

Capability Development within the Multinational Corporation

Paula Kilpinen

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Publisher School of Business**Unit** Department of Management and International Business**Series** Aalto University publication series DOCTORAL DISSERTATIONS 13/2013**Field of research** International Business**Abstract**

The operating environment is being shaped by globalization forces, rapid technological change and intensified competition, which call for strategic changes and new capabilities from multinational corporations. Even though the capability-based determinants to firm survival and growth have been recognized, research on capability development has been limited. This study investigates capability dynamics within MNCs and the interactions between strategy and the environments internal and external to the firm. It puts forward longitudinal case studies of three Finnish multinational firms, Nokia, Kone and Iittala, as they were undergoing strategic changes, in order to explain how capabilities are developed within MNCs and how the MNC context, including globalization, has an impact on capability development.

The findings explain how MNC strategies and activities trigger various mechanisms and generate complex outcome patterns in capabilities. The findings indicate that the various patterns or 'logics' by which the MNCs build capabilities can be regrouped into four main logics: variation-based, (internal) selection-based, retention-based and access-based logics, which represent patterned links between intra-firm evolutionary processes, dynamic capabilities and capability development. This study demonstrates how the case firms employed different capability logics at different periods of time in order to adapt to external changes, but also to shape the external environment.

The findings also elucidate the 'liability of complexity' that the multinational corporations encounter, as they possess complex internal and external selection environments and need to respond to divergent external and internal pressures. This may create various forms of inertia or counteracting mechanisms to capability development and may result in 'indirect selection' of certain capabilities with significant implications on firm performance. The study also demonstrates how the advantages of the multinational firm increasingly relate to and are augmented by its capacity to use not only the subsidiary network but also its global network of partner firms, 'enterprise ecologies', to complement its internal capability base with co-specialized assets.

This study extends current research by explicitly integrating the dynamic capabilities view (DCV) and the evolutionary perspectives for a more holistic picture on capability development within the MNC context. It also provides empirical evidence of the dynamic process of capability development when subject to a global business environment of uncertainty and complexity. The managerial implications of the study involve the capability logics that managers may employ to cope with and to influence the external environment. They also relate to identifying the various complexities within the MNC context and promote aligning the internal selection criteria with strategy.

Keywords capability development, multinational corporations, dynamic capabilities, evolutionary perspective, case studies

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Tekijä

Paula Kilpinen

Väitöskirjan nimi

Kyvykkyysien kehittäminen monikansallisissa yrityksissä

Julkaisija Kauppakorkeakoulu**Yksikkö** Johtamisen ja kansainvälisen liiketoiminnan laitos**Sarja** Aalto University publication series DOCTORAL DISSERTATIONS 13/2013**Tutkimusala** Kansainvälinen liiketoiminta**Tiivistelmä**

Globalisaatio, nopea teknologinen kehitys ja intensiivinen kilpailu ovat muokanneet monikansallisten yritysten toimintaympäristöä, ja edellyttäneet niiltä strategiamuutoksia ja uusia kyvykkyyskäsitteitä. Vaikka kyvykkyysien vaikutus yritysten selviytymiseen ja kasvuun on tunnistettu, niiden kehittymistä on tutkittu vain vähän. Tämä tutkimus selvittää kyvykkyysien kehittymistä monikansallisissa yrityksissä, tarkastelemalla strategian ja sekä sisäisen että ulkoisen toimintaympäristön välistä vuorovaikutusta. Se esittelee pitkäaikaisaineistoon perustuvat tapaus tutkimukset Nokialta, Koneelta ja Iittalalta niiden toteuttaessa strategista muutosta. Tapaus yritysten kautta selvitetään miten kyvykkyyskäsitteitä kehitetään monikansallisissa yrityksissä, ja miten niiden konteksti, mm. globalisaatio, vaikuttaa kyvykkyysien kehittymiseen.

Tutkimustulokset selittävät miten monikansallisten yritysten strategia ja toiminta laukaisevat eri mekanismeja ja synnyttävät monitahoisia kyvykkyysmalleja globaalissa toimintaympäristössä. Tulokset osoittavat, että nämä erilaiset mallit voidaan ryhmittää neljään pääloogiikkaan, jotka sisältävät erilaisia kytköksiä yrityksen sisäisten kehitysprosessien, dynaamisten kyvykkyysien ja kyvykkyysien kehittymisen välillä. Tutkimus osoittaa miten tapaus yritykset ovat käyttäneet eri kyvykkyysmalleja eri aikakausina sopeutuakseen ulkoisiin muutoksiin, mutta myös muokataakseen ulkoista toimintaympäristöä.

Tutkimustulokset havainnollistavat myös sitä monimutkaisuuden rasitetta, joka seuraa monikansallisten yritysten kompleksisesta toimintaympäristöstä sekä tarpeesta vastata erilaisiin ulkoisiin ja sisäisiin paineisiin. Tämä aiheuttaa kyvykkyysien kehittymistä hidastavia tai sitä ehkäiseviä mekanismeja, sekä johtaa tiettyjen kyvykkyysien epäsuoraan valintaan, millä voi olla merkittävä vaikutus yrityksen tulokseen. Tämä tutkimus osoittaa myös miten monikansallisten yritysten etulyöntiasema liittyy yhä enenevässä määrin niiden kykyyn hyödyntää tytäryhtiöverkoston lisäksi yhteistyökumppaneiden verkostoaan, 'ekosysteemejä', täydentääkseen omaa kyvykkyyspohjaansa.

Tämä tutkimus laajentaa nykytutkimusta yhdistämällä dynaamisten kyvykkyysien tutkimuksen (DCV) ja kehitysopillisen perspektiivin, ja antaa siten kokonaisvaltaisemman kuvan kyvykkyysien kehittämisestä monikansallisten yritysten kontekstissa. Lisäksi se tarjoaa empiiristä aineistoa kyvykkyysprosesseista yritysten toimiessa epävarmassa ja kompleksisessa globaalissa ympäristössä. Tutkimus tarjoaa johtajille erilaisia kyvykkyysmalleja, joita he voivat käyttää sopeutuakseen tai vaikuttaakseen ulkoiseen toimintaympäristöön. Se myös auttaa identifioimaan monikansallisten yritysten kontekstiin liittyviä kompleksisuuksia ja edesauttaa sisäisten valintakriteereiden linjaamista strategiaan.

Avainsanat kyvykkyysien kehittäminen, monikansalliset yritykset, dynaamiset kyvykkydet, kehitysopillinen perspektiivi, tapaus tutkimukset

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Espoo, December 2012

Paula Kilpinen

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1. Introduction

1.1 Background

Globalization forces, along with rapid technological change, deregulation and intensified competition are shaping the operating environment, and redefining the conditions of survival and growth for many firms. Because of the changing global landscape, multinational firms (MNCs) are forced to operate in a setting that is characterized by both uncertainty about the institutional-, technological-, or market environment of the firm, and complexity that results from the interdependencies between markets and actors. Within this type of environment the firm's growth and even survival have come to depend on its capacity to develop new products and methods of organization (Kogut and Zander, 1992; 1993), create new institutions or organizational forms (Dunning and Lundan, 2010), and to orchestrate and combine co-specialized assets on a global scale both within and across organizational boundaries, and to shape business ecosystems (Teece, 2007; 2009). It has been argued that it is precisely the unstable market conditions with intensified and diversified competition that have prompted "organizational capabilities rather than served markets becoming the primary basis upon which firms establish their long-term strategies" (Grant, 1996a: 375) and resulted in resources and organizational capabilities becoming the main source of sustainable competitive advantage. Moreover, as change has become endemic to the way many organizations compete and critical to survival in many industries (Brown and Eisenhardt, 1997), a capacity of an organization to change its resource and capability base (Helfat, Finkelstein, Mitchell, Peteraf, Singh, Teece and Winter, 2007) has become paramount.

The introduction of routines, resources and capabilities at the center of the theory of the firm (Penrose, 1959; Nelson and Winter, 1982) has not only informed competitive advantage or superior enterprise performance (e.g. Barney, 1991; Teece, Pisano and Shuen, 1997; Teece, 2009), but has

also provided a deeper understanding of firm-level development and change, as well as of the more macro-level and contemporary phenomena, such as social change and industry evolution (Aldrich, 1979; Aldrich and Ruef, 2006). Resources, organizational capabilities, and routines have been claimed to be key concepts to understanding the impact of external and internal change on organizations (Nelson and Winter, 1982; Becker, Lazarcic, Nelson and Winter, 2005; Feldman, 2004; 2000). In addition to views emphasizing adaptation to the external environment, the dynamic capabilities view has come to underline the ability of firms not only to respond to changes in the environment but also to influence their environment and prevalent external selection criteria, for example by creating market change (Eisenhardt and Martin, 2000) or by shaping business eco-systems (Teece, 2007; 2009).

Similarly, within international business and MNC research, ever since the seminal work of Hymer (1976), firm-specific advantages (FSA) have received keen scholarly interest among international business researchers. The firm-specific advantages have been argued to provide the primary motivation for firms to expand internationally and therefore to explain the existence and behavior of multinational firms. Because the replication and transfer of knowledge and capabilities, as well as the creation of new capabilities, are fundamental to growth in international markets, MNCs play a major role in the generation and diffusion of capabilities globally (Dunning and Lundan, 2010). The ability of the MNC to transfer non-codified and complex knowledge across borders (Kogut and Zander, 1993) and to make the locally embedded knowledge and capabilities that reside within subsidiaries available to the rest of the multinational through integration and transfer (Dunning, 1988; Madhok and Liu, 2006), have been argued to constitute the main advantages of the MNC. More recently, the dynamic capabilities view has been integrated with the international business literature emphasizing changing capability dynamics during the processes of firm internationalization and globalization (Tallman and Fladmoe-Lindquist, 2002; Luo, 2000; 2002) and arguing that the ability of multinational firms to engage in cross-border transfer of capabilities and to create institutional innovation to encounter uncertainty underlie the dynamic capabilities of the MNC (Dunning and Lundan, 2010). The current perspectives have also come to underline the MNCs' ability to transform the environment by shaping the external selection criteria (Dunning and Lundan, 2010; Teece, 2009), suggesting that in the context of complex external change, the strategic focus of MNCs is increasingly shifting to the processes by which they can respond to and influence changes in the environment (Cantwell *et al.*, 2010).

The objective of this thesis is to shed further light on capability development within MNCs. The MNC provides a specific type of context with a complex and heterogeneous external and internal environment (see e.g. Roth and Kostova, 2003; Kostova, Roth and Dacin, 2008; Ghoshal and Westney, 1993). It seems that the MNC context has important implications on the theory on capability development, and that the complexity and heterogeneity of the MNC context, on the one hand, and the power of these firms on the other, pose fundamental challenges for some of the assumptions underlying the current perspectives. Research on MNCs, therefore, seems to provide an opportunity for further theory building on capability development.

