relationship. When this occurs, the more powerful partner is tempted to wield its power against a weaker partner (e.g., Frazier et al. 1989; Anderson and Weitz 1989; Geyskens et al. 1996), so that in the long run the position of the weaker party will deteriorate to the point that the partnership is destroyed (McDonald 1999). Thus, suppliers engaged in close collaboration with large, more powerful customers must not only have an intimate understanding of the variables that govern a particular relationship, but also of the potential for changes in the external environment to disrupt these dynamics. Furthermore, due to the instability of such relationships, high customer dependence is best viewed as a temporary condition and the supplier should actively seek for strategies to reduce dependence.

The findings in this study stem from a single case in a single industry, which therefore limits their generalizability beyond the context studied here. For future research, we suggest that similar instances of asymmetrical dependence between suppliers and MNCs be studied, particularly those in which the consequences of asymmetrical dependence vary through time, so as to better understand the dynamics governing such relationships.

IMPLICATIONS FOR BUSINESS MARKETING PRACTICE

Based on findings in this study, we find that close collaboration between suppliers and customers, for instance in the form of supply chain coordination by strong "channel captains," can result in a wealth of benefits for all the parties concerned despite problems traditionally associated with asymmetrical relationships. As demonstrated in this study, close collaboration between Nokia and its Finland-based suppliers contributed to successful internationalization efforts, and for many years, resulted in high growth and profitability for both the suppliers and Nokia. Thus, even though the suppliers were highly dependent on Nokia for their sales and profitability, this dependence was used as an effective tool to promote supply chain coordination for mutual benefit.

At the same time, as demonstrated through the case of Nokia and its suppliers, such relationships are risky and can expose the supplier to power influences. Thus, relationships characterized by high customer dependence must be actively managed. Active management requires that the supplier understands the dynamics that govern the relationship. In particular, if the supplier is highly dependent on the customer in terms of sales and

profitability, it must ensure that the relationship is balanced through other types of commitment.

In terms of different types of commitment, we find that although affective forms of commitment such as cultural similarity and well-working communications are important, such factors are not sufficient to maintain the relationship. Instead, continued commitment to the relationship requires the presence of calculative forms of commitment such as goal congruence, confidence in the partner's competence and reliability, and a low comparison level of alternatives. Thus, the customer's commitment to even long-standing relationships can quickly deteriorate if calculative commitment weakens as a result of changed external industry conditions. In the case of Nokia and its Finland-based suppliers, the suppliers failed to appreciate the changes that would occur in the relationship as a result of increasing industry maturity.

Thus, suppliers that are highly customer dependent must intimately understand the boundary conditions that govern such relationships, and even more importantly, the larger context within which the relationship develops, so as to be able to anticipate and adjust to change. Such active relationship management is likely to present a key managerial challenge. As also noted in previous studies (e.g., Johnsen and Ford 2008), we find that suppliers easily become over embedded in their relationships with large customers. Thus they are not perceptive to changes that are occurring in the larger network and do not anticipate how these changes may impact on their relationship with the customer. Lack of such perceptiveness can have drastic consequences, particularly in highly dynamic industries.

Moreover, given the inherent instability of relationships characterized by asymmetrical dependence, suppliers that choose to become dependent on a large customer need to nevertheless have a clear exit strategy in mind. As is evident in the case of Nokia's suppliers, this can at times be difficult to keep in mind when the benefits of collaboration are more evident than the potential and still unrealized drawbacks. To reduce dependence, the supplier has two basic alternatives: to seek cooperation with other actors in the same industry and/or diversify its relations to other industries. To do this, the supplier should leverage learning gained from its existing relationship with the MNC, as well as build capabilities to attract other partners. This should be done in ways that avoid unnecessary conflict, so as to preserve the existing relationship upon which the supplier continues to depend.

In terms of building new capabilities, the developments within the electronics manufacturing industry suggest the growing importance of systems integration (Davies, Brady, and Hobday 2007; Helander and Möller 2008) whereby the supplier is able to deliver larger subassemblies or even complete end products. Such practices enable a shorter lead time for product delivery, a faster development cycle, and lowered total costs. Thus, as the industry life cycle progresses from innovation-based growth to efficiency-seeking maturity, the supplier base tends to consolidate to form large-scale system integrators. Suppliers that are tied to a single main customer often

lack the scale needed to support such a transition, which requires significant investments. In such circumstances, merging with other suppliers possessing complementary assets and capabilities may present a feasible option.

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Paper 3

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Service transition strategies of industrial manufacturers

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ABSTRACT

Manufacturers are increasingly adopting service based strategies to maintain competitiveness in the face of commoditization, slower growth, and declining profitability in core product markets. The objective of this study is to explicate the transformation process towards services in more detail. We find that manufacturers develop product related services through a dedicated service division designed to exploit the commercial opportunities of servicing an installed base of equipment. At the same time, the strategy of integrated solutions is utilized to enhance the competitiveness of their core product offering under industry conditions which make it difficult to maintain competitive advantage purely through technological leadership. These logics are investigated through case studies of two industrial manufactures.

1. Introduction

The global economy is increasingly driven by services and growing service intensity among manufacturers has been noted as key to sustained competitiveness in the face of commoditization, slower growth, and declining profitability in core product markets (Fang, Palmatier, & Steenkamp, 2008; Spohrer & Maglio, 2008; Vargo & Lusch, 2004; Wise & Baumgartner, 1999). This empirical reality has contributed to growing academic interest in so called "service transition strategies"— a term coined by Fang et al. (2008) to describe literature concerned with explaining service transformation processes of manufacturing firms. Despite considerable efforts, research in the field remains fragmented thereby leading to an incomplete understanding of actual product-service integration and delivery among manufacturers (Antioco, Moenaert, Lindgreen, & Wetzels, 2008). For instance, it is not clear how product manufacturers move beyond basic product related services to more advanced ones with a higher differentiation potential (Antioco et al., 2008). It has also been noted that growing service intensity among product manufacturers should not be seen as a one-dimensional effort to transform manufacturing organizations into service-oriented firms, but rather as a delicate balancing act in which multiple business logics must coexist (Windahl & Lakemond, 2010).

To contribute to this important and emerging research stream, the purpose of this study is to provide a more holistic understanding of the service transformation process among industrial manufactures. To do so, we conduct in-depth case studies of two global manufacturers operating in the metal engineering sector to explore the ways in which these manufacturers exploit different types of service intensive strategies. We furthermore investigate the solutions selling concept as a promising alternative through which to transition towards advanced services while building on and strengthening the competitiveness of the firm's core product manufacturing operations. These different perspectives on service and solution innovation help to clarify and extend existing research in the field, so as to produce a more accurate portrayal of the organizational logics and challenges involved in managing a transformation towards greater service intensity among industrial manufacturers.

2. Service transition strategies: a conceptual review

The purpose of this section is to outline different types of service transition strategies available to manufacturers on a continuum from basic to advanced, and then to discuss the concept of solutions as a potentially powerful alternative through which to transition beyond basic product related services.

2.1. The service transition logic

The services stream of the literature acknowledges the growing importance of service strategies due to financial, marketing, and strategic considerations. In terms of financial benefits, substantial revenues can be gained from servicing an installed base of products with a long life cycle (Knecht, Leszinski, & Weber, 1993; Potts, 1988). Services also have higher margins than products (Anderson, Fronell, & Rust, 1997) and provide a more stable source of revenue as they are more resistant to fluctuations in the economic cycle (Quinn, 1992). In terms of marketing benefits, a service orientation can help to sell more

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products (Mathe & Shapiro, 1993). More specifically, product service strategies have been found to influence overall client satisfaction (Burger & Cann, 1995), to facilitate new product adoption (Frambach, Ward, Hutt, & Reingen, 1997), and to strengthen the client's confidence and the supplier's credibility (Hawes, 1994). Also, Vandermerwe (1994) emphasizes that clients want to take advantage of the supplier's know-how to derive more value connected with the use and performance of products. As for strategic considerations, competitive strategy based on services is thought to form a more sustainable source of competitiveness. For one, technological superiority is increasingly more difficult to maintain (Grönroos, 1990). At the same time, maintaining overall cost leadership is often not possible (Zeithaml & Bitner, 1996). Therefore, a service based strategy is thought to provide an attractive possibility due to the more intangible and difficult to copy nature of services (Anderson & Narus, 1995; Oliva & Kallenberg, 2003).

2.1.1. Types of service transition strategies

Within the service transition literature, it is noted that services can take many forms. For instance, a distinction is made between traditional services such as after-sales services and more advanced ones (Cespedes, 1994). It is argued that while traditional services continue to be important, manufacturers should also consider more advanced services to meet customer expectations and to fully exploit downstream opportunities (Burger & Cann, 1995). Mathieu (2001) classifies these different types of services as those which support the supplier's product (SSP) and as those which support the client's action (SSC). SSP are product services designed to ensure proper functioning of the product and/or to facilitate the client's access to the product. Examples of SSP include product maintenance, installation, monitoring, and repair. SSP are fairly standardized and demand low relationship intensity. SSC, on the other hand, are "services as a product" which customers can buy without purchasing the tangible product. Examples of SSC include financing, process-oriented training, and business-oriented consulting. SSC entails high relationship intensity between the seller and buyer, a high level of customization, and an emphasis on people as recipients. According to Oliva and Kallenberg (2003), transitioning to services can best be understood as moving along a continuum. The most advanced stage is achieved when the focus of the value proposition shifts away from product functionality towards the product's effectiveness in the end user's process.

2.1.2. Organizational challenges related to a service transition

As new types of capabilities are needed to transition towards advanced services, manufacturers' traditional advantages tend to diminish rapidly once they move beyond basic services tied to the product. At this point the firm will face more competition from professional service organizations such as consulting firms without being able to rely on knowledge spillovers from manufacturing operations (Antioco et al., 2008; Markides & Williamson, 1996). Consequently, Gebauer, Beckenbauer and Fleisch (2004) find that margins on SSC are typically less than for SSP.