1.2 Research Objective and Context

Against the background depicted above, my objective with this monograph-based dissertation is to investigate capability development within MNCs and the interactions between strategy and the internal and external selection environments within the MNC context over time (see Figure 1). I do so by taking capabilities as the main units of analysis and drawing on organizational capabilities-, evolutionary-, and MNC literatures, and by means of a multiple, longitudinal case study and process research. I seek to understand both the internal managerial and organizational factors underlying capability development, as well as the impact of the external factors on capability development, and the co-evolution between firm action and the globalizing external environment. By approaching capability development as an outcome of a co-evolutionary process supported by a comparative case study, I hope to provide both theoretical and empirical insights into capability development within the MNC context.

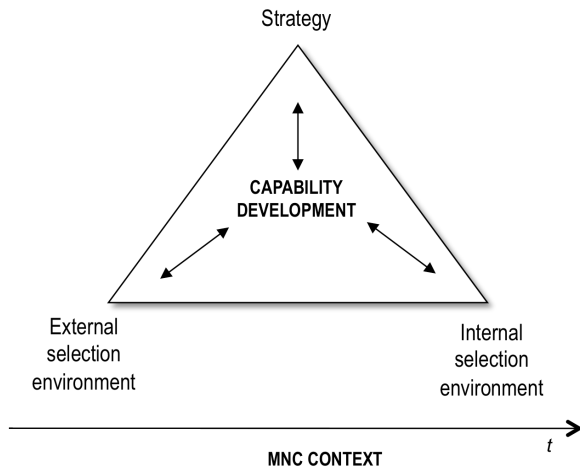


Figure 1. The Research Problem

The MNC provides an interesting context to study capability development, as it presents a rich setting of both internal and external forces originating from multiple environments. Subsequently, the MNCs are confronted with a variety of external and internal stimuli as they operate a network of subsidiaries within a number of different contexts, leading to ample variation and frequent internal and external selection events. Moreover, within the MNC environment the temporal and spatial interrelatedness between multiple contexts come into play. Conceptualizing the multinational firm in terms of an “evolutionary system and subsystems that co-evolve in interaction with each other, as well as with their differentiated environments” (Westney, 2009:133) therefore provides an ideal arena to study capability development.

The globalizing business environment itself also warrants further research. Many researchers seem to agree that many global industries today can be characterized as highly competitive, where technological change is rapid and innovation plays a key role, and where the nature of future markets and competition is difficult to determine (Teece *et al.*, 1997; Zander and Kogut, 1995; D’Aveni, 1994). As an outcome, in many industries there has been a shift from moderately dynamic environments with relatively stable industry structures and clear market boundaries, to fast-paced and highly volatile settings characterized by unstable industry structures, blurred market boundaries and non-linear, unpredictable changes (Eisenhardt and Martin, 2000). Bettis and Hitt (1995) argue that within many industries the concept of ‘industry’ has become ambiguous along with the rapid technological change that has made industry boundaries fuzzy, and with substitute products, technological mergers and strategic alliances

that have modified traditional industry boundaries and dynamics. They also suggest that as firms have moved into global markets, the identification of current and future competitors along with their resources and strategies has become more difficult. As an outcome, they argue, industry dynamics have become increasingly non-linear with unclear and unstable relationships, with cause and effect difficult to identify and replicate, and thereby making organizational learning more difficult. Therefore, globalization seems to not only have caused more changes in the external environment but has also affected interdependencies between events and processes representing a progress from a lower, simple state to a higher, more complex one (Levinthal, 2002). Moreover, globalization has been associated with the increasing amount of uncertainty in the environment (Cantwell *et al.*, 2010; Jalonon, 2012).

In line with Tallman (1991) in his suggestion that international studies may have important value to refining strategy theories, I argue that an international business approach that puts emphasis on context has the potential to enrich organizational capabilities research¹. Similarly, Björkman, Barner-Rasmussen and Vaara (2010) maintain that MNCs as research objects can contribute to research more widely as they point to the complexities and challenges that relate to operating large organizations (in line with Roth and Kostova, 2003; and Zander, Zander, Gaffney and Olsson, 2010). I also agree with Teece in his argument that the “capabilities approach provides a significant augmentation to our understanding of the MNE” (2009:175) and at the same time, the claim that in the presence of globalization forces and incomplete cross-border integration “the study of international business and multinational enterprise remains an important scholarly activity” (Augier and Teece, 2007:182) that requires a theoretical distinction to complement mainstream strategy and management research.

¹ Moreover, Nordic international business research seems to be well positioned to study capabilities, as well as the strategy and management of international firms (Björkman and Forsgren, 2000). These authors claim that because of the openness of the economy in the Nordic countries, international firms have received special interest in business research and in general, Nordic researchers have proved to have a better access to managers and organizational processes than many of their colleagues in other economies. Moreover, and partly because of this, there has been an inclination towards the behavioral perspective in studying the international firm, and a special interest in the knowledge and capabilities of the firm.

1.3 Research Questions

In line with the research objective described above, I will address the following main research question:

How are capabilities developed within MNCs?

I address this main research question through the following sub questions:

1. What are the processes and mechanisms underlying capability development within MNCs?
2. How does the MNC context, including globalization, impact capability dynamics?

The first sub question seeks to identify the processes and mechanisms underlying capability development, while the second sub question investigates the impact of the context, in this case the MNC environment and globalization, on capability dynamics.

My objective is to gain access to various patterns and processes in capability development, as well as to unravel the underlying mechanisms. Towards this end, I will put forward in-depth case studies of three Finnish multinational firms as they were undergoing strategic changes. I will provide a detailed analysis of the process of capability development in these firms, as well as a temporal analysis of key events or sequences of individual and collective events, actions and activities that relate to capability development both at industry and firm level. Moreover, by building on insights gained from privileged access to the case firms' managers and data, I seek to construct a rich and holistic account of both the internal and external environments of the firm as they influence capability development, including their co-evolution. In doing so, I seek to understand the mechanisms that underlie capability development within the MNC context. At the same time, I also take into consideration the mechanisms that condition, and may either promote or counter the MNC's efforts to change its resource and capability base.

My aim with this explanatory study is to put forward an integrated approach on capability dynamics within MNCs, and at the same time focus on what I consider to be the missing pieces in getting the whole picture, namely understanding the interactions between the environments internal and external to the firm, and the impact of the globalizing business context. I expect to challenge existing conceptualizations and theory by providing alternative explanations that integrate the MNC context into the analysis.

By doing so, this approach will hopefully enrich research on capability development and provide an avenue for further theory development. Moreover, capitalizing on extensive empirical and interview data, this thesis hopes to work towards enhanced convergence of academic and practitioner views, and to generate theory and insights that are relevant to both academics and practitioners alike (Corley and Gioia, 2011).

This study is founded on critical realist paradigmatic assumptions. The motivation for me to adopt this paradigm is that a critical realist approach, by focusing on combinations of entities with causal powers and contextual factors that may activate these powers, enables access to processes and mechanisms underlying the researched phenomenon (capability development), as well as integration of the impact of the context (globalization and the MNC environment). In line with Piekari and Welch (2011) I consider that the ontological and epistemological assumptions that are implicit in current theories have accounted for the current conceptualizations within the field. Agreeing with them, I trust that the emerging paradigmatic assumptions, such as those presented by critical realism, and methodological pluralism will, in part, contribute to overcoming current limitations. The ontological and epistemological assumptions will be further elaborated on in the methodology section.

1.4 Key Constructs

In this study I follow Helfat and Peteraf's definition of organizational capabilities as the "ability of an organization to perform a coordinated task, utilizing organizational resources for the purpose of achieving a particular end result" (Helfat and Peteraf, 2003: 999). To be defined as an organizational capability, Nelson and Winter (1982) and Levinthal (2002) have argued that any capacity must involve collective action to generate an outcome that the actors are not capable of generating individually. These organizational capabilities include both operational and dynamic capabilities of the firm (Helfat and Winter, 2011), and may consist of both routine-based (Nelson and Winter, 1982) and knowledge-based capabilities (Grant, 1996a; 1996b; Kogut and Zander, 1993).

Agreeing with Helfat and Peteraf (2003), I consider that all organizational capabilities are capable of accommodating change when influenced by factors internal and external to the organization, while dynamic capabilities are a specific type of capabilities that enable change and modify other resources and capabilities within the firm's capability base (Helfat *et al.*, 2007; Teece *et al.*, 1997). Moreover, in contrast to the resource-based view that takes into consideration those firm assets, organizational processes and

capabilities that are controlled by a firm (Barney, 1991; Dierickx and Cool, 1989), this study integrates all those capabilities that the firm has access to on a preferential, or semi-permanent basis, in line with Helfat and Peteraf (2003) and Helfat *et al.* (2007). With an objective to explain development and change, I do not limit my investigation only to those resources and capabilities that contribute to the competitive advantage of the firm, but take into consideration all those capabilities that contribute to the firm's ability to maintain or create evolutionary fitness (Helfat *et al.*, 2007).

Following Siggelkow's (2002) definition on organizational configurations, I define capability as core if it interacts with many other current or future organizational capabilities, i.e., the value of other organizational capabilities is dependent on its presence and vice versa. This is consistent with Leonard-Barton's (1992) view of core capability as an interrelated and tightly coupled system. Likewise, following Siggelkow's (2002) notion on organizational elements, I consider organizations to consist of interconnected capabilities (e.g. core capabilities, elaborating capabilities, independent capabilities and inconsistent capabilities) that reinforce each other.

I define development as a change process, as opposed to an outcome. Process has been defined in different ways in prior research (Van de Ven, 1992), namely as 1) a logic in explaining causal relationship in variance theories; 2) a category of concepts referring to activities of either individuals or organizations; and 3) a sequence of events describing change over time. Van de Ven and Poole (2005) also point to the epistemological and ontological differences in organization and management research determining whether organizations are perceived to consist of 'things' or 'processes'. The perspective viewing organizations as 'things', such as social entities or structures, presumes the identity of the organization to persist even when changing from one state to another, whereas the latter perspective regards that it is the processes that preserve the organization by continuously restructuring it and maintaining its boundaries despite external processes that break the organization and its boundaries apart. Similarly, these authors suggest that change can be conceptualized either as an observed difference over time in an organization or some of its dimensions, or as a sequence of events that unfold over time. The approach I adopt in this study is that development is a change process, with "progression of change events that unfold during the duration of an entity's existence" (Van de Ven and Poole, 1995: 512). Within the present study, the focus is on change as patterns of organizational activities that together produce capabilities as outcomes.