At the same time, it is argued that basic services are core skills and resources that are required to participate in the market (Matthyssens & Vandenbempt, 2008). They act as an entry barrier, but do not provide a sustainable source of competitive advantage (Levitt, 1981; Matthyssens & Vandenbempt, 1998; Wagner, 1987). Thus, companies that want to differentiate themselves must provide advanced services that offer superior value through customization and proactive sensing of client expectations (Matthyssens & Vandenbempt, 2008). In other words, firms must transition towards services tied to the customer's process (Mathieu, 2001). While this transition is expected to be difficult to realize, Fang et al. (2008) suggest closer investigation of solutions selling as a potentially attractive service strategy which, through the integration of products and services, ensures synergistic spillovers between service and core product operations thereby facilitating the manufacturer's transition towards growing service intensity.

2.2. Solutions

Given the potential effectiveness of solutions selling to contribute to a service transition, this strategy is discussed in more detail. The concept of solutions has developed through an independent stream of research. It has roots in the so called systems selling approach whereby product marketers began to expand their offerings into product systems thus assuming responsibility for integrating pieces of capital equipment into larger functional systems (e.g. Hannaford, 1976; Mattsson, 1973; Page & Siemplenski, 1983). In more recent literature, the term system is taken to refer to a physical product system, which is the result of a technical engineering-based task, whereas a solution also consists of strategic and consultative business activities (Davies, Brady, & Hobday, 2006). For the purposes of this study, we define solutions as "individualized offers for complex customer problems that are interactively designed and whose components offer an integrative added value by combining products and/or services so that the value is more than the sum of the components (Evanschitzky, v.Wangenheim, & Woisetschläger, 2011-this issue)".

2.2.1. Different types of solution providers

Within the general category of solutions, it is possible to identify different types of solution providers. Essentially, solution providers can be systems sellers or systems integrators (Davies, Brady, & Hobday, 2007). The systems seller is highly integrated vertically and responsible for system design, interface and component specifications, product development, production of individual components, the integration of components into a system, and the provision of services to operate and maintain a system over its life cycle (Davies et al., 2007). The systems seller mode of operation is more consistent with the traditional notion of solutions as integrated product systems whereby internal control over system components enables superior 'fit' resulting in greater interfacing efficiency and optimized performance (Page & Siemplenski, 1983).

The systems integrator, on the other hand, is a prime contractor responsible for designing and integrating externally supplied product and service components into a customer specific solution. This model emphasizes the advantages of specialization and modularity in component supply, standardization of interfaces, and the ability to specify and integrate multi-vendor sources of technology and product supply. Such an approach emphasizes the ability to build and manage external networks of partners that can be mobilized around solution delivery (Windahl & Lakemond, 2006; Davies et al., 2007).

A complementary perspective has been proposed by Raddats and Easingwood (2010) who distinguish solutions based on the vendor orientation of the provider. Vendors can essentially provide solutions based on their own products or in the form of vendor agnostic solutions whereby competitors' products can be integrated as part of the solution. The vendor agnostic approach recognizes the need for solution providers to shift from product to customer centric in the sense that they should try to find the best possible solution for the customer, instead of trying to sell as many products as possible (Galbraith, 2002). This may require recommendation of competing products if this is in the customer's best interests. However, Kowalkowski (2005) sees this as the most radical form of customer centricity and deems it to be an ill-suited approach for companies with strong engineering and R&D capabilities.

Despite the high potential of solutions to add to customer value, the strategy is not easily implementable (Johansson, Krishnamurthy, & Schlissberg, 2003). More specifically, firms attempting a transition must "transform almost every aspect of the way they do business — from their business strategies and positions in the value stream, to their capabilities, organizations structures, cultures, and mindsets

(Brady, Davies, & Gann, 2005)". We briefly discuss these challenges in the subsequent section.

2.2.2. Organizational challenges related to solutions selling

In terms of cultures and mindsets, a solution orientation is usually seen to imply a change in attitudes and conventional ways in thinking. The required changes in culture and attitudes are sometimes discussed in terms of a shift from goods to a service dominant logic (Vargo & Lusch, 2004). A goods dominant logic implies a view whereby goods (tangible output embedded with value) are the primary focus of value in exchange and services are seen as an add on that enhance the value of a good. The service dominant logic, in contrast, implies "a process of doing something for another party" (Vargo & Lusch, 2008). In this view, the offering is co-produced with the customer in an interactive process of needs definition and refinement. The ultimate aim of the firm is to assist customers in their value-creation processes and tangible goods serve as appliances for service provision rather than as ends in themselves. Managers who have been reared up in product based organizations have learned to excel at designing and manufacturing superior products, and managing the processes involved in making and selling them (Brady et al., 2005). Getting them to shift mindsets and to develop the needed capabilities to function under service based logic thus represents a concrete management challenge.

Emphasis on greater customer orientation and co-creation processes has recently led to a more relational perspective on solutions (e.g. Tuli, Kohli, & Bharadwaj, 2007). Accordingly, solution selling can be understood as "a relational process comprising the definition of the customer requirements, customization and integration of goods and services, their deployment, and post-deployment customer support" (Evanschitzky et al., 2011-this issue). In this process, emphasis should be placed on understanding of the customer's broader business needs and operating environment, and finding ways to better link with these processes. Transforming the capabilities at the customer interface is expected to be one of the most critical challenges involved in transitioning towards solutions (Johansson et al., 2003).

In terms of structural issues, it has been noted that firms must change their organizational structures to accommodate for integrated solutions. As noted by Woodward (1965, p. 71), particular forms of organization are appropriate for each system of production. Whereas large batch and mass production systems tend to have mechanistic types of management structure, unit and small batch systems have organic structures. If one conceptualizes solutions as individualized offers for complex customer problems (Evanschitzky et al., 2011-this issue), it seems likely that project based organizations are a more suited method of organizing around solutions thus necessitating organizational separation.

Finally, solution providers tend to prefer the development of customized solutions tailored to individual customer needs since uniqueness is at the core of solutions thinking and forms the basis for the value proposition. However, offering customized solutions for each customer is expensive and often not enough to guarantee long term growth and profitability. Thus, solution providers must learn to build solutions that are scalable. It is often possible through product modularization and standardization to develop unique solutions that are composed of fairly standardized modules and components (Mattsson, 1973; Page & Siemplenski, 1983). In the very minimum, the processes used to develop solutions must become routinized (Davies & Brady, 2000).

2.3. Service transition strategies of industrial manufacturers

Based on a review of existing literature in the field of service transition strategies, one can deduce that research in the area is extensive, but disaggregated. While the literature is unanimous in pointing to the importance of building greater service orientation in industries characterized by slow growth, product commoditization, and high cyclicality (e.g. Fang et al., 2008; Wise & Baumgartner, 1999), the details of this transformation remain less clear. This is particularly the case in the industrial manufacturing sector where firms must strike a balance between their core product manufacturing operations and growing service intensity (Windahl & Lakemond, 2010). In the context of this study, we are particularly interested in understanding the way in which manufacturers exploit different types of service intensive strategies ranging from those tied to the product (SSP) to those tied to the customer's process (SSC), as well as the organizational alternatives and challenges related to managing this transformation. These issues will be investigated in detail through two in-depth case studies of industrial manufacturers to provide a more integrated perspective on the service transition logic within the industrial manufacturing sector.

3. Methodology

Consistent with the suggestion by Antioco et al. (2008), the aim of this study is to develop a better understanding of actual product-service integration and delivery among manufacturers through a qualitative orientation that relies on an integrated theoretical approach and is focused on a limited number of industry segments. In terms of a qualitative orientation, we rely on the case study methodology, which has been recognized as a suitable method for the study of complex, real life phenomena such as strategic changes or reorganizations (Gummesson, 2000; Yin, 2003). As for theoretical integration, we draw on the more general literature stream related to service transition strategies (Fang et al., 2008) and then complement this with a focused perspective on solution selling, so as to generate a more complete understanding of product-service integration. To provide for contextual understanding, we have chosen to study the phenomenon in the context of the industrial manufacturing sector.

More specifically, we rely on two in-depth case studies of global manufacturers operating in the metal engineering sector. As mentioned by Cova and Salle (2007), globalization and the resultant more rapid commoditization of products have put high pressure on prices, which is seen as a major factor that explains the emergence of service intensive strategies such as solutions. Global companies that operate in industries which are weakly protected by local barriers to competition tend to face such pressures more severely and should be at the forefront of developing organizational adaptations to cope with them.

The cases of Wärtsilä and Kone were chosen because of their strong service orientation and also because of the possibility to gain unique access. Wärtsilä and Kone are both industrial manufacturers of capital equipment that are headquartered in Finland, but operate globally. Both firms are strong actors within their respective industries and can thus be assumed to depict successful strategic adaptations to their surrounding operational environments. Wärtsilä is a manufacturer of ship power equipment including engines and propulsion equipment. Kone manufactures elevators, escalators, and automatic doors. Both firms have undergone a strategic reorientation towards provision of services and solutions. Access was gained through involvement of the case firms in a multiyear research project aimed at investigating firm competitiveness in global, highly competed industries.

Altogether 33 interviews have been conducted at these firms with positions of informants ranging from manager to division head. Company representatives have attended seminars and workshops to discuss project findings. The interviews at these firms were recorded and transcribed. Each interview lasted between 1 and 2 h. 13 out of the total 33 interviews focused particularly on service transition strategies while the other interviews belonged to the larger overall project and were designed for the purpose of gaining an enhanced understanding of the strategic posture and competitive environment of these firms. The extensive interview rounds conducted at these firms enabled the development of background understanding through

which to place the service transition strategies of the case firms within the context of the firm's overall strategy and operating environment (Gummesson, 2000). To protect the anonymity of respondents, we simply indicate the respondent's level of seniority and the firm in question in connection with direct quotations.