Central to this study is the concept of equifinality, assuming that there are multiple causal paths to the same outcome. Following Gresov and Drazin (1997), equifinality is viewed as a property of open systems, assuming that a particular outcome or state can be achieved “from different initial conditions and in different ways” (Bertalanffy, 1968, in Gresov and Drazin, 1997: 403). Within organization studies, the concept of equifinality has been applied to studying various strategy or structure configurations, or organizational designs (e.g. Gresov and Drazin, 1997; Gresov, 1989; Payne, 2006; Siggelkow and Rivkin, 2005). Within the present study the concept of equifinality is applied to studying various alternative capability development paths by looking at different context-mechanisms-outcome (CMO)-configurations.

With regards to the MNC² I adopt the following perspectives. First, I take an organizational capabilities perspective of the MNC, following such works as Kogut and Zander (1993), Zander and Kogut (1995), Cantwell (1989) and Cantwell and Piscitello (2000). At the same time I recognize the evolved character of the multinational firms to a more networked structure or that of a ‘coordinated system of cross-border value-creating activities’ (Dunning and Lundan, 2008; Cantwell *et al.*, 2010) that is part of a larger evolutionary system or set of evolutionary systems (Westney, 2009). Secondly, and contrary to some of the aforementioned studies within MNC research that have depicted capability development mainly as an intra-firm phenomenon (see Forsgren, 2008, for a review), I do regard the external environment as pivotal when seeking to explain capability dynamics within the MNC. However, instead of adopting the contingency theory perspective that emphasizes adaptation to the external environment to achieve a strategic fit, I seek to understand the behavior of the MNC not only in adapting to the external environment but also its role in shaping the external environment.

Finally, this study follows Tallman and Fladmoe-Lindquist’s definitions in that firm internationalization refers to a process of international expansion with a “strategy of greater presence in international locations” (2002: 123), and firm globalization to a process of global integration, and a “strategy of consolidating international markets and operations into a single worldwide strategic entity” (2002: 123). The global stage, alternatively, refers to a stage where the emphasis of the MNC is to dynamically operate and manage an established “network of differentiated but integrated subsidiaries, affiliates, alliances and associations” (2002: 124). As opposed to firm globalization, I consider globalization as a macro-level phenomenon to act as an external

² This part has largely benefited from the review put forward by Forsgren (2008) on the competing MNC theories, which is gratefully acknowledged

evolutionary (and co-evolutionary) force but also to affect the interdependencies between events and processes, and represent a progress from a lower, simple state to a higher, more complex one (Levinthal, 2002). Following Simon (1969), Levinthal (2002) has defined complexity as a function of the degree of interrelationships among parts of a system that may take the form of either spatial or temporal interrelatedness, and a complex business environment as one that is tightly coupled and where activities in one market influence those in another. Globalization has also been associated with an increasing amount of uncertainty. Following Knight (1921) and Galbraith (1977), Jalonen (2012) has related uncertainty to the fact that “events in the future do not follow the course of the past events” (2012: 1) as well as to the fact that “knowledge of the future is always incomplete” (2012:1). This is in line with Cantwell *et al.* (2010) who have associated globalization with the increasing amount of non-ergodic type of uncertainty in the environment, referring to the type of uncertainty where prediction relying on extrapolation from past events or prior behavior becomes infeasible.

1.5 Limitations of the Study

This study is subject to the following limitations. First, a capabilities approach has been applied to welfare economics and includes many notable works, such as those by Amartya Sen (e.g. 1989, 1993) and Martha Nussbaum (e.g. 1993, 2000). The focus of my study is on the organization and management of multinational firms and therefore this stream of literature is excluded from the study.

Second, the objective of this study is to explain development and change and consequently, another limitation is that the study does not assess how differences in capability development and management affect the firm's economic and competitive performance³. Although firm performance has been said to provide a focal point for the investigation to enable the examination of variations in context or process as they lead to differences in performance outcomes (e.g. growth or survival) across firms (Pettigrew, Woodman and Cameron, 2001), performance implications are outside the focus of this study.

Third, I have conducted the study mainly from a headquarters perspective (with the exception that a number of interviews were conducted in China to incorporate a market context into the analysis) and consequently, analysis

³ In prior research, organizational capabilities have been assessed as critical to two distinct outcomes 1) the survival of the firm and 2) firm growth (Sapienza, Autio, George and Zahra, 2006).

on macro- and micro-level factors from the subsidiary perspective is limited. Although I do acknowledge that the MNC is not a unitary actor and that much of the MNC's advantages relate to the competences that reside within the subsidiary network (e.g. Forsgren, 2008), I consider capability development that occurs within subsidiaries but is limited to a local market context to be outside the scope of this study.

Fourth, as suggested by Laamanen and Wallin (2009) there are different levels of capability dynamics depending on whether the unit of analysis is the firm's operational capabilities, its portfolio of multiple capabilities, or the firm's entire capability constellation. Within the present study, the main focus is on the firm's individual capabilities as well as its capability base. However, the firm's entire capability constellation at the extended enterprise, or ecosystem level, including partnerships and strategic alliances provides an interesting area for future research (in line with research undertaken by Paukku, *forthcoming*; Vapola, 2010; Vapola, Paukku and Gabrielsson, 2010).

Fifth, globalization is a multifaceted and complex construct and a phenomenon that can be approached from various perspectives, e.g., political, institutional, economic or cultural perspectives. Within the economic perspectives certain views have emphasized the industry as the key driver of globalization (e.g. Yip, 2003; Tallman and Yip, 2009; Porter, 1985, 1990) while others have focused more on global trends and market drivers (e.g. Castells, 2000). Owing to the complexity of the globalization phenomenon it does not lend itself to objective assessment, and consequently, this study relies on the reflective views and perceptions that managers have on globalization, rather than studying the globalization phenomenon *per se*, e.g., the interdependencies between various markets, competition or actors.

Finally, although international business scholars have called for more contextualized theories that recognize the diversities of a context, including the national, cultural, political and institutional contexts, the main emphasis of this study is on the MNCs' organizational and business environment, which, however, I approach holistically. Although institutional theories are not explicitly included in the study to reduce its complexity, I do acknowledge that firms build their capabilities in an institutional and cultural context, and these contexts were taken into account to the extent that they emerged from the data. However, as the institutional environment is central to the co-evolution logic (Lewin and Volberda, 1999), and capability management within MNCs (Dunning and Lundan, 2010; Cantwell *et al.*, 2010), I do encourage future studies that explicitly incorporate this theoretical lens.

1.6 Research Process

This study has benefited from a research project funded by the national agency for technology and innovations (TEKES) that took place between 2006-2009. The theme of the research project was the impact of globalization on firm competitiveness with the purpose to identify appropriate strategies within a number of leading technology- and knowledge-intensives multinational firms in Finland. Industry globalization along with rapid technological change and intensified competition, including new competition from emerging markets had forced these companies to operate in a setting of continuous changes in the institutional-, technological-, and market environments of the firms. In addition to changing industry and competitive dynamics, new and sometimes divergent customer and consumer needs from both emerging and developed markets were driving these firms to revise their strategies. Of the five firms studied in the project⁴, four were global firms operating in technology intensive fields: Nokia, in the field of mobile phones, Wärtsilä, a global metal engineering firm, Kone, an elevator and escalator firm, and Perlos, an electromechanical component manufacturer. Iittala, a homeware and design company was part of the research project due to the high level of knowledge intensity of its operations. In these five technology- and knowledge-intensive firms there was evidence of recent business environment and/or business strategy change resulting from the globalization impact, requiring them to reassess their corporate strategies, including the configuration of their activities on a global basis.

The project involved a project leader and I was one of the four full-time researchers, each with a respective focus area. This study, as part of the research project, benefited from negotiated and privileged access to the case firms' top managers and strategists, and from the motivation of the company representatives to participate and deliver data. The inclusion of multiple researchers enabled the rapid acquirement of data on the global context gathered across multiple firms simultaneously prior to proceeding into more specific research areas.

After the end of the project, I was able to pursue a more focused study on capability development within the case firms. The rationale for this was that the project research findings suggested that differences in performance between different firms could not be simply explained by differences in

⁴ A sixth company, Honkarakenne was initially part of the research sample but was not involved in the research phase on capabilities, and consequently is not discussed here

strategies, but rather by the underlying capabilities of the firm. Consequently, the changes in the business environment and strategies were occasioning activity in capability development within the case firms. On the one hand, the rise of the emerging markets resulted in increasing cost pressures and required operational efficiencies in order to be able to offer lower cost products to satisfy customer needs within these markets. On the other hand, the intensifying competition originating from these countries, required firms to find new innovative and value-creating strategies and activities. Changes in the external environment also forced the case companies to perform organizational changes, which however, seemed to be highly dependent on their ability to build or acquire new capabilities and to change their corporate cultures.

Amongst the different capabilities in the firm's capability base, I put special emphasis on design capability development. Three of the five case firms, namely Nokia, Kone and Iittala, although operating in different industries, had identified design as a strategic capability. With the exception of Iittala, the case firms under investigation had traditionally considered technology as their principle driver of value creation and innovations, and as their main source of competitive advantage. However, these firms contested that their competitors increasingly had access to the same or similar technology making it more difficult to build competitive advantage solely on technology. Moreover, there proved to be a new phenomenon of firms that do not possess technological advantage within a specific industry but have managed to build sustainable competitive advantage on a capability to identify relevant user needs and preferences, and to satisfy these needs with user-focused product and service offerings. The most explicit cases on this phenomenon are firms that do not possess any technological knowledge or manufacturing capabilities, but acquire them through markets. A motivation to investigate design was that this capability seemed to be closely connected to this type of strategy. While the contribution of design has traditionally been associated with the ability to differentiate products (mainly through appearance) and manage corporate identity and image, there was evidence of a growing phenomenon of firms who exploit design to a larger extent in innovation management. Design-based methods and processes, therefore, are increasingly used to identify emerging user needs, solve user-focused problems, and create new user-centered knowledge and transform this knowledge into products/services and processes that incorporate value significant to the company and its customers. This phenomenon suggests that in addition to technology-driven innovations, user-driven innovations, stemming from new information about emerging or existing user needs and preferences, are gaining

momentum in the market place⁵. Finally, as the development of design capability within the case companies was fairly recent, it was feasible to set the boundaries to this development process and to collect the key events and activities with regards to this specific capability. Moreover, the key informants were both identifiable and available for interviews.

A multiple case study was initially adopted as the research method in the project. Case studies have been assessed as suitable to address real management problems, and when the research is performed in interaction with practitioners with an objective to create knowledge that is relevant to managers (Gibbert, Ruigrok and Wicki, 2008). To gain a multi-faceted understanding of the context and strategies of the firms under investigation, different theoretical perspectives, such as industrial organization economics, and resource-based approaches were integrated into the first stage questionnaire, considered as theoretical 'probes' in order to find the most appropriate theoretical lens for further application. The interviewees raised the role of emerging markets, such as China as paramount, necessitating the integration of this market context into the study. The second stage involved focus group interviews at the headquarters level, as well as individual interviews conducted in China. At a later stage I complemented the initial project research design and the correspondent interview data with process research and more focused interviews in order to deepen the understanding and to capture the complexity of the capability development phenomenon. The research approach and methodology adopted in the study, and the fairly long research period, allowed the use of a mixture of different approaches, including abduction or iterative cycles of deduction/induction (Pettigrew, 1997; Van de Ven and Poole, 2005).

Figure 2 depicts the research process from the initiation of the research project to the finalization of the doctoral thesis. The first stage involved defining the initial question of the study, including related themes and questions that led to the first data collection and early pattern recognition. This stage involved all five case firms and I was part of the research group. The second stage involved more elaborate themes and questions on the impact of globalization on firm capabilities, further data collection, additional pattern recognition and comparative analysis across cases. At this stage all five firms were involved and I acted as the lead researcher. Finally, the third stage included a more detailed study and research questions on capability development within three of the case firms, Nokia,

⁵ Design has also attracted an increasing amount of scholarly interest and substantial academic research in the field (e.g. Ainamo, 1996; Salimäki, 2003; Karjalainen, 2004; Valtonen, 2007; and Bello, 2008).

Kone and Iittala. This research, which I performed individually at the final stage, became the core of this doctoral thesis.

Finally, the rationale for adopting a monograph-format is that it has less space constraints than articles and consequently allows for an extensive elaboration on each case company to capture some of the richness and complexity that is fundamental to the understanding of the research phenomenon. Moreover, it enables a very detailed description on the methods employed and data analysis performed, judged as key criteria for evaluating qualitative research (Pratt, 2008). This monograph presents the research findings that I concluded individually and primarily after the research project. Some of these findings have been presented earlier in the form of conference papers (see Appendix 3). Joint research outcomes have been disseminated in the form of working papers, company reports and conference papers (see Appendix 3) and they are briefly elaborated upon in the literature review, but otherwise excluded from the study. Whenever joint research is discussed, it is indicated in the text. This research has also benefited from my long executive experience in a large multinational corporation that is not included in the sample but has enabled me to reflect upon and assess the validity of the findings in another context. Moreover, this experience facilitated my conversations with the interviewees owing to a 'common language', and aided me in better understanding the managers' mindsets during the study.

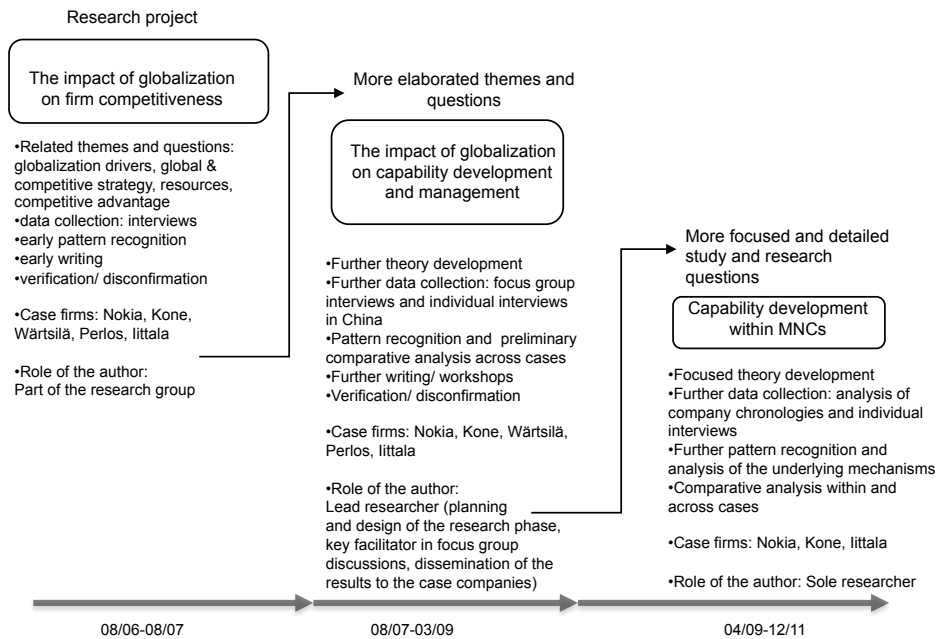


Figure 2. Research Process

1.7 Structure of the Study

The study is organized as follows. After this introductory chapter, in the second chapter I will review dynamic capabilities and evolutionary literatures, including research on organizational capabilities within the international business (IB) literature. In the third chapter I will explain and provide justification for the context-mechanisms-outcome (CMO) –analysis as the main approach to studying capability dynamics within MNCs. Moreover, I will explain the scope of the study and display the key constituents of the internal and external selection environments of the firm to enable a dynamic analysis of the co-evolution between various internal and external elements across multiple levels of analysis.

In the fourth chapter, the methodology chapter, I will explain the ontological and epistemological assumptions adopted in the study as well as the longitudinal multiple case study and process research methods adopted to build focused CMO-configurations and mechanisms-based explanations. The findings and results that follow in the fifth chapter are structured in two parts. The first part, including the within-case analyses, describes the development of capabilities within each case firm and puts forward detailed

CMO-configurations for an analysis on capability development and the underlying internal and external processes. The second part provides a cross-case analysis.

In the sixth chapter, the discussion chapter, I will explain how integrating the evolutionary and dynamic capability perspectives with international business theories enables access to the various patterns and mechanisms by which multinational firms develop capabilities when faced with uncertainty, but also to the internal and external selection mechanisms that condition these development processes within the MNC context. By doing so I seek to provide insights on the interplay between internal and external environments within multinational firms and point to the factors that impact capability development within this context. Finally, I will compare the results of this study with existing research and discuss the implications and contribution of the study.

The following Figure 3 demonstrates the outline of the study.

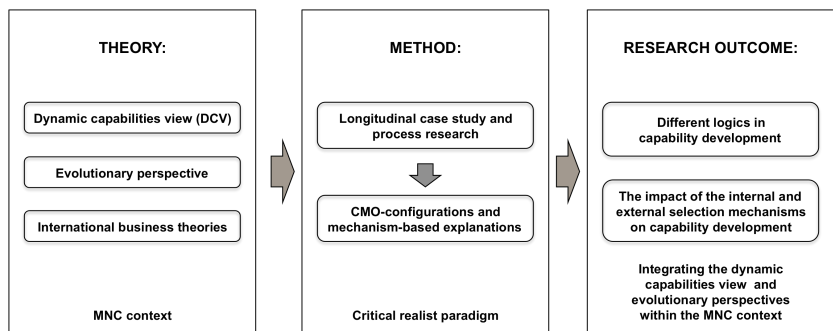


Figure 3. The Outline of the Study

2. Literature Review

The introduction of organizational routines, resources and capabilities at the center of the theory of the firm (Penrose, 1959) and as main units of analysis (Nelson and Winter, 1982) has had substantial consequences both for the understanding of firm evolution or firm behavior, as well as more macro-level and contemporary phenomena, such as social change and industry evolution. Resources, organizational capabilities, and routines have been claimed as key concepts to understand the impact of external and internal change on organizations as they indicate the ways in which external change has an influence on organizations and help identify drivers of internal organizational change (Nelson and Winter, 1982; Becker *et al.* 2005; Feldman, 2004; 2000). This part will first review literature on organizational capabilities and capability development. Then, the discussion will be extended to organizational change and co-evolution. Second, capabilities research within international business literature will be reviewed, including research on MNCs.

2.1 Organizational Capabilities and Development

The organizational capabilities literature can be divided into the evolutionary perspective, the resource-based view and the dynamic capabilities view, with antecedents in Schumpeterian theory (1934), behavioral theories of the firm, the evolutionary theorizing in economics (Nelson and Winter, 1982) and in the theory of the growth of the firm (Penrose, 1959). While the evolutionary perspective to organizational capabilities has been mainly concerned with explaining development and change in a context of industrial competition and development, the resource-based and the dynamic capabilities views are more in the tradition of studies in business strategy, with the principal purpose to identify the factors that contribute to the competitive advantage of firms (Dosi, Nelson and Winter, 2002). Compared to the more static resource-based view, the

dynamic capabilities view is mainly concerned with change within the domain of business strategy.

2.1.1 Organizational Capabilities

With their seminal work on evolutionary theorizing in economics, Nelson and Winter (1982) set organizational routines at the focus of attention when investigating change at both organizational and industry level. The latter works in the tradition of evolutionary theorizing have extended the discussion beyond routines to capabilities that involve purposeful planning and organized activity compared to the quasi-automatic organizational “routines” (see e.g. Dosi *et al.*, 2002). In order to differentiate capabilities from routines, Winter has described capabilities as “higher level and more significant aggregates of routines, which are more a matter of managerial discretion in their exercise” (in Murmann, Aldrich, Levinthal, and Winter, 2003: 27). These features distinguish ‘capabilities’ from the quasi-automatic organizational ‘routines’.

The resource-based view (Wernerfelt, 1984; Barney, 1991; Peteraf, 1993), in contrast, has taken resources as main units of analysis when examining the linkage between a firm’s internal features and competitive advantage. Within this view, a firm’s competitive advantage is built on the heterogeneity of resources, in line with the VRIN- criteria⁶ (Barney, 1991), considered to be the central factor in explaining the differences in performances between firms. Within the knowledge-based view (Grant, 1996a and 1996b; Kogut and Zander, 1992), which is closely associated with the RBV, knowledge is considered the key or strategic asset for a firm. The ability to create value is mainly based on intangible knowledge-based resources, and competitive advantage stems from uncommon and idiosyncratic stocks of organizational knowledge, as well as from the ability to generate new knowledge and to transfer it efficiently within the organization (Kogut and Zander, 1992). In order to understand variation of firm performance and growth, the knowledge-based view focuses on the organizing principles as units of analysis and mechanisms through which knowledge is created and transformed into economically rewarding products and services, as well as in the transfer and imitation of knowledge (Kogut and Zander, 1992).