The research process utilized in this study is best described as abductive. Key to the abductive approach is recognizing that forming an understanding of a phenomenon is an intuitive and iterative process that occurs in recursive interplay with deduction and induction in order to form theoretical insights (Locke, 2010). Abductive research is fittingly described by Dubois and Gadde (2002) under what they term "systematic combining"— an approach that advocates continuous movement between the empirical and model world. During this process, the research issues and the analytical framework are reoriented against evolving findings from the empirical world. For instance, the author's initial interest was primarily on the strategy of integrated solutions as a way to enhance firm competitiveness under challenging industry conditions, but through research it became apparent that this strategy is best understood in the context of a more extensive service transition process. Thus data collection and analysis has occurred in stages and earlier findings have directed successive phases. The data has been categorized and analyzed manually according to emergent conceptual frameworks or themes (Yin, 2003). Primary importance has been given to understanding the drivers for greater service intensity as well as the organizational alternatives and challenges related to managing this transformation.

4. Empirical findings

This section describes in detail the service transformation processes of Wärtsilä and Kone. We first provide short case summaries. This is followed by a closer analysis of different types of service strategies offered by the firms, and the logics and organizational configurations for applying them, as well as a section highlighting key issues related to implementation.

4.1. Overview of the case firms

4.1.1. Case Wärtsilä

Wärtsilä is a Finland-based global provider of power solutions for the marine and energy markets. The firm has net sales of approximately 5 billion Euros and is composed of three divisions: Ship Power, Power Plants, and Service. In 2009 each of these divisions accounted for roughly 1/3 of sales. The findings reported in this study concern the firm's ship power division and related service operations.

Since the late 1990s Wärtsilä has worked to develop into a provider of complete lifecycle power solutions. This strategy was motivated by the fact that the shipbuilding industry has rapidly relocated to Asia which raises concerns over the development of competitors with the ability to offer lower cost products. Wärtsilä has traditionally based its competitive advantage on technological leadership and still considers this to be its core capability. At the same time, it believes that enhanced customer value and improved competitive position can be achieved through a strategy of life cycle solutions.

> *We are seeking on the other hand a more extensive product portfolio and packaging of the existing portfolio… Then, on the other hand, we are also trying to develop our service portfolio from spare part service to large scope operator contracts. (Vice President A, Wärtsilä)*

The ship power division's most important product group has traditionally been its medium speed diesel engines where the company is the global market leader with close to 40% global market share. As part of its strategy of integrated solutions, the company has considerably grown its product portfolio and competences through acquisitions of related businesses in propulsion and ship automation. This portfolio has been grown in a way that improves the firm's ability to offer integrated ship power solutions. The company's solutions can be sold as one integrated package consisting of the engine, propulsion equipment and related control and automation systems, which ensures interface compatibility and reduces customer risks. The company's solutions have been designed to optimize life cycle performance, for instance in the form of greater fuel efficiency, environmental friendliness, and operational reliability. Closely linked to Wärtsilä's solutions strategy has been further development of its ability to offer life cycle services to the installed base of products and solutions. The company has consistently grown its global service infrastructure both through organic growth as well as acquisitions.

4.1.2. Case Kone

Kone is a Finland-based global provider of elevators, escalators, automatic doors and related services. In 2009 the company had annual net sales of close to 5 billion Euros and is among the top four manufacturers in its industry. In 2009 new equipment sales accounted for roughly the same proportion of sales as service.

Similar to Wärtsilä, the firm defines itself as a technological leader. However, due to increasing industry maturity the technological gap between Kone and its competitors has been diminishing. Moreover, Kone believes that new innovations, when developed, are more rapidly diffused to competitors than before. Thus, the firm's future competitiveness cannot rest solely on technological leadership.

> *There comes a point of time when technology is so mature that it's very, very difficult to do a real innovation in technological terms… Companies, they start to think about that well, but we have other types of innovations too, not just technological. (Vice President, Kone)*

As a consequence, Kone has redefined itself as a provider of people flow and access solutions. The firm's aim is to enhance the ability of building users to move smoothly, safely, comfortably, and without delays in buildings. What this means is a greater reorientation around customer processes and priorities. To support this reorientation, Kone has invested extensively in enhancing its understanding of end user experience and behavior, as well as the processes and priorities of the direct buyer — usually the building developer. As a result, the company has been able to develop offerings that better link with these processes. For instance, the firm has developed elevator designs that are available for use already in the construction phase of the building thus speeding up and simplifying the construction process. To enhance the end user's experience, Kone has for instance developed an elevator concept for residential buildings that recognizes the user and enables the user to enter the building and arrive at their home door without opening any doors or pressing any buttons.

The newly adopted approach is in opposition to the firm's old product-centered culture where product technologies and product features were seen as key. The company believes that the new, more customer centered approach enables it to develop more innovative products and solutions, and to sell them more effectively. Kone also relies very heavily on product life cycle services as part of its overall service transformation process and has been consistently growing its service infrastructure.

4.2. Product services vs. solutions: logics and organizational configurations

The service transformation strategies of both Wärtsilä and Kone have proceeded along similar logics. On the one hand, both firms recognize the importance of further strengthening product related services aimed at capitalizing the commercial potential that exists in servicing the installed base. Both firms have a separate service division for this purpose. The service division drives the growth and

profitability of the respective firms and performs an important function in steadying revenue streams against industry cyclicality:

> *On the new build side we can't make big profits, but it's in a broad sense a service business. (Vice President A, Wärtsilä)Our activity today almost starts from product maintenance. It's the stable part, brings the capability to manage through recession times without sales and profitability plummeting. (Executive Vice President A, Kone)*

Despite increased emphasis on life cycle services as a driver for growth and profitability, product manufacturing operations remain crucial for both firms. While in the past competitiveness of the products rested on technological excellence and product leadership, the firms have come to realize that value can also be enhanced by changing the business model to customer centric solutions. The solutions business is closely integrated within the firms' product manufacturing operations. Complex, large scale projects requiring high customization are handled by dedicated global project teams that support the local sales force in solution delivery.

As part of the transformation towards integrated solutions both firms have grown the types of capabilities traditionally associated with services in support of the client's actions. Wärtsilä has for instance acquired ship design offices that have traditionally acted as external consultants in systems design and integration. Kone has developed capabilities in visual design, traffic planning, project planning, and specification analysis.

Neither firm provides vendor agnostic solutions in terms of integrating competitors' products into their solutions. Beyond that, Wärtsilä and Kone have adopted somewhat different modes. While both firms resemble more the systems seller rather than systems integrator, Wärtsilä has emphasized more heavily the benefits traditionally associated with the systems seller mode such as the benefits of control over the system components that accrue from internal manufacturing operations. Accordingly, the company has actually acquired more products into its portfolio beyond its base in engines. Kone, on the other hand, has not grown its product scope, but has grown its ability to integrate into building access and control systems whereby more complete solutions can be delivered in collaboration with partners. The difference seems to stem from the more modular nature of Kone's products whereby system interfaces are easier to coordinate with third parties. Also, the systems provided by Wärtsilä are extremely business critical as a ship is not operational if the propulsion system is not functioning. Thus, Wärtsilä aims to minimize risks by having internal control of critical components.

4.3. Key organizational challenges

The service divisions at both firms have been very successful in building product related services linked with the installed base. However, transforming into a solution provider is seen to present more critical challenges. These relate roughly to issues of organizational culture, and what we have termed as building of external effectiveness at the customer interface and achieving internal efficiency of operations.

4.3.1. Cultural reorientation from products to solutions

While for both firms the transition towards a solution orientation represents an important development path, currently a fairly small percentage of the firms' total turnover comes from large scale solutions requiring extensive customized engineering. Instead, both firms emphasize that the transformation represents first and foremost a change in orientation away from product focus towards greater sensitivity to customer needs. This is seen as a huge undertaking, not only because of the need to develop new capabilities, but also because of a cultural shift that is required:

> *Creating the competitiveness is now starting from the customer. It's a mindset. It's customer centric thinking. In the past it was that the operations were near the customer, but our operations were driven by the factories and technologies… It will take a painful change. You need to train your people to think differently. (Executive Vice President B, Kone)*

Despite increased customer and service orientation, both firms emphasize the continued importance of traditional product and technological excellence, as competitive solutions rest on competitive products and underlying engineering capabilities:

> *We can't just sell hot air. It needs to be well engineered, cost benefit solutions. (Manager, Kone)[The products] must be competitive… A typical mistake is that you have a unit where the product's competitiveness has for some reason diminished. You then often start to desperately think what to do and imagine that you can become a solution provider. (Executive Vice President A, Kone)*

Thus, transforming into a solution orientation is essentially a way to complement existing core capabilities in product excellence and technological leadership rather than to replace them or to compensate for lack of such capabilities.

4.3.2. External effectiveness at the customer interface

Both firms emphasize that becoming a successful solution provider necessitates a new way of interacting with the customer. For instance, as emphasized by Wärtsilä, solutions must be sold to decision makers who are able to assess the impact of the solution on the customer's costs, risks, and revenues. It is also important to understand that the value proposition must address the needs of both the direct as well as end customer/consumer. In the case of Wärtsilä, the direct customer is the shipyard and the end customer the ship owner. In the case of Kone, the direct customer is usually the building contractor and the end customer the building user. Also, both firms place critical emphasis on the fact that while a central feature of solutions is customer centricity, such an orientation does not entail doing whatever the customer asks:

> *Customer driven is a dangerous phrase… We need to be customer centric… We need to have a dialogue with the customer and not to take the customer requirements as granted… We need to ask several times what is your real need? Why are you asking that? Can we do it easier? Can we do it cheaper? (Executive Vice President B, Kone)*

To be able to have such a dialogue and to be able to deliver optimal solutions for a given need, customers must be engaged with early enough in the purchasing process and the dialogue must be open and intense, even to the point that the customer also adapts their internal processes to accommodate solution development:

> *If the sales function is not actively involved in the process then we receive a request for tender. At that point the solution may be entirely wrong for the building and somehow suboptimal for the customer. (Senior Vice President, Kone)The solution concept is more proactive because the idea is not just to design systems that fit the design of the ship, but rather affect the design of the ship, so that the systems will work optimally. (Director, Wärtsilä)*

Furthermore, new capabilities need to be built among the sales force to enable them to interact with the customer under a solutions based logic. This is not an easy undertaking. Partly it is an issue of concrete capabilities and experience, and partly of behavioral qualities and attitudes:

> *I believe in a product company the sales process is fairly straight forward. You actually develop people who are very good at working solo… When you talk about systems sales, then it's about how to bring together a team of multiple competences and complementing knowledge into solving a customer problem…so I, to some degree,*

feel that there are very challenging fundamental differences in personality and behavioral types. (Vice President B, Wärtsilä)

Thus, building of an effective sales organization capable of solutions sales is a slow and gradual undertaking, which requires not only extensive training, but also selection of people within the company who have a long enough experience and most importantly, who possess the right attitude and behavioral characteristics.