The dynamic capabilities view (Teece *et al.*, 1997; Teece, 2009; Helfat *et al.*, 2007) takes a dynamic and temporal approach to firm capabilities by

⁶ The VRIN-criteria refers to the heterogeneity of resources, i.e., resources need to be valuable (V), rare (R), inimitable (I) and non-substitutable (N) in order to provide sustainable competitive advantage (Barney, 1991).

focusing on those capabilities of the firm that enable it to “purposefully create, modify and expand its resource and capability base” (Helfat *et al.*, 2007: 1) when addressing changes in its environment. Teece has proposed that for analytical purposes, dynamic capabilities may be disaggregated to “a capacity 1) to sense and shape opportunities and threats, 2) to seize opportunities, and 3) to maintain competitiveness through enhancing, combining, protecting, and when necessary, reconfiguring the business enterprise’s intangible and tangible assets” (Teece, 2009:4). It has also been suggested that dynamic capabilities are the type of capabilities that modify other resources and capabilities within the firm’s capability base and determine their rate of change (Helfat *et al.*, 2007; Winter, 2003). While the evolutionary and resource-based views have centered their attention on internal routines or proprietary resources and capabilities, the dynamic capability view takes into consideration all resources and capabilities that the organization “owns, controls or has access to on preferential basis” (Helfat *et al.*, 2007:4), explicitly considering firm action to reach outside the boundaries of the firm (Helfat *et al.*, 2007). Moreover, by incorporating the notion of a changing and competitive environment (Teece *et al.*, 1997; Eisenhardt and Martin, 2000) the dynamic capability view has been said to add to the understanding of the link between firm capabilities and the external environment, especially in industries where change is rapid and innovation a central aspect of competition (Dosi *et al.*, 2002).

As the main focus of this study is on capability development within multinational corporations in the context of a changing, globalizing environment, rather than in explaining performance or competitive advantage, the subsequent parts will focus on the evolutionary and dynamic capability perspectives that enable access to the process of capability development and firm evolution, compared with the more static resource-based view.

2.1.2 Capability Development

The evolutionary perspective views capability development as being a gradual, cumulative process subject to evolutionary processes of variation, selection, and retention (Dosi *et al.*, 2002). Variation signifies departure from existing routines and practices, and forces that select or eliminate certain types of variations generate the evolutionary process of selection, while retention preserves the selected variations (Aldrich and Ruef, 2006). New resources and capabilities become manifest in new variants of products and services introduced into the market place, which are then constantly evaluated and selected both internally and by the external

environment through external evolutionary mechanisms. As a result of external evolutionary mechanisms, certain routines and capabilities are retained, and diffused into other firms (Nelson and Winter, 1982) shaping both organizational and social change (Aldrich, 1979; Aldrich and Ruef, 2006). Although the latter works in the tradition of evolutionary theorizing have extended the discussion beyond routines to capabilities that involve purposeful planning and organized activity compared to the quasi-automatic organizational 'routines' (see e.g. Dosi *et al.*, 2002), this stream of literature stresses the evolutionary process of selection over strategic planning as a key organizational process, arguing that "selection logic is what most cleanly separates evolutionary theory from the other kinds of theories in management" (Aldrich in Murmann *et al.*, 2003: 37).

Closely related to the evolutionary perspective, Helfat and Peteraf (2003) have put forward a model labeled the dynamic resource-based view⁷. It holds that the emergence and development of capabilities are dependent on both internal and external factors that form the 'internal and external selection environments' of the firm and determine the development paths of its capabilities. These authors maintain that the internal selection environment consists mainly of managerial decisions, while the factors in the external selection environment include changes in demand, science and technology, raw material availability and government policy. Other researchers have pointed to the key role of environmental shocks as part of the firm's external environment (Sirmon, Hitt and Ireland, 2007). Pettigrew (1987) has taken a broader perspective and has defined the 'outer context' as the entire social, economic, political, and competitive environment of the firm, and the 'inner context' as the firm's structure, corporate culture, and political context through which the initiatives for change have to proceed. Burgelman and Siegel (2008:141), in contrast, have defined the internal selection environment as the set of corporate contextual factors that maintain the alignment of the official corporate strategy, the basis of competitive advantage within the industry, as well as the firm's distinctive competencies and strategic actions. Burgelman (1996) contends that the internal selection environment comprises of the strategic context and the structural context that together constitute the internal selection process. The strategic context refers to the process through which initiatives are internally selected and retained and that relates to the revision of firm strategy (Barnett and Burgelman, 1996: 7; see also Burgelman, 1983), while the structural context refers to the strategic planning process, organization structure, and resource allocation that align action with strategy

⁷ These authors have claimed that this model is also deeply rooted in evolutionary economics (Helfat *et al.*, 2007:38)

(Burgelman, 2002). He also claims that whereas the structural context tends to select initiatives that are consistent with the extant strategy, this type of inertia can be overcome through the process of strategic context determination that enables initiatives to be internally selected and integrated into the corporate strategy despite the structural context.

It follows that what has become central to the organizational capabilities literature within this research tradition is the concept of 'fit' determining how well capabilities perform in the selection environments of the firm, and consequently driving capability development (Aldrich, 1979; Helfat and Peteraf, 2003; Helfat *et al.*, 2007; see also Siggelkow, 2002). Selection criteria are established through the operation of market and competitive forces, the institutional environment, or internal factors, such as managerial decisions. Whereas environmental selection has been considered to closely resemble natural selection, researchers have pointed to various search and selection rules and practices operational within firms (Burgelman, 1991; 1994; Levinthal in Murmann *et al.*, 2003; Henderson and Stern, 2004). Internal selection occurs for example when the management decides to discontinue a product or a technology before they become externally selected out, e.g., in order to release resources for the development of new technologies. External selection, on the other hand, kills a product, or an entire organization, and renders the underlying capabilities obsolete (Henderson and Stern, 2004). Henderson and Stern (2004) found external selection to be more powerful than internal selection in driving firm adaptation as it indicates mismatches between the firm products or capabilities and external demands. They also found that especially in high-velocity settings, firms experience selection events frequently and recurrently, requiring organizational learning and repetitive trial-and-error searches in order to generate a positive, cumulative impact of the firm's future actions. Likewise, Nelson and Winter (2002) suggest that changes in the external environment may lead to misfits between firm capabilities and the environment because of learning and adjustments gaps, and instability in the processes of experimentation. In contrast, research conducted by Burgelman (1991; 1994) has shown how in successful firms, the internal selection processes may effectively substitute the external selection processes. He also found that firms may build internal selection mechanisms and establish internal selection criteria that more effectively reflect external selection criteria than the official corporate strategy. Westney (2009), in contrast, has called attention to the possibility of weak selection (as opposed to strong selection) that at the population level refers to learning and adaptation, and at organizational level to a process where certain organizational patterns are neither positively selected nor negatively

selected out. This gives them the opportunity to continue to survive and to potentially serve as sources of variation in the future as circumstances change.

Other researchers have also pointed to factors that may impact capability development or change within firms. An obstacle to capability development and organizational change may be internal selection criteria that reflect past external criteria and have become inappropriate in the changed context (Aldrich and Ruef, 2006). Henderson and Stern (2004) also suggest that internal selection may be biased by internal politics when individuals aim to influence selection criteria to enhance their power and control, or individual activities directed towards maintaining consistency despite external environmental pressures (Aldrich and Ruef, 2006), even when it implies accepting low performance (Aldrich and Ruef, 2006; Gimeno, Folta, Cooper and Woo, 1997). Core capabilities may also develop to incorporate dysfunctional sides and thereby become core rigidities that inhibit change (Leonard-Barton, 1992), or they may generate competency traps (Levinthal and March, 1993).

As an outcome of internal and external selection, the lifecycle framework (Helfat and Peteraf, 2003) contends that capabilities, just like products, follow lifecycles that include several stages, such as the founding, the development, and the maturity stage as the capability evolves over time. While these stages are dependant on factors internal to the organization, the further development of the capability also depends on external factors. When the internal and external selection events have a strong enough impact to change the development path of the capability, transformation or 'branching' of the original capability takes place, and it takes an altered form of retirement, retrenchment, replication, renewal, redeployment or recombination. Retrenchment refers to a gradual decline of a capability while retirement signifies the death of a capability as an outcome of internal or external selection events. Replication means the reproduction of the capability in another geographic location whereas redeployment refers to its application to another product (or service) market. These two latter processes often involve recombination, when the original capability is combined with another capability which often leads to its upgrading. Finally, renewal reflects either minor or major modification to the original capability. The research undertaken by Laamanen and Wallin (2009) has complemented this research by pointing to different dynamics depending on whether the unit of analysis is an individual capability, the capability base or the firm's entire capability constellation. They note that while individual capabilities may evolve continuously at their own pace, capability development at the portfolio level resembles a "race in which different co-

specialized capabilities are evolving in parallel” (2009: 977). These authors also note that at the level of capability constellations of co-specialized assets the dynamics may include revising business models and investing in multiple capability development areas at the same time.

Compared to the evolutionary perspective, the dynamic capabilities view (Teece *et al.*, 1997; Teece, 2009; Helfat *et al.*, 2007) puts more emphasis on the ability and key role of top management in “appropriately adapting, integrating, and reconfiguring internal and external resources and capabilities to match the requirements of a changing environment” (Teece *et al.* 1997: 515). Eisenhardt and Martin (2000) have proposed four different modes in altering the firm’s resource and capability base, namely leveraging, creating, accessing, and releasing. Related to the concept of dynamic capabilities is that of ‘combinative capabilities’ (Kogut and Zander, 1992), referring to the firm’s ability to exploit its existing knowledge to new opportunities and to manage change by transforming existing capabilities into new ones. As opposed to the evolutionary perspective, the dynamic capability view takes into consideration all resources and capabilities that the organization has access to (Helfat *et al.*, 2007), including firm action to reach outside the boundaries of the firm to acquire new capabilities or to gain access to resources and capabilities of other firms through relational capabilities such as alliances (Helfat *et al.*, 2007). It also underlines the ability of the firm to take advantage of external innovation before competitors (Teece, 2009).

Consistent with this dynamic approach, Helfat *et al.* (2007) differentiate between ‘technical fitness’ and ‘evolutionary fitness’, the former indicating how well a capability performs its function while the latter determines a firm’s ability to ‘make a living’ in a changing environment (Teece, 2009; Helfat *et al.*, 2007). Evolutionary fitness is dependent on the firm’s dynamic capabilities as they enable firms to “identify the need or opportunity to change, formulate a response to such a need or opportunity and implement a course of action” (Helfat *et al.*, 2007:2). Helfat *et al.* (2007) suggest that the identification of a need or opportunity deals with problemistic search and opportunity recognition processes, the formulation of a response involves, e.g., resource allocation processes, while the implementation may involve a variety of managerial and organizational processes such as developing new products or processes, entering/exiting businesses, extending current businesses internally or alternatively, through acquisitions or strategic alliances.