4.3.3. Internal efficiency of operations

Both firms emphasize the importance of building solutions that are not only effective, but also cost efficient. To achieve greater cost efficiency, both Wärtsilä and Kone emphasize that solutions should be as standardized as possible. The degree to which this can be done depends on the solution in question. Some solutions clearly require extensive customization and these projects are undertaken by global project organizations capable of such activities. With such projects, the key is to standardize processes related to project delivery as much as possible. At the same time, many solutions can be completed on a mass customization basis whereby the solution is unique, but consists largely of pre-existing modules:

If we understand for what situation and for what purpose the equipment is planned for, we can in principle mass customize for the customer a suitable, unique solution. (Senior Vice President, Kone)

The extent to which solutions can be easily packaged from pre-existing modules depends on the nature of the business. For instance, the products that Wärtsilä sells have not been modularized to the same extent as Kone's due to differences in underlying product architecture. Still, Wärtsilä feels that standardization degree of its products and solutions can be significantly enhanced by better integration into customer processes:

I would argue that customization often results for being there too late. We haven't been able to influence the customer's decisions at an earlier phase. (General Manager, Wärtsilä)

5. Discussion

Based on the cases presented, it seems that industrial manufacturers in the capital goods industry are increasingly adopting service transition strategies and these strategies largely conform to two distinct, but complementary logics. Firstly, industrial manufacturers offer services to the installed base of equipment through a dedicated service division. These are services in support of the supplier's product (SSP) although both firms have consistently worked to develop more advanced types of product related services such as maintenance contracts based on equipment availability (Oliva & Kallenberg, 2003). The service division in which these activities take place is the most profitable and highest growing part of their businesses. They are also extremely important to steady the revenue streams of these firms. At the same time, Wärtsilä and Kone have increasingly transitioned to services in support of the client's action (SSC) through a strategy of integrated solutions. The goal has been to enhance the competitiveness of the firm's core product business rather than to mark a transition into professional services per se thus ensuring synergistic spillovers between service and core product operations (Fang et al., 2008).

Given the reported difficulties encountered by firms in transitioning towards solutions (i.e. Brady et al., 2005; Johansson et al., 2003), we have also addressed implementation related issues. These relate to instilling a proper organizational culture and mindset, choosing the appropriate mode of solution provision, building of external effectiveness at the customer interface, and ensuring sufficient internal efficiency of operations— factors which were discussed in some length through the empirical analysis of the cases. Instead of repeating them here, we discuss them in reference to a transition towards the service dominant logic— a shift for which we find support (Vargo & Lusch, 2004).

In terms of cultures and mindsets, the cases point towards growing evidence of a shift among manufacturers from a goods-dominant to a service-dominant logic (Vargo & Lusch, 2004). This view implies recognition that goods in and of themselves do not form the focal point of exchange, but rather perform a service-delivery role in the customer's or user's own value creation processes. Some previous studies have questioned the application of the service dominant logic in the capital goods industry (e.g. Windahl & Lakemond, 2010). This challenge rests on the notion that industrial manufacturers must adopt integrated solutions alongside the established business based on goods and support services. Consequently, interpreting the emergence of integrated solutions as a shift from a traditional goods-centered logic to a service-centered logic has been seen as problematic (Windahl & Lakemond, 2010).

While we fully agree that manufacturers must indeed implement service transition strategies in ways that build on core strengths in product manufacturing operations and related support services, we argue that a shift towards a solution orientation is not inherently incompatible with this need. In fact, the case companies studied here are in no way abandoning their core product manufacturing operations or the emphasis they place on them and related support services as they transition towards solutions, but are rather gradually changing the way in which value creation through products takes place. Thus, firms must move away from a focus on product features towards greater orientation around customer processes, so that value can be added in other ways besides pure technological innovation. As emphasized by the case firms, this is a slow and painful, but nevertheless necessary process to guard long term competitiveness.

In terms of organizational configurations, the mode through which the case firms have chosen to deliver solutions further emphasizes the continued centrality of product manufacturing operations. Despite the notion that the systems seller approach is losing its appeal as a preferred mode of solution delivery (Davies et al., 2007), the case firms reported here resemble more closely a system seller rather than systems integrator. As further evidence of sustained centrality of the firms' product manufacturing operations, neither firm provides vendor agnostic solutions in terms of integrating competitors' products into their solutions despite the notion that such form of solution provision represents the greatest form of customer centricity (Galbraith, 2002).

To support the relational orientation required of solutions and to enable their co-creation (Tuli et al., 2007; Vargo & Lusch, 2004), both case firms have had to learn to interact with their customers in a fundamentally different way than a product centric organization. We have termed this creating external effectiveness at the customer interface. This does not entail taking customer requirements as a given, but rather as a starting point for a process of co-creating the solution (Vargo & Lusch, 2004). This requires also openness and willingness on behalf of the customers to adjust their internal routines thus supporting the notion that successful solutions depend not only on supplier variables, but also on customer variables (Tuli et al., 2007). Such an orientation tends to result in better solutions and helps the manufacturer to build internal efficiency of operations— another key characteristic of successful solution delivery.

To be able to engage in the kind of value co-creation described above, the firm must intimately understand the customer's own value creating processes, both of the direct as well as end customer, sales efforts must be directed at persons capable of understanding how the resultant solution impacts these processes, and interaction with the customer must occur through an extended sales process. Developing such capabilities at the customer interface is extremely difficult and time consuming. It requires extensive training, as well as selection of persons with the correct behavioral characteristics.

In terms of limiting organizational disruption and creating correct structures for solution delivery, both Wärtsilä and Kone undertake large scale projects requiring extensive customization through dedicated global project teams. However, a significant portion of solutions business at Kone and Wärtsilä can be conducted as part of the firms' normal operations with the exception that more emphasis is placed on customer requirements definition, value based selling efforts, and development of products and systems in a direction that enables better integration into customers' technical and/or business processes. Particularly in the case of Kone, the resultant solution can then be configured largely from pre-existing modules— again a feature that enhances internal efficiency of operations.

6. Conclusions

Consistent with the suggestion by Antioco et al. (2008), the aim of this study has been to develop a better understanding of actual product-service integration and delivery among manufacturers through adoption of a qualitative orientation that relies on an integrated theoretical approach and is focused on a limited number of industry segments. To do so, we have conducted in-depth case studies of two global manufacturers operating in the metal engineering sector, so as to explore the ways in which these manufacturers exploit different types of service intensive strategies. More specifically, we have drawn on the general literature stream related service transition strategies to explore how these firms exploit different types of service intensive strategies ranging from basic services in support of the supplier's product (SSP) to more advanced ones in support of the client's action (SSC). Existing literature notes the difficulty manufacturers experience in effectively transitioning to more advanced services in support of the client's action (Antioco et al., 2008). We have therefore, as suggested by Fang et al. (2008), explored how such a transition can be facilitated by drawing on the separate, but complementary stream of research concerned with solutions selling. These different perspectives on service and solution innovation help to clarify and extend existing research in the field, so as to produce a more accurate portrayal of the organizational logics and challenges involved in managing a transformation towards greater service intensity.

Exploration of these different types of service intensive strategies has also enabled better understanding of how fundamental paradigmatic changes, such as the service dominant logic, apply to the industrial manufacturing sector. Based on the cases studied here, we conclude growing service intensity among product manufacturers to represent an important transformation that supports applicability of the service-dominant logic within the industrial manufacturing sector (Vargo & Lusch, 2004). At the same time, this transformation is multifaceted with separate individual logics at play— the process of which is not well understood (Windahl & Lakemond, 2010). Based on the experiences of the case companies studied, we would argue that industrial manufacturers are in no way abandoning their core product manufacturing operations or the emphasis they place on them and related support services as they transition towards greater service intensity. Instead, these manufacturers engage in a range of product related services to exploit the commercial opportunities of servicing the installed base. At the same time, and consistent with the service-dominant logic, these manufacturers are increasingly adopting a solution orientation to create a gradual change in the organizational mindset, capabilities, and processes regarding how value creation and delivery through products takes place.

6.1. Managerial implications

In terms of managerial implications, we would advice managers to carefully consider the service transition logic in the context of their business. The extensive installed base of products characteristic of industrial manufacturers of capital goods provides an attractive base for product related services. At the same time, many such industries are characterized by slow growth, increasing commoditization, and declining profitability. One option would be to simply exploit the installed base logic and shift emphasis to life cycle services while improving the cost efficiency of product manufacturing operations. However, this may not be a long term solution for companies that want to maintain competitiveness of their core product manufacturing operations. The case firms studied here feel that pure cost based competition on the core product side is not an attractive long term strategy. Thus, a strategy of integration solutions has been adopted as a way to enhance the differentiation potential of the core product business.

At the same time, firms should understand that shifting to a solution orientation is slow and resource intensive as new mindsets, capabilities, and structures must be built. To accommodate for this reality, the change process should start from a position of strength, so that the firm has enough organizational slack to support this strategic redirection. Thus, solution transformation works best when used proactively rather than reactively. Related to this point, and as emphasized by the company respondents, a solution orientation complements excellence in products rather than compensates for relative weaknesses.

6.2. Limitations

In terms of limitations, the findings of this study rely on in-depth case studies of two industrial manufacturers operating in the capital goods industry. Thus the findings should be considered as applying primarily to contexts characterized by similar conditions. For instance, a service transition that lacks an installed base logic would probably look rather different. Furthermore, given that the findings are based on two cases, replication across more cases would enhance their generalizability.

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Paper 4

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Systems sales as a competitive response to the Asian challenge: Case of a global ship power supplier

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Abstract

Cost-based competition from East Asia has forced western companies to reassess their competitive strategies. It is difficult for western companies to attain cost leadership because of high domestic labor costs. Thus it is crucial to pursue differentiation. One way to do this is to shift the market from products to systems. To examine the role of systems as an enhancer of competitive advantage, this study synthesizes the literature concerning competitive advantage and systems. The emerging theoretical framework is then tested against an in-depth case study of a Finland-based ship power supplier. The findings suggest that systems can be a value-enhancing strategy whereby the seller takes over the buyer's value activities related to systems integration. Such forward integration results in enhanced systems performance at a lower total cost. This strategy, based on the seller's rare and valuable resources, is difficult for cost-based competitors to imitate or substitute.

Keywords: Competitive advantage; Systems; Systems sales; Competitiveness; Cost-competition; Product strategy

1. Introduction

Competitive advantage is one of the most fundamental concepts in international business because it ultimately determines a firm's success and even survival. Its importance is only growing as globalization tightens its hold. In particular, competition from newly industrialized countries in East Asia is challenging established players. Countries such as China with low labor costs and a high learning curve are forcing western firms to reassess their competitive position in the global market place (e.g. McKinsey & Company, 2005).

It is difficult for western companies to enhance their competitiveness through cost leadership strategies because of high domestic labor costs. Thus it is crucial to pursue differentiation successfully and companies, particularly those operating in mature industries need to take an innovative approach to product strategy. For many companies, this means high technology product innovation and such a strategy has generated numerous success stories. In Finland the most notable example would be Nokia Corporation. However, this article argues that innovation through skillful business process reengineering may be equally effective in strengthening a firm's competitive advantage through differentiation. One way to do this is to shift the market offering from products to systems—a product strategy that combines physical products, know-how, and system-specific services (Kosonen, 1991). Systems may enhance the seller's differentiation by both offering a better end product and by lowering the customer's total (though not initial) costs.

The findings of this study are based on a review of literature and past studies resulting in a process model, which is validated by examining a revelatory case from the shipbuilding industry. The shipbuilding industry provides a good case because it is a mature industry where the effects of globalization have been drastic. In fact, Cho and Porter (1986) call the shipbuilding industry "an extreme case of a global industry" where industry leadership has shifted repeatedly. Starting with the rise of Japanese shipbuilding in the 1950s and 1960s, competitive advantage, especially in the low and medium complex ship categories, has gradually

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shifted to Asia. European shipyards are still market leaders in highly complex ship categories such as cruise vessels, but the Asian shipyards are pushing to enter this segment as well (see for example Clarkson Research Studies, 2003; Drewry Shipping Consultants, 2002). The shift in competitive advantage has been so dramatic that the Finnish financial press has singled out shipbuilding as a symbol of declining Finnish competitiveness (Ahosniemi, 2004).

Thus the central objective of the study was, through a thorough review of earlier research and an in depth case study of a ship power systems supplier, to explore the following question:

How can international systems sales be used to achieve competitive advantage against cost-based competition derived from East Asia and other low cost countries?

2. Literature review

This section reviews existing research on competitive advantage and systems. The aim is first to explain what is meant by competitive advantage and then to examine what factors contribute to building it. Secondly, the concept of systems is examined to analyze how systems could contribute to building competitive advantage. A process model for enhancing competitive advantage through systems sales (Fig. 2) is presented at the end of the section.

2.1. Competitive advantage

Michel Porter is among the most widely quoted authors on competitive advantage. In the Porterian world, a firm's profitability depends on industry attractiveness and on the firm's relative position in that industry. The firm that is favourably positioned within its industry can earn above average profits regardless of the industry's overall profitability. However, to do this the firm must enjoy a sustainable competitive advantage that results from being able to create value for its buyers. This value may take the form of "prices lower than competitors' for equivalent benefits or the provision of unique benefits that more than offset a premium price" (Porter, 1985, 1991).

The main focus of this study is on containing the *competitive pressures from lower cost producers.* Their cost advantage is mainly based on the locational driver that affects the costs of labor, management, scientific personnel, raw materials, energy, etc (Porter, 1985). What makes this driver so challenging for western companies is its geographic specificity. It cannot be emulated without relocation, which is not a desirable strategy from the point of view of the western economies. Thus it is desirable that the *value propositions* of western companies are based on differentiation to offset their higher labor costs. This differentiating effect can occur through two ways—either the seller offers *lowered total costs* or *enhanced performance for the buyer.* At the same time, the differentiator must exercise strict *cost control*, so that it does not price itself out of the market (Porter, 1985).

Chen (1996) notes that competition is a function of firms' market profiles and resource endowments. Thus a firm that competes with lower cost producers could relieve competitive pressure either by changing its market profile or resource base in comparison with its competitors. For a global supplier to an industrial market the market profile may be difficult to change without giving up market share. However, by choosing to build on specific *resources* that cost-based competitors generally lack, the differentiator would deter the ability of cost-based competitors to respond to competitive moves. According to the resource based view (RBV) this resource heterogeneity is at the heart of competitive advantage (Barney, 1991; Peteraf, 1993). Resources are defined as "all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc., controlled by a firm that enables the firm to conceive of and implement strategies that improve its efficiency and effectiveness" (Barney, 1991). A differentiator could mitigate its labor cost disadvantage by strengthening and utilizing unique and valuable resources that are difficult for cost-based competitors to imitate.

An analysis of the firm's resource base needs to be combined with a market orientation. A firm pursuing a strategy of differentiation needs to identify customer segments that appreciate lowered total costs or enhanced performance—that is the value proposition needs to fulfil *buyer needs*. The seller also needs to be able to protect its value proposition through *entry barriers*. Entry barriers refer to difficulties encountered by new entrants to the market (Porter, 1985). The concept of entry barriers can be further complemented by the RBV's concepts of *unique and valuable resources*. Accordingly, firms must base their strategy on resources that are rare and difficult for competitors to imitate. Firm resources can be imperfectly imitable because their development has been dependent on unique historical conditions; the link between the resources and ensuing sustained competitive advantage is casually ambiguous; or the resources contributing to competitive advantage are socially complex (Barney, 1991).

Lastly, a competitive and imperfectly imitable value proposition needs *effective communication* to result in enhanced competitive advantage (Ronchetto, Hutt, & Reingen, 1989). The more difficult it is to measure the exact buyer value, the more rigorous the seller's signalling must be. Anderson and Narus (1998) propose that the seller builds a value model through input from its customers. Customer value models help to operationalize the seller's value proposition by demonstrating the "worth in monetary terms of the technical, economic, service, and social benefits" the customer receives in exchange for the price it pays (Anderson & Narus, 1998). As such value models are negotiated with customers, they also help to eliminate value drains—services that cost the supplier more than they are worth to the customers receiving them and that have no strategic significance.

2.2. Competitive advantage through systems

This section describes the concept of systems and analyzes how systems could enhance the seller's competitive advantage. The importance of systems has been acknowledged in the literature, but scant attention has been focused on how to operationalize and use systems for competitive advantage. Mattsson (1973, 1980) was one of the first researchers to define systems as a product and business strategy of an industrial company. Since then Andersson (1988), Hannaford (1976), Hanan, Cribbin, & Donis (1978), Kosonen (1991), Luostarinen (1979), Page and Siemplenski (1983), and Helander (2004) have also addressed the issue of systems. However, as Ahmed (1993) notes, contributions in the field of systems are still at a rudimentary level. No generally accepted theoretical frame has yet emerged and certainly not one that takes an international perspective. Furthermore, past research has not explicitly attempted to integrate the concepts of competitive advantage and systems.

The concept of systems in this study follows Kosonen's (1991) conceptualization. Systems include physical goods (components, equipment, machines, materials, etc.), know-how (technical, marketing, and/or managerial), and system-specific services (planning, project management, systems integration, installation, training, maintenance, operations). Sometimes the terms 'systems' and 'project' are used interchangeably, but this study adopts Luostarinen's (1979) view that systems is an international product strategy and projects are the operational mode used to transfer systems to the buyer. The value of systems is based on vertical integration that allows the seller to perform certain buyer functions in order to solve a buyer's problem (Mattsson, 1973). In essence, the systems supplier tries to shift the systems market from buyer to supplier-centric by replacing the buyer as a systems integrator. This can be represented as a transition from Fig. 1A to B.

2.2.1. Value proposition

The adoption of the supplier-centric systems model presupposes that the systems supplier must bring in some added value. Kosonen (1991) and Page and Siemplenski (1983) have described some potential benefits of systems that could be categorized under *lowered total costs for the buyer* and *enhanced performance for the buyer*.

Starting with the *lowered total costs for the buyer*, it is possible that a buyer has the necessary resources or know-how to develop systems internally, but concludes that it wants to concentrate scarce resources in its core businesses. A firm that specializes in the development of systems is often more cost effective. The systems seller will have developed some standardized solutions that will lower the cost of the system as opposed to the internal development of a customized solution (Kosonen, 1991; Page & Siemplenski, 1983).

The supplier centric systems model also insures the buyer against the costs related to system malfunction. Systems by definition are composed of several components that through the application of know-how have been integrated in a certain way. If the buyer integrates the system by itself it is extremely difficult to assign blame when the system does not perform according to specifications. This is because the smooth functioning of the system is often dependant upon interface efficiency rather than the functioning of individual components. The buyer has to bear the costs of system malfunction or suboptimal performance, and these costs can be significant. Buying the system from a single supplier provides a valuable insurance against such a risk (Kosonen, 1991; Page & Siemplenski, 1983).