Helfat *et al.* (2007) have also suggested that while firm survival is dependent on the firm’s ability to adapt to the external environment, firm growth depends on the level of its evolutionary fitness, and long-term

survival on the ability to sustain evolutionary fitness over time. These authors suggest that maintaining an evolutionary fitness requires reconfiguration of the firm's capability base and may also necessitate deselecting or divesting unnecessary resources or capabilities that no longer yield value (see also Teece, 2009). Although the dynamic capabilities view stresses the ability of an organization to purposefully modify its resource and capability base, it also emphasizes the path-dependent nature of capabilities. The path-dependent nature of capabilities relates to the fact that capabilities are "a function of knowledge and experience that the firm has acquired over time" (Augier and Teece, 2007:178). This perspective holds that the enterprises capability development may be tied to a certain trajectory determined by its current position, former investments and routines (Teece *et al.*, 1997). In addition to path-dependency, recent research has come to emphasize the role of managerial cognition in affecting capability development (Laamanen and Wallin, 2009; Tripsas and Gavetti, 2000; Adner and Helfat, 2003; Gavetti, 2005; Danneels, 2010). Laamanen and Wallin (2009), in investigating the cognitive dynamics of capability development paths found development in operational capabilities to be mainly driven by instrumental cognition and the development in the firm's capability portfolio by managerial attention, whereas managerial foresight was critical to driving changes in the firm's entire capability constellation at the level of the extended enterprise.

Although the dynamic capabilities view (DCV) has been considered as closely related and complementary to the evolutionary perspective of the firm (e.g. Helfat *et al.*, 2007; Dosi *et al.*, 2002; Teece, 2009⁸), there are also fundamental differences between these two perspectives that the following Table 1 seeks to highlight. First, as discussed earlier, the evolutionary perspective has focused on the relationship between internal and external selection environments, and put emphasis on internal routines and proprietary resources and capabilities as well as internal learning. The DCV, in contrast, has emphasized the relationship between firm capabilities and the external environment, focusing on those capabilities that enable change in order to achieve congruence with the external conditions, and integrating external capabilities into the analysis. Second, as previously discussed, the evolutionary perspective builds on the processes of variation, selection and

⁸ Teece has claimed the dynamic capabilities to be "partially but not entirely in the spirit of evolutionary theorizing" (2009:50) as its focus is on the variables and relationships that need to be "manipulated" in order to achieve superior performance (Teece, 2009:50). These acts include creative destruction, spin-offs and spinouts as well as neutralizing decision biases. Teece concludes: "enterprises may be more like biological organisms than some economists, managers, and strategy scholars are willing to admit; but they are also more malleable than some organizational ecologists are willing to recognize" (2009: 50).

retention, and stresses selection as the key process, while the DCV puts more emphasis on the role and ability of top management in adapting to and influencing the external environment. Third, although both of these perspectives emphasize the concept of 'fit', the DCV has put more emphasis on evolutionary fitness that it claims to be a function of the firm's dynamic capabilities and its external environment. As an outcome, while the evolutionary perspective regards capability development to be an outcome of internal and external selection, the DCV perspective regards capability development to be an outcome of managerial exercise and its dynamic capabilities over time (Wang and Ahmed, 2007). Finally, as the evolutionary perspective seeks to explain development and change, these accounts tend to be more descriptive by nature as opposed to the more prescriptive nature of the DCV as it endeavors to explain corporate performance and competitive advantage.

	Evolutionary perspective	Dynamic capabilities view (DCV)
Main focus	Internal routines and proprietary resources and capabilities, internal learning	Capabilities that enable the firm to create, modify and expand its resource and capability base, includes firm action to reach outside the boundaries of the firm to acquire new capabilities
	Relationship between internal and external selection environments	Relationship between firm capabilities and the external environment
Key process	Variation, selection, retention	Strategic action to modify the firms resource and capability base
Fitness	The concept of "fit" determining how well capabilities perform in the internal and external selection environments of the firm	The "evolutionary fitness" of the firm being dependent on the external environment and the firms dynamic capabilities
Internal vs. external selection criteria	Firms set internal search and selection rules to reflect or 'mimic' external selection criteria	Firms are able to influence their environment and prevalent external selection criteria to improve their evolutionary fitness or to create market change
Capability development	Capability development is a gradual, cumulative process subject to evolutionary processes of variation, selection and retention	Capability development is an outcome of managerial exercise and the firm's dynamic capabilities, subject to path-dependency
Outcome	Development and change	Performance and competitive advantage
Nature	Descriptive	Prescriptive

Table 1. Evolutionary vs. Dynamic Capabilities Perspectives

Next, the discussion will be extended from organizational capabilities and capability development to organizational development and change, as well as to macro-level evolution, including the co-evolution between the firm and its environment.

2.1.3 Organizational Development and Change

Prior research has also provided illustration of how the evolutionary processes of variation, selection, retention and struggle shape organizational change and suggested that the existing routines, organizations, and organizational forms are an outcome of long-term evolutionary processes (Aldrich, 1979; Aldrich and Ruef, 2006). These authors claim that it is these evolutionary processes that drive organizational development and change by determining the opportunities of change and generating the critical events that shape organizations. They suggest that at an organizational level variation signifies change in existing routines and practices, and may include both intentional and blind variation. Organizational variation may also originate from various sources and through multiple mechanisms, such as formal programs and processes, experimental probes or cooperative arrangements. Unintentional variation, on the other hand, may result from trial and error learning, imitation, ad hoc problem-solving vis-à-vis external changes, or be simply an outcome of mistakes or luck (Aldrich and Ruef, 2006). Referring to the various forms of strategy processes it is primarily the autonomous, as opposed to induced, processes that are likely to produce the most variation within organizations (Burgelman, 1991).

Forces that select or eliminate certain types of variations in organizational routines and practices then generate the evolutionary process of selection (Aldrich and Ruef, 2006). Internal selection operates through organizational mechanisms such as resource allocation and induced strategy process, while external selection operates through market forces, competitive action, or the institutional environment (Burgelman, 1991). Aldrich and Ruef (2006) maintain that the processes of variation and selection are linked by continuous feedback loops and cycles, and occur simultaneously rather than sequentially as variations become selected based on existing internal or external selection criteria. They also claim that as long as the selection criteria remains unchanged, the selected routines, structures and procedures maintain existing organizational forms. Retention then, preserves the selected variations and provides the mechanisms by which the benefits of selected variations are collected (Aldrich and Ruef, 2006). As an outcome, retention becomes manifested in

the form of organizational-level learning and core competence (Burgelman, 1991), but also in the form of culture and socialization (Westney, 2009).

At the firm level the process of variation-selection-retention is closely related to the exploration–exploitation discussion. While exploration at firm level parallels the process of variation, exploitation is closely akin to selection and retention processes (Henderson and Stern, 2004). Firm growth to new product or geographic markets through the replication of existing routines and capabilities can also be considered as closely related to the retention process, where a firm extends the use of the selected variations in order to grow and to collect the benefits of its variety-generating activities.

Compared with firm growth that may occur through the replication of existing routines and capabilities into new product or geographic markets, Aldrich and Ruef maintain that organizational transformation signifies a “shift to new kinds of competences that challenge existing organizational knowledge” (2006:134). Organizational transformation thus involves a major change in an organization over time and a shift in the firm’s capability base that may include eliminating certain resources or capabilities. It also represents a substantial variation, planned or unplanned, that has been selected and retained, and represents a discontinuity in existing routines and capabilities (Aldrich and Ruef, 2006). Selecting forces, these authors claim, may be internal (e.g. managers) or external (e.g. market forces and government regulations). Feldman (2004) has argued that existing resources and routines may either promote or inhibit change, and that it is the context-dependent and dynamic nature of resources and capabilities that enables continuous change to occur.

Aldrich and Ruef (2006) suggest that the evolutionary approach can also be considered a generic framework in understanding development and change at multiple levels of analysis. At the macro level, the evolutionary framework accounts for the variation within existing organizations as well as variations introduced by new organizations or new organizational populations (Aldrich and Ruef, 2006). Research on technological change (Tushman and Anderson, 1986; Anderson and Tushman, 1990) has illustrated how radical innovations represent departures from established organizational forms, as they transform the conditions of existence for incumbent organizations by rendering their competencies obsolete or decreasing their value. In evolutionary terms (Nelson and Winter, 2002; Henderson and Stern, 2004), scientific breakthroughs set off periods of ferment that create variety, followed by eras where industries converge on a dominant design, exemplifying natural selection that destroys variety. The periods of incremental change, in which a few players come to dominate,

then, exemplify retention at industry level. At the macro-level retention may also refer to a certain type of collective action, e.g., establishment of standards and regulations (Westney, 2009).

Reflecting on population-level changes, Adner and Levinthal (2002) have pointed out that simply applying existing technology to a new application domain may generate a speciation event, where a new ‘population’ is set out on a new evolutionary path. Consequently, radical, discontinuous changes may originate from minor technological changes or no change at all, they argue. However, they may signal important breakpoints as new selection criteria may emerge and there may be a significant change in the resources available for subsequent development. As an outcome, new selection criteria, irrelevant in the former application domain, may become key, as these authors point out.

Recent research within this tradition has also come to emphasize the difference between collective and individual action. Felin and Foss (2005) argue that research should increasingly focus on micro-foundations of firm capabilities as local search or imitative behavior at individual level may unintentionally lead to emergence or changes in organizational routines or capabilities. Thus, individual action may include both intentional and unintentional action, as well as positive and negative events that occur as a response to current opportunities and problems rather than as a result of ‘strategic planning’ (Mintzberg, 1974). Likewise, Burgelman (1991) differentiates between induced and autonomous strategy processes, and claims that variation works primarily through autonomous strategy processes and individuals, and may emerge from all levels of management, especially those levels where managers are in direct contact with developments in technology or markets.

The dynamic capabilities view, once more, emphasizes the role of top management in driving organizational-level changes by “orchestrating complementary and co-specialized assets, inventing and implementing new business models, and making astute investment choices (including with regard to R&D and M&A)” (Teece, 2009:74). This perspective thereby extends the scope of dynamic capabilities well beyond just managing the firm’s resource and capability base. These firm-level changes may then have a wider impact, e.g., when the market entry by a firm with new and superior capabilities may decrease the value of the incumbent’s capabilities, as pointed out by Teece (2009). Likewise, in the context of the multinational firm, the cross-border activities may also have a similar effect, as an entry into a host market by a multinational firm may drastically reduce the value of the local firms’ capabilities or even render them obsolete. Finally, Helfat *et al.* (2007) argue that just like the evolutionary perspective, the concept of

dynamic capabilities can be extended from firm level to macro-level phenomena as “industry evolution reflects the evolution of firms, each of which may have dynamic capabilities that in turn affect both firm and industry evolution” (2007: 120), which leads us to the next topic of co-evolution.

2.1.4 Co-evolution

The co-evolutionary perspective (Lewin and Volberda, 1999; Madhok and Liu, 2006) at least partially reconciles these seemingly contrasting perspectives. Reflecting on both organizational (micro) and industry-level (macro) processes, this approach emphasizes the simultaneous evolution of the organizations and their environments as a continuous and interactive process. According to this view, both the external macro and the internal micro level undergo change as a result of selection and adaptation processes, and evolve simultaneously, which comprises the co-evolutionary process. This process occurs within a dynamic framework that includes the ongoing iteration of variation, selection and retention. This view suggests that as an outcome of the interactions between firm-level processes and the macro-level processes (e.g. dynamics of competition and selection), organizations co-evolve with their environments leading to changes that are joint outcomes of managerial action and external, such as environmental and institutional effects (Lewin and Volberda, 1999).

Both the evolutionary and the dynamic capabilities views recognize the process of co-evolution. Within the evolutionary perspective, organizational change is explained as an outcome of the dynamic interplays between exogenous industry-level and endogenous firm-level forces (Burgelman, 1991; 1994). Similarly, Aldrich and Ruef maintain that external events interact with a firm’s action to determine the rate and course of change, resulting in organizational change and emphasize the “interaction of external selection with internal variation, with change proceeding at a pace set by the intersection of organizational and external forces” (2006:162). In addition, by focusing on intra-organizational processes, research from this perspective examines how the dynamics of firm-level distinctive competences matches, or fails to match the dynamics of the basis of competition in the industry (Burgelman, 1991; 1994; Burgelman and Siegel, 2008), e.g., during technological change that disrupts or destroys competences (Tushman and Anderson, 1986), or has an impact on the relative importance of different competencies (Henderson and Clark, 1990). Similar to the concept of ‘fit’ is the idea of symmetry, or synchronization, between the micro and macro-level contexts (McKelvey, 1997).

In line with the co-evolution logic, recent contributions within the dynamic capabilities literature consider firms to be able to influence their environment and prevalent external selection criteria (Teece, 2007; 2009) or to create market change (Eisenhardt and Martin, 2000) including “shaping the rules of the game in the global market place” (Teece, 2009:6). The dynamic capabilities view regards market structure as an endogenous outcome of both innovation and learning, and argues that by means of their dynamic capabilities firms not only adapt to the external environment but also shape the environment through co-evolution and complex interactions between various actors in the business ecosystem (Teece, 2009)⁹. Moreover, Teece (2009) has emphasized the level of co-specialization as a key dimension of ‘fit’. He claims that in the case where managers are able to combine co-specialized assets on a global scale and to shape the external environment to the firm’s advantage ‘co-evolutionary fitness’ may be attained.

2.1.5 A Typology of Organizational Development and Change

Aldrich and Ruef (2006) have contested that while an evolutionary model serves as a generic framework for understanding change within multiple levels, it does not specify the ‘engines’ driving the evolutionary processes and needs complementary perspectives when building explanations. Westney (2009) has suggested that it is precisely these ‘engines’ that serve to differentiate between the main theories and points to resource efficiency, legitimacy, as well as power and interest as ‘engines’ or key selection criteria in the main organizational theories. In order to reconcile the various perspectives, Van de Ven and Poole (1995) have put forward an overarching framework derived not only from management and organization studies but from other fields as well. This framework includes four alternative models that these authors refer to as ‘process theories’ in order explain the mechanisms, circumstances and contingencies that generate change events.

These process theories are characterized by different sequences of events, different generative mechanisms and different modes of change which all operate at different levels of analysis (see Figure 4). These models or process theories, however, are not mutually exclusive and Van de Ven and Poole (1995) claim that combining different theories may provide stronger explanatory power than the approaches building on singular theories. They also criticize the fact that organizational researchers have tended to focus

⁹ In his more recent contribution, Teece (2009) has put ‘ecosystems’ at center stage and defines the environmental context not as ‘industry’ but rather as ‘ecosystem’ that comprises of the organizations, institutions, and individuals that impact the enterprise and its customers and suppliers

on linear or cyclical models of organizational development and have treated other seemingly random patterns as either ‘stochastic processes’ or as ‘various forms of error distributions’. Consequently, they argue that the framework extends other models by including nonlinear and dynamic models of organizational change and development. Likewise, Aldrich and Ruef (2006) suggest that current models of transformations should be complemented with models that do not assume a predetermined order of developmental sequences. Instead, they call for explanations that take into account interactions between external events and firm action, which may result in organizational change that is rather algorithmic, than developmental in nature. Figure 4 displays the four alternative process theories including life cycle, teleological, dialectical, and evolutionary theories, along with the corresponding units and modes of change, as well as the related ‘engines’.

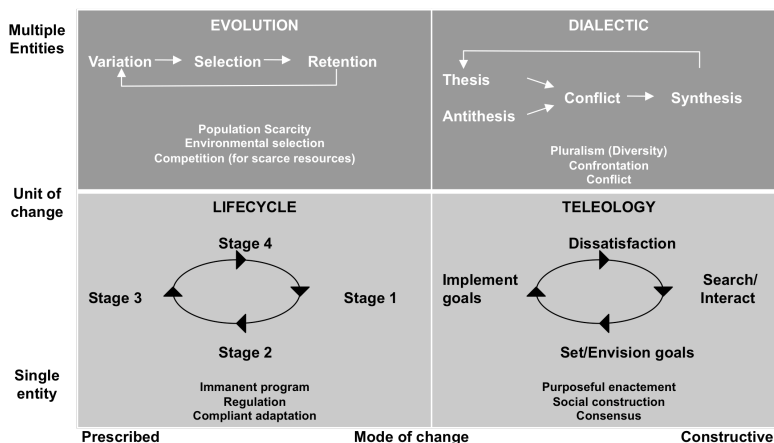


Figure 4. Process Theories of Organizational Development and Change (Van de Ven and Poole, 1995)

The lifecycle process theory of organizational change reflects organic growth, where an organizational entity evolves through natural or logical sequences or stages. Although the external environment influences the development process, Van de Ven and Poole (1995) argue that it is an entity’s “immanent program, logic and rules”, as well as its potential, that govern the development and mediate the external impact. They note that lifecycle theories are commonly applied to explain development and change in terms of institutional programs or rules that require organizational activities to proceed in a given order. Consequently, they argue the

progression of events is viewed as linear and irreversible, leading to stages that are programmed and regulated by nature, logic or institutions.

Teleological process theory, in contrast, views development as a sequence of goal setting, implementation, evaluation, and modification of the set goals (see Figure 4). As an outcome, as Van de Ven and Poole (1995) point out, the organizational entity proceeds toward a planned goal or end state, producing sequences of events that may be recurrent and discontinuous. Consequently, there are no given rules or predetermined sequences in a teleological process but rather multiple, equifinal ways to achieve the goal or end state. Therefore, these authors regard both the external environment and the resources of the entity as influential to the development process, e.g., by creating constraints or opportunities that push the entity toward a new developmental path.

The two final process theories operate at the level of multiple entities (see Figure 4). The dialectical process theory views change as an outcome of a process where opposing forces contradict to challenge the existing status quo. The struggle between the existing thesis and the challenging anti-thesis produces a synthesis as a new construction that then becomes the new thesis in the next dialectical cycle. The dialectical model requires, as Van de Ven and Poole (1995) explain, at least two entities that represent the oppositions, resulting in a frequent and discontinuous sequence of 'confrontation, conflict and synthesis' between opposing a contradictory interests, values or events. They claim that these oppositions may either be internal to the organization, e.g., when multiple conflicting goals or interests compete for attention or resources, or external when activities of one organization or group of organizations contradict with those of other organizations or groups.

Evolutionary process theory, in contrast, regards change as an outcome of a continuous cycle of variation, selection, and retention that produce recurrent and cumulative events within a population. In this process theory, the outcome of the natural selection is competitive survival among organizational entities as they struggle for scarce resources. This evolutionary process theory, as presented by Van de Ven and Poole (1995), is primarily concerned with cumulative changes in populations of organizational entities resulting from natural selection and builds on the idea of environmental selection, in line with the works by Hannan and Freeman (1977). Therefore, it represents a more restrictive view of the evolutionary perspective than the one adopted in this study. The evolutionary perspective adopted in this study and discussed above builds more on the view put forward by Aldrich and Ruef (2006) and Nelson and Winter (1982) and assumes that 'routines' of the firm, as a persistent nature

of the organization, determine the possible behavior of the firm, while the actual behavior is also determined by the environment. This focus on routines and capabilities, rather than the external environment, is the fundamental divergent point between the evolutionary perspective adopted in this study and the definition offered by Van de Ven and Poole (1995). In addition, these authors apply the evolutionary model to populations as units of analysis whereas the present study, in line with Aldrich and Ruef (2006), applies the evolutionary perspective also to a study on single organizational entities.

In terms of informing drivers of development and change, the evolutionary model holds that it is mainly the competition for scarce resources that drives development and change, whereas in the dialectical model it is the conflict between entities that represent opposing forces, interests or classes that produces change (see Figure 4). Teleological models propose that it is managerial action and social construction among individuals that generate purposeful variation and selection processes, as opposed to the lifecycle model, which views different stages to be influenced by various institutional or natural rules, programs or logic (see Figure 4). In addition, as Van de Ven and Poole (1995) point out, these different drivers of change may also operate on a different timeframe and therefore different drivers may be acting simultaneously resulting in development and change that is influenced by diverse internal and external factors. As a result, whereas the evolutionary processes may operate within a population during longer periods, this process may be punctuated by teleological actions by individual entities that produce transformations. The interaction between multiple drivers of change, involving feedback loops, may then produce complex and multilayered phenomena, including non-linear and dynamic changes in organizations and organizational populations, as these authors point out. Likewise, Westney (2009) suggests that it is likely that multiple 'engines' or selection criteria such as resources efficiency, legitimacy or power and interest co-exist within multinational firms, especially within the various evolutionary subsystems of geography, business or function.

Finally, Van de Ven and Poole (1995) suggest that there is a difference as to the mode of change involved: the evolutionary and lifecycle perspectives operate on a prescribed modality, producing change that is first-order by nature and represents a variation within an existing framework. The teleological and dialectical perspectives, in contrast, operate in a constructive modality producing second-order change that disrupts existing assumptions or frameworks.

These various types of development and change are summarized in the Figure 4 and I will return to them in the next section when reflecting upon the different theories in international business.

2.1.6 Summary and Research Problematization

Despite the large body of literature and important contributions on organizational capabilities, I identified the following aspects in existing literature that are worth problematizing, and that warrant both further empirical research and theoretical development.

First, much of the organizational capabilities literature has been directed towards explaining competitive advantage at a given time as opposed to explaining development and change. Consequently, especially the more static approaches have focused their attention on the types of capabilities (e.g. along the VRIN-criteria) that provide the firm with ideal fit or sustainable competitive advantage, rather than addressing the dynamism in capabilities and focusing on how firms develop or change capabilities over time. Moreover, these perspectives have emphasized the quality of fit and have, to a large extent, ignored the role of time and timing in developing and managing firm capabilities.