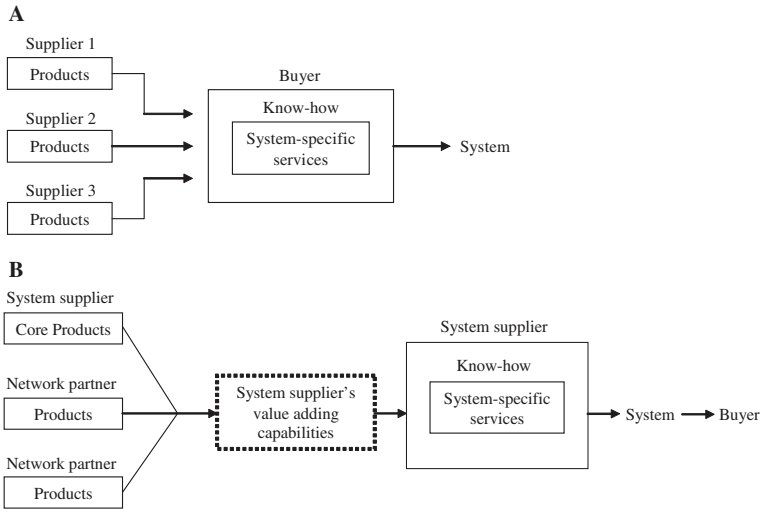

Fig. 1. A: Buyer-centric systems model. B: Supplier-centric systems model.

In addition to lowering total costs for the buyer, systems result in *enhanced performance for the buyer*. The buyer may, for example, lack human resources in the form of know-how. Internal development of such resources could be too expensive and/or time consuming, and result in suboptimal system solutions. Contracting systems from an experienced supplier enables the buyer to gain access to superior resources in systems integration thus enhancing its performance. Furthermore, even if the buyer possesses capabilities for systems integration, the systems seller is able to design systems, including product development of components, which have an advantage over systems constructed out of components from separate sellers. This is because the systems seller can achieve superior integration between its component producing units. As a result the fit between its components can be optimized. The extent of the differentiation effect produced depends on how efficiently a more loosely organized group under the buyer-centric systems model can perform the same task. This efficiency refers both to organizational efficiency in coordinating the units building the systems as well as to the innovative efficiency in developing better solutions (Mattsson, 1973).

Lastly, the systems supplier's service capabilities are an important part of the system seller's value proposition that can lower total costs for the buyer and enhance the buyer's performance. If one seller supplies the entire system it is quite natural for the seller to perform maintenance and operation services for these systems in a cost effective and reliable manner (cf. Helander, 2004). This may be an attractive option for the buyer who does not see operation and maintenance as its core activity. Maintenance and operation agreements also enable the systems seller to shift the emphasis from tangible products to intangible services. Services and know-how are widely seen as a way for western economies to compete in the future. Thus product strategies that increase the role of such valuable, rare, non-imitable and non-substitutable elements (Barney, 1991) should be competitive alternatives that lead to enhanced market position, which then results in superior performance (Hunt & Morgan, 1996).

2.2.2. Required resources

Furthermore, to be able to offer such value enhancing systems, the seller must possess some enabling resources and capabilities. Kosonen (1991) argues that physical products and system-specific services could theoretically be contracted out and the only mandatory system component to have is *superior systems know-how*. This know-how must be superior compared with that of the competition whether this competition refers to the buyer itself or to other competitors. However, *control of* complex and knowledge-intensive *key physical systems components*, the possession of *service capabilities*, and other valuable resource endowments controlled by the firm can also be sources of sustainable competitive advantage (Barney, 1991). Control of key physical system components improves organizational efficiency in coordinating the units building the systems and improves the innovative efficiency to develop better solutions (Mattsson, 1973, 1980). Furthermore, control of service capabilities has a crucial role in guaranteeing the life cycle performance of systems and in generating revenue for the systems seller (Helander, 2004). A *systems oriented sales force* is also needed to communicate the seller's value proposition (see Section 2.2.6) (Hanan, 1986; Hanan et al., 1978).

2.2.3. Cost control

There are several cost type consequences related to the introduction of systems that may push the price of systems so high that the effect of enhanced customer value is diminished. Mattsson (1973) divides these costs into those needed to enter the systems business and those incurred in the actual business. Significant costs are involved in entering systems business such as investments into know-how for basic system development, system product portfolio development, and development of the sales/marketing function (Mattsson, 1973). Although significant costs will be incurred in the transition to systems business, it could be argued that the costs incurred in the actual business are much more significant because of their recurring nature. The *importance of standardization* is crucial in reducing these costs. If the production of physical components and the system-specific services needed in integrating them can be at least partly standardized through the development of modularized components and standardized procedures, the cost savings are significant.

2.2.4. Buyer needs

Naturally customer segments must exist that appreciate the system seller's value proposition of lowered total costs and enhanced performance for the buyer. Thus systems customers must appreciate *maximum value, not lowest initial cost.*

2.2.5. Entry barriers

The requirements for enhanced competitiveness are not fulfilled if there are no forces that protect the seller's value proposition against imitation (Peteraf, 1993). Speed and constant innovation are such elements in many industries and particularly important to firms selling in emerging countries (such as China) in which patents and other intellectual property rights are insufficient. However, pure product innovation may be insufficient as the technology it is based on may be subject to imitation. Thus innovative business process reengineering that harnesses the more tacit resources embedded in organizations may provide important barriers to entry. Particularly the know-how required of a systems seller provides *absolute cost advantages* for the seller (Mattsson, 1973). This know-how is acquired through contact with the target customers and is difficult and slow to gather. Moreover, the know-how is interdisciplinary as knowledge of many fields is needed to link the components of the system together. The know-how advantage can be expected to last for some time because the established systems seller is constantly learning and increasing its knowledge base.

Further entry barriers relate to *economies of scale* and *switching costs*. Additional investments into market communication and production facilities make the required efficient scale of entry quite high in a market that may be of limited size (Mattsson, 1973). Switching costs also tend to be higher in systems business than in product business as systems sales involve deeper integration into the buyer's value chain. While the switching cost argument provides a convenient entry barrier, the systems seller cannot abuse the position as this will hurt its buyer relationships and effectively destroy its own sales proposition (Morgan & Hunt, 1999). Lastly, systems by their nature involve the *exploitation of unique and valuable resources* that cost based competitors generally lack thus insulating the systems seller from the competitive threat.

2.2.6. Effective communication of value

If the systems seller possesses the relevant resources and capabilities enabling it to deliver enhanced customer value with a reasonable cost structure, the next challenge is to communicate this value to the buyer. The value embedded in systems needs to be communicated in the right way to the right people. It is particularly important that the seller explicitly demonstrates where cost savings and performance gains will occur in the customer's value chain (Anderson & Narus, 1998). To do this the seller must possess a competent sales force and excellent relationships with its customers (Morgan & Hunt, 1999). Relationships are critical because the supplier is trying to change the predominant business model from buyer-centric to supplier-centric as described in Fig. 1A and B. Such a shift will impact the buyer's entire value chain and change its current modes of operating.

The task of communicating the value proposition is challenging because the value embodied in systems is often difficult to estimate as cost savings occur throughout the buyer's value chain and the system's life cycle. Due to these challenges, the systems seller must adopt a consultative sales approach that engages in *strong initial signalling to gain the top management's awareness* (Hanan, 1986). This is because the buyer's top management is in a better position to assess the seller's value proposition as it has an overall understanding of the firm's value chain. Furthermore, the systems seller needs a mandate from the buyer's top management for successful *containment of line worker opposition*. Systems selling is likely to face severe resistance from lower level functions because as a form of outsourcing it will tend to create redundancies. After systems have been established in the routines of the buyer, skilled sales representatives are needed for *maintenance of a coordinated customer interface throughout the relationship*.

2.2.7. Enhanced competitive advantage

Fig. 2 is a process model that synthesizes the literature concerning competitive advantage and systems. Systems

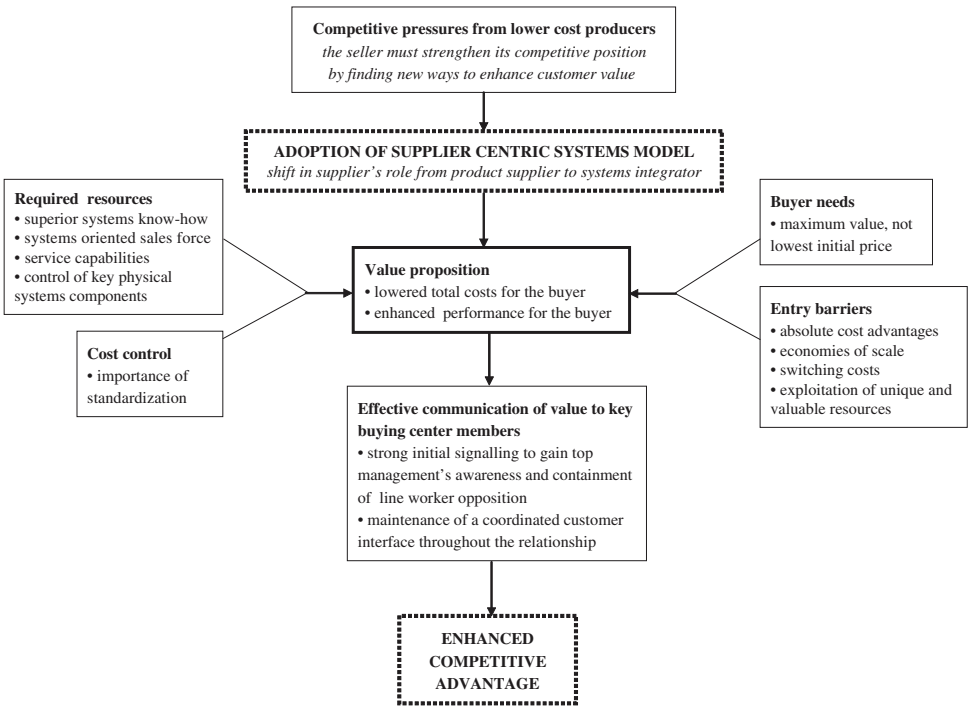

Fig. 2. Process model for enhancing competitive advantage through systems sales.

selling is a form of differentiation, so any investigation into how systems selling can enhance the seller's competitive advantage needs to explore the ways in which it can contribute to the seller's differentiation advantage through lowering the buyer's total costs or enhancing the buyer's performance. Thus the key to enhancing competitive advantage through systems sales lies in the construct "Value proposition". The arrows pointing at the value proposition construct explain how this differentiation advantage is built and sustained. The arrow pointing down from the value proposition construct explains how it is communicated. If the constructs in Fig. 2 are addressed and the process is carried out successfully, the systems seller should enjoy enhanced competitive advantage, which will be reflected in superior financial performance (Hunt & Morgan, 1996; Porter, 1991).

3. Methodology

The empirical research in this study was based on a single case study methodology (Yin, 2003). The single case study is sometimes thought to be inferior to multiple case studies, but Gummesson (2000) for example argues that the real issue in case studies is not sample size, but the quality of the researcher's access to and preunderstanding of the phenomenon being studied. Yin (2003) also argues that a single case study is justified when studying a revelatory case where the phenomenon has previously been inaccessible to researchers. Access in this case was excellent as one of the researchers had ties to the case company. This enabled the researchers to study a complex subject area in its real life context. Regular informal meetings were held with three key informants at Wärtsilä during the fall of 2003. These key informants included the Director of Sales Support, Vice President of Finance, and General Manager of Business Intelligence at Wärtsilä's Ship Power division. At these meetings it was possible to ask questions about the company, the industry in which it operates, and the development of systems in that company. These meetings were complemented by a study of documents that included company presentations, leaflets, customer publications, and some internal strategy documents. A formal interview round was also conducted with informants from Wärtsilä, three shipyards (including two Finnish shipyards and one Japanese shipyard), and an external ship design consultant. All together, including key informants, fourteen people were interviewed during 2003–2004.

The central concepts in the study were operationalized by the model presented in Fig. 2 and this model guided the collection of empirical data. Through the empirical findings it was then possible both to validate and elaborate on the model. The model in general was found to be valid, but the empirical findings raised important issues regarding its dynamism. For instance, the empirical findings emphasized that the customer type and situation affects the model. Accordingly, the importance of different elements in the value proposition depends on whether one is targeting direct or end customers. Furthermore, the customer's relative cost position and resource base affects the systems offering. These points will be addressed in the next section.

In terms of addressing the study's validity, the issue of access is again central. Remenyi, Williams, Money, & Swartz (1998) for instance argue that validity results from gaining full access to the knowledge and meanings of respondents. More rigorous tests of validity were addressed through the use of multiple sources of evidence and data triangulation—particularly in relation to subjective and controversial issues. For example issues regarding the value proposition, its applicability to different customer segments, and the sustainability of the competitive advantage were investigated from several viewpoints. It was particularly valuable to consult with the system supplier's customers and the external design consultant to triangulate these findings. The final version of the study was read by the three key informants to assure factual accuracy and relevance of interpretation.

4. Empirical findings

This section is divided into two parts. First the case company and its progression into a systems supplier is described briefly. Then some selected empirical findings will be reviewed to validate the developed model.

4.1. Description of the case company

The case company, Wärtsilä Corporation, is a global equipment, systems, and service provider for ships and power plants that is headquartered in Helsinki, Finland. In 2004 its net sales were 2478.2 million euros and it employed 12,475 persons. Wärtsilä has roughly 60 subsidiaries around the world and it is composed of three main divisions: Ship Power (29% of sales), Power Plants (29%), and Service (42%). The main focus of this study is on the Ship Power division. Historically, Wärtsilä Corporation's Ship Power division has been a supplier of marine equipment with its core product being the diesel engine.

The engine making industry for large ships is highly consolidated and dominated by two companies—Wärtsilä Corporation from Finland and MAN B&W from Germany. In 2004 Wärtsilä had a 34% global market share in medium speed engines and an 18% share in low-speed engines. This makes Wärtsilä a global leader in medium speed engines and number two in low speed engines after MAN B&W. Wärtsilä's low speed engines are manufactured by licensees in Japan, South Korea, China, Taiwan, Poland, and Croatia. The medium speed engines are at the heart of the company's competitive position and are manufactured by the company's own production facilities in Europe.

Wärtsilä made a strategic commitment to systems business in the late 1990s when it launched the Ship Power Supplier concept whereby Wärtsilä would eventually provide total power, propulsion, and service concepts. Fig. 3 describes Wärtsilä's development into a systems supplier.

Today the company's main systems portfolio includes the propulsion, ship power generation, and ship manoeuvring systems. The service concept is seen as an integral part of the ship power supplier strategy. Wärtsilä has been steadily growing its service network through acquisitions and organic growth. Today Wärtsilä has the most comprehensive service organization in the market; it is capable of handling global maintenance and operation of Wärtsilä's equipment and systems. Also, to be able to provide the know-how needed in systems, Wärtsilä has enhanced its naval architecture and maritime engineering know-how to cover tasks related to design, engineering, material procurement, construction, and commissioning of complete ship machinery systems and engine room solutions.

4.2. Model verification

The review of empirical findings will concentrate on variables identified in Fig. 2.

4.2.1. Competitive pressures from lower cost producers

Both push and pull factors have caused Wärtsilä to enlarge its scope of supply and to promote larger scale systems deliveries. Wärtsilä must seek new ways to add more customer value because it is not positioned as a cost leader. The engine licensees in Asia are gradually developing their skills and their lower cost base will make them formidable competitors. There are many ways to further pursue differentiation. Wärtsilä has traditionally based its competitive advantage on superior product innovation and identifies leadership in product technologies and worldwide service offerings as its core competencies. This continued excellence in product technologies and global service capabilities has been further leveraged through the introduction of systems as it is a more complex strategy to imitate than pure products. In addition to the company possessing the required resources, the consistent trend towards greater outsourcing at shipyards is seen as a potential trigger for the greater use of systems in this industry and acts as a pull force. This trend is especially evident in Europe, where shipyards are becoming assembly yards.

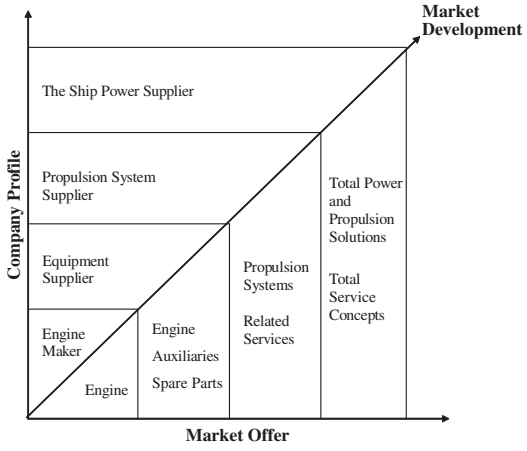

Fig. 3. The Ship Power Supplier. Source: Wärtsilä.

4.2.2. Value proposition

The construct "Value proposition" was identified as the central component in the model. We argued that systems can lower total costs for the buyer and enhance its performance. Customers in this industry comprise of both shipyards and ship owners. Shipyards are the direct buyers. Ship owners are the indirect buyers and eventual users of the system. The value proposition needs to address both parties.

Respondents from Wärtsilä, shipyards, and the ship design consultancy saw that a transition to systems clearly adds value to Wärtsilä's customers as exemplified by the following quote: "I see the utility in moving to these systems. The system can be manufactured more efficiently and the resulting system itself will be better (shipyard interviewee)". Thus not only does the supplier-centric model lower total costs for the buyer, but it also results in better systems. Costs will be lower because Wärtsilä "manufactures much bigger volumes than a particular shipyard (Wärtsilä interviewee)" that enables it to benefit from scale economies and learning effects. Costs can also be lowered because of enhanced prospects for system optimization: "If we developed the engine and the gearbox together we could reduce the price of the engine by 5% by making it faster. This would cause a 5% increase in the price of the gearbox. However, the gearbox is only 1/10 of the price of the engine, so you can gain a lot of money by having a faster engine and a more expensive gearbox (Wärtsilä interviewee)".

Moreover, the resulting system will be better because the systems supplier, with its extensive know-how and experience, has invested considerable time and effort in developing its system modules, which already have a proven track record: "If you can show a customer that this has been built before and it has worked well, the customer will take it. . .a particular solution has been chosen after careful consideration. For this kind of a standardized solution you can expect the least amount of problems (shipyard interviewee)".

The benefits associated with system specific-services, both for the seller and the buyer, cannot be underestimated as pointed out by a shipyard representative: "an important point is that the shipyard's part in the life cycle of the ship is

very short. We build the ship in eighteen months, but the ship may be in operation for thirty years. Thus the real customer is the owner, which brings in the product life cycle concept... Owners are currently considering these maintenance and operation agreements and many don't want to handle them by themselves (shipyard interviewee)". Thus the service dimension is crucial in systems business. The customer who will be using the system in question will benefit from a global service network capable of servicing and maybe even operating the system.

4.2.3. Required resources

As for the required resources, it is clear that the systems supplier must possess superior know-how. However, system customers also noted that the entity that has product ownership over key physical components making up the system is best positioned as a systems integrator: "the core supplier coordinates product development...if there are ownership linkages between the suppliers this becomes much easier...it is very difficult for the shipyard to place itself in this role (shipyard interviewee)". Furthermore, the sales force is in a crucial role. The company needs to develop a group of people who are skilled in systems sales. Actually, as identified by the case company, this can be a substantial challenge in a company where the existing sales force is product oriented and internal resistance is common: "When we moved to this Ship Power supplier concept, the initial reaction was that if I'm an engine salesman and can't sell a system then I'll get fired (Wärtsilä)". Thus careful attention needs to be paid to the transition phase to reduce internal opposition and to build the required capabilities. Lastly, possession of a global service network is crucial. The fastest growing unit within the case company is its service division that is equipped to install and service Wärtsilä's systems and equipment anywhere around the world. Furthermore, it is wise to invest in services as a critical resource and to utilize it to the fullest possible extent as service business typically has higher margins and is less susceptible to cost-based competition (Drewry Shipping Consultants, 2002).

4.2.4. Cost control

In the context of systems, standardization is a particularly important factor. If a new system is designed with each new order then there will be very little cumulative cost savings or performance gains from the process compared with the shipyard doing it by themselves unless the shipyard is too small or incapable to have the resources itself.

4.2.5. Buyer needs

As mentioned in the methodological section, the empirical findings pointed heavily to the dynamism of the model depending on customer typology. Overall, it can be said that the shipyard, or the direct buyer, is more concerned with the cost aspect of the offering. It receives a bulk payment for the ship and is interested in building a vessel that meets the owner's requirement at the lowest possible cost. Thus Wärtsilä needs to emphasize the potential for lowered total costs that occur in the construction and warranty phase of the ship. The ship owner, on the other hand, is interested in total life cycle costs and performance; here the systems argument is very competitive as downtime is minimized and performance optimized through proven concepts and a global service network.

Furthermore, the situation of Wärtsilä's customers regarding their resource and cost base is relevant. Western shipyards have an excellent resource base and are able to integrate systems, but an unfavourable cost position forces them to outsource functions. Japanese shipyards are also approaching this stage as labor costs in Japan are high. Thus lowered total costs are crucial for western shipyards and also increasingly so for Japanese shipyards. Developing shipyards in China are not facing cost pressures, but lack an established resource base. Thus when Wärtsilä is selling to the Chinese shipyards it mainly emphasizes enhanced performance. Shipyards in South Korea are in a rather good competitive situation as they have a reasonably good resource base to integrate systems and are not yet facing significant cost pressures. Furthermore, the South Korean shipyards tend to manufacture long ship series where the yards themselves can benefit from scale economies in systems integration. Thus Wärtsilä, given their cost structure, must try to sell highly complex and customized solutions to South Korean customers.

4.2.6. Entry barriers

The systems strategy would be more difficult for Asian producers simply because they are still in the process of absorbing product technologies. Most Asian engine producers today manufacture under licenses and thus must first learn to perfect their product technologies. Wärtsilä, on the other hand, has a wide product portfolio range that includes the most important system components. Furthermore, it has the most extensive service network that guarantees the service and maintenance of its equipment and systems anywhere around the world. The Asian manufacturers lack such a network almost completely. This is a significant sales argument to the end customer and supports the choice of Wärtsilä's systems. Wärtsilä is also in a better position to develop systems know-how than many of its Asian competitors because it has more experience in the marine equipment market. It can afford to invest more time in the development of this system component because it already enjoys superior resources and capabilities in the physical goods and system-specific services categories. Thus by shifting the market from products to systems, Wärtsilä can heighten barriers to entry and further utilize its already existing unique and valuable resources.

4.2.7. Effective communication of value

In terms of communicating the value proposition, a new sales approach is needed in systems. Top management from

both the seller's side and the buyer's side must be involved to reflect the strategic implications of the shifting business model. The buyer's top management is also needed to circumvent problems associated with the buyer-centric systems model. In the buyer-centric model, the buyer buys components from the open market and then integrates these components. As the design department at shipyards takes care of systems integration, it specifies the component requirements. The purchasing department then negotiates the contract. If the seller faces the same buying center in systems business, it will not be able to sell anything. The design department does not want to hear about systems because "If the same functions are performed in two places, people will hold onto their jobs…. This has nothing to do with business. It is part of human nature (shipyard interviewee)". Moreover, it is the purchasing department's task to "push down the prices and they do not accept a total quotation for a system (Wärtsilä interviewee)".

Furthermore, the successful communication of Wärtsilä's value proposition requires close customer relationships and open dialogue: "the concept of systems requires deep dialogue between the shipyard and Wärtsilä…. We need to understand how the profitability of both parties can be enhanced through systems…. This requires mutual trust and openness and a discussion about what the shipyard's and system supplier's roles are (shipyard interviewee)". Thus the seller and the buyer need to engage in a mutual dialogue to discover the sources of value in systems selling. This can best be achieved with customers whom the seller knows well as significant openness is required to study the effects of systems sales on the value chains of customers.

Lastly, the seller also needs a very competent grass roots level sales organization to maintain a coordinated interface throughout the relationship that is able to address every aspect of the customer's systems needs. This can sometimes be extremely challenging because systems can be complex entities utilizing different technologies. No single person is likely to have the needed expertise. Thus it can be a major challenge to organize the customer interface and one that quite likely requires a team-based approach.

4.2.8. Enhanced competitive advantage

The concept of systems is well established in shipbuilding. Particularly in Europe significant portions of the ship's interior machinery and fittings are supplied as systems. The crucial question is whether or not the shipyard sees a particular system as belonging to its area of core competence. The engine room, where systems supplied by the case company are located, is a high value added portion of the ship and has traditionally belonged to the shipyard's area of core competence. Thus, to successfully break into the market, Wärtsilä has had to prove to the shipyard that it possesses a comparative advantage in systems integration—this means lowered total costs and better systems. Wärtsilä has been able to rely on its sound reputation and good relationships with both shipyards and ship owners to extend its offering into power systems thus enhancing its position of competitive advantage.

5. Discussion and conclusions

This study has explored how systems may enhance a company's differentiation advantage against cost-based competition. Past research (e.g. Mattsson, 1973) and empirical findings from this study suggest that systems is a value-enhancing strategy whereby the seller integrates into the buyer's value chain and takes over the buyer's value activities related to systems integration. We call this a shift from the buyer-centric to the supplier-centric systems model (refer to Fig. 1A and B).

A process model (Fig. 2) was proposed that explains how systems selling can enhance a company's competitive advantage and fills a gap in our conceptual understanding of systems (Ahmed, 1993). Systems have been explored as a product strategy of an international company (e.g. Mattsson, 1973; Page & Siemplenski, 1983), but few explicit attempts have been made to analyze the impact of systems on the seller's competitive position. The model was tested against an empirical study of a case company operating in the global shipbuilding industry. The empirical findings from the case company supported the model. We argue that the supplier-centric systems model has the potential to lower total costs for the buyer and to result in enhanced customer performance (Kosonen, 1991; Page & Siemplenski, 1983). The potential to lower costs depends on the supplier's ability to standardize the system components and the processes to produce them (Gabrielsson & Gabrielsson, 2003).

Systems business is particularly appealing because of its ability to mount a strategic response in mature industries. Systems business enables the seller to capitalize on its accumulated stock of industry and product experience through the application of know-how and services required to develop and produce systems. If a move into systems business enables the seller to further exploit its unique and valuable resource, the systems seller can enjoy considerable barriers to entry resulting in a sustainable competitive advantage.

Although this study has concentrated on the shipbuilding industry, the findings should also apply to many other industries struggling with the Asian challenge. These firms have two basic avenues: to become cost leaders or to differentiate (see Porter, 1985). Firms have attempted to enhance their cost position by relocating production to Asia. However, this is hardly a sustainable strategy for western economies. Instead, efforts need to be made to enhance differentiation—particularly through emphasis on service and know-how intensive product strategies.

6. Managerial implications

In addition to contributing to the scarce research base on systems, this study has clear implications for managerial

decision-making. Companies facing cost-based competition could use the results of this study to help them assess whether systems could be an appropriate strategic response. The first requirement is that the company's products eventually become part of a functional system. If this is the case there are two alternative business models. One approach is that the buyer buys the components separately and integrates them by itself. In the other model, the components are already integrated by the seller and are sold as a single package. Naturally, if systems are already a prevailing market practice, then systems will not provide a basis for enhanced competitive advantage. The best opportunities exist in a situation where most of the market is product-based and the buyer is used to integrating systems by itself. In this kind of a situation it is possible for a seller to reconfigure the value system through the introduction of systems. Since systems business is based on more extensive technical and market know-how, it should be more difficult for lower cost producers to imitate systems than pure products.

Despite the benefits outlined in this article we do not suggest that systems selling is without its problems. A transition to systems selling is a complicated process both for the seller and the buyer. Furthermore, customers, particularly in cost sensitive industries, can be difficult to convert to value based arguments. The firm's top management has a crucial role in overcoming these challenges. It needs to be committed to a clear vision that is communicated to functional levels and supported by internally consistent goals and functional policies.

7. Suggestions for further research

The findings in this study serve as a basis for further investigations into systems as a response strategy to the threat posed by cost-based competition that is increasingly coming from East Asia. We suggest that the study be further tested and extended to include more industries and firms originating from other countries. Furthermore, the research raised important issues regarding the dynamism of Fig. 2 in terms of the customer type and situation. The systems seller often faces multiple layers of customers (direct vs. indirect) and its customers can differ significantly in terms of their relative cost position and resource base. More research is needed to verify the implications of these differences to the system seller's performance. Furthermore, as systems selling involves much deeper cooperation between the seller and the buyer than traditional product-based business, more research is needed on the required changes in customer relationship management during the transition to systems sales. It would also be important to study companies that have pursued a systems selling strategy and have either failed in it or chosen to change strategy. This would make it possible to better understand the conditions under which systems selling is not a desirable strategy.

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This study details the paths taken by some of Finland's best known multinational enterprises in their quest to build and sustain competitiveness in an increasingly globalized competitive environment. The firms studied have built positions in international markets through reliance on product leadership strategies. As competitive pressures have escalated, attention has shifted to cost efficiency of operations. However, for most Finnish multinationals, competing through cost leadership is untenable, while increased industry maturity and the rapid diffusion of technologies have made it difficult to rely on pure product leadership strategies. Thus, many have turned to adding value beyond products in the form of services and customer-specific solutions. This transformation process and the related organizational challenges are examined from different angles.

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