Secondly, regarding those perspectives that explain development and change, a review of the literature indicates that there is a fundamental difference between the evolutionary and dynamic capabilities perspectives as to the drivers of capability development, especially as it comes to the role of top management. While the evolutionary perspective (e.g. Nelson and Winter, 1982; Dosi *et al.*, 2002; Aldrich and Ruef, 2006) views capability development as being a gradual, cumulative process driven by the evolutionary processes of variation, selection and retention, the dynamic capabilities view (Teece *et al.*, 1997; Teece 2007; 2009; Helfat *et al.*, 2007; Eisenhardt and Martin, 2000) emphasizes strategic action as a response to changes in the operating environment focusing on those capabilities of the firm that enable it to change its resource and capability base (Teece *et al.*, 1997; Helfat *et al.*, 2007).

Thirdly, there is a limited understanding of the elements external to the firm as they relate to capability development, and of the interactions between internal and external elements. Consequently, research on the “complex interactions that occur over time between the firm's resources and its competitive environment” (Priem and Butler, 2001: 35) has been called for and the MNC context and the globalizing business environment of uncertainty and complexity seem to offer an ideal object of such a study. The integration of the external environment then, provides a better

understanding of the different patterns of development and change (e.g. Van de Ven and Poole, 1995) that may result from the interactions between firm action and environmental effects, and the co-evolution between the two.

Fourthly, the organizational and managerial processes internal to the firm have commonly been reduced simply to 'managerial decisions' or 'management agency', which not only ignores the richness and complexity of the environment internal to the firm but also disregards the forces underlying organizational and managerial decision-making (for notable exceptions see Burgelman 1991; 1994; 1996; 2002; Burgelman and Siegel, 2008). Moreover, the mechanisms that challenge the firm's dynamic capabilities or top management action warrant further research. These problematizations seem particularly pertinent in the case of the multinational firm, as will be discussed next.

2.2 Organizational Capabilities and the MNC

Within international business research, and ever since the seminal work of Hymer (1976), firm-specific advantages have received keen scholarly interest among international business researchers seeking to explain the existence and behavior of multinational firms. Because the replication and transfer of knowledge and capabilities, as well as creation of new capabilities are fundamental to growth in international markets, MNCs play a major role in the generation and diffusion of capabilities globally (Dunning and Lundan, 2010). The ability of the MNC to transfer non-codified and complex knowledge across borders (Kogut and Zander, 1993) and to access and integrate locally embedded knowledge and capabilities that reside within subsidiaries and make them available to the rest of the multinational firm (Dunning 1988; Madhok and Liu, 2006) have been argued to constitute the main advantages of the MNC. More recently, the dynamic capabilities view has been integrated with the international business literature emphasizing changing capability dynamics during the processes of firm internationalization and globalization (Tallman and Fladmoe-Lindquist, 2002; Luo 2000; 2002) and arguing that the ability of multinational firms to engage in cross-border transfer of capabilities and to create institutional innovation underlie the dynamic capabilities of the MNC and are at the very core in explaining the advantages of the multinational firm (Dunning and Lundan, 2010).

2.2.1 Capability Processes within MNCs

Traditional international business or MNC theories have been characterized as capability recognizing as they assume that internationalizing firms or MNCs possess some unique firm-specific and often home-based advantages that enable them to expand internationally (Tallman and Fladmoe-Lindquist, 2002) or to overcome the liability of foreignness (Hymer, 1976; Zaheer, 1995). In the traditional international business literature these firm resources and capabilities have been referred to as firm-specific advantages (Hymer, 1976), market knowledge and learning (Johanson and Vahlne, 1977), organizational capacity (Welch and Luostarinen, 1988), or ownership advantages (Dunning, 1981). Several researchers have argued that firms first exploit the routines and capabilities built to fit the home country environment during international expansion (Kogut, 1997; Collis, 1991) by choosing foreign locations that provide the best application for their internal, mainly home-based capabilities (Collis, 1991) and by expanding horizontally through the processes of transfer and replication (Meyer, 2006). Consequently, this earlier literature has mainly treated firm resources and capabilities as prerequisites for internationalization or as rather static firm-specific advantages and therefore, capability development has been seen as a rather unilinear process of capability accumulation and building. Although some of the early perspectives have included an idea of acquiring complementary location-specific advantages (Dunning, 1981) in order to overcome the liability of foreignness (Hymer, 1976; Zaheer, 1995), or an idea of learning and building experience beyond exploiting the initial domestic competitive advantage (Johanson and Vahlne, 1977), these perspectives have mainly depicted the development of firm-specific resources and capabilities as an incremental intra-firm process as the firms learn in foreign locations. Especially, Nordic scholars have conceptualized the international firm as a “learning organization characterized by bounded rationality and limited knowledge” (Björkman and Forsgren, 2000: 7). Consequently, much of the traditional IB literature seems to suggest that the firm’s initial international development is dominated by exploitation and replication of existing resources and capabilities within different geographic locations, seen as a key mechanism for firm growth internationally (see also Kilpinen, Pauku, Salonen and Gabrielsson, 2009).

The more recent literature on multinational companies or global industries has also identified organizational capabilities as key in determining performance and strategy in global markets (Tallman and Fladmoe-Lindquist, 2002; Luo 2000; 2002). In this more contemporary work, the models relying on exploitation and replication of firm-specific

advantages have been replaced by dynamic processes in which the multinational firm's subsidiary network contributes to the development and upgrading of its original advantages (Forsgren, 2008). Therefore, although the firm advantages may have originally been linked to its home country, the further development of these advantages is drawn from and influenced by the multiple environments where it operates (Forsgren, 2008). Therefore, this more recent literature (e.g. Tallman and Fladmoe-Lindquist, 2002; Luo, 2002) has focused not only on leveraging or exploiting existing firm capabilities but also on building new capabilities, in line with the recent dynamic capabilities literature.

The accumulation and acquisition of new resources and capabilities have been raised as being particularly relevant in the case of born-global firms or latecomer MNCs (Knight and Cavusgil, 2004; Mathews and Zander, 2007; Sapienza *et al.*, 2006). Mathews and Zander (2007) claim that most of the existing frameworks and models do not capture the behavior of these 'new species' of global firms that do not seek to exploit home-based advantages, but to gain access to resources and capabilities through their international operations, including the "ability to draw competitive advantage from external networks and inter-firm relationships rather than from internalized resources, skills and knowledge" (2007: 399). They suggest that literature on international new ventures or born-globals, as well as on latecomer or newcomer MNCs, suggests that their origins, growth, organizational forms, and strategies differ from the traditional and resource-rich MNCs represented by most frameworks and models. These authors also note that these characteristics and behavior, such as outsourcing of critical resources or accelerated internationalization, demonstrate fundamental differences compared with the lengthy and sequential learning process of the incremental internationalization theories in the establishment of competitive of advantage. Instead, literature suggests that these firms "begin with a global view of their markets, and develop the capabilities needed to achieve their international goals at or near the firm's founding" (Knight and Cavusgil, 2004: 125) or move globally to acquire new resources and capabilities from the early stages (Mathews and Zander, 2007). Moreover, as pointed out by Mathews and Zander (2007), the existing frameworks, due to limited dynamic content, have been insufficient in explaining the transformation of competitive advantages during the internationalization process. These recent views challenge not only the exploitation and replication logic but also the necessity to build an established home market position in the internationalization process (Rugman and Verbeke, 2004).

As part of the research project that relates to this study¹⁰, Kilpinen *et al.* (2009) found differences in capabilities through which a firm internationalizes and those by which it globalizes, including those by which it copes with industry globalization as an outcome of the different roles that the internal and external selection environments of the firm play in the process of firm internationalization and globalization. They found three different logics in capability development, namely that ‘internationalization logic’ involves exploiting, replicating and incrementally developing firm capabilities as the firm expands internationally. The process of firm globalization, or strategy of ‘global integration’ involves a logic of integrating and reconfiguring firm capabilities on a global basis. The ‘dynamic capability logic’ involves not only modifying the firm’s internal capability base but also exploiting external capability networks in order to achieve a better fit with the competitive, changing environment. Moreover, when investigating capability dynamics within a specific market context, Kilpinen and Pauku (2011) found multiple, equifinal paths in capability development as the firms responded to changes in a key market, suggesting that the geographic expansion of the multinational firm may either be categorized as a routine activity or as a non-routine activity that relies on a high level of dynamic capabilities (Helfat and Winter, 2011) depending on the external market context.

Similarly, research undertaken by Cantwell (1989) and Cantwell and Piscitello (2000) on technology accumulation within MNCs found that during firm expansion into new product or geographic markets, firms first exploit their existing potential for growth, manifested in the form of existing competences and resources. While firms internationalize their markets in order to exploit their competences, the internationalization of R&D activities is related to adaptation to local conditions or establishment of new local industries rather than to creating new capabilities (Cantwell, 1989). Second, multinational firms establish a system for the creation of new competences that involves both learning and experimentation. At this stage, in order to consolidate their capabilities multinational firms extend and leverage their capabilities within related fields of activity or across different geographical locations, taking advantage of the variety in sources of learning within different institutional settings. Finally, their research found that multinational firms employ both internationalization and diversification in order to spread the resource and capability base of the firm, form internationally integrated networks and source new resources and capabilities from different geographical locations.

¹⁰ Please see the introductory part on research process

2.2.2 Evolution and the MNC

As pointed out by Westney and Zaheer (2009) many models of MNCs have an evolutionary character although those models that explicitly incorporate an evolutionary perspective are only few (Westney, 2009). Evolutionary theory of the MNC by Kogut (1997) and Kogut and Zander (1993) provides perhaps the most comprehensive view on multinational firm development, conceptualizing the multinational network as an organizational evolution as it responds to a diversity of national contexts and the uncertainty of the environment. According to this perspective it is the dynamic processes of capability development and transfer that underpin the creation and development of firm-specific advantages and consequently explains the existence and behavior of the multinational firm (see Forsgren, 2008, for a review on the different MNC theories).

The evolutionary theory of the multinational firm emphasizes the possession of superior capabilities and knowledge, including the ability to develop new knowledge through experiential learning and to transfer it across borders faster than competitors are able to imitate, as the main source of growth and competitive advantage in international markets (Kogut, 1997; Kogut and Zander, 1993; Zander and Kogut, 1995). Like former perspectives, this theory regards the firm's country of origin as determinantal to its capabilities and relates the accumulation of organizing principles to the firm's national origins. This theory also portrays international development of an MNC as a sequential process where a firm first exploits its current knowledge for expansion into new geographic markets, the initial entry serving as the platform that recombines the knowledge acquired in its home market with the incremental learning in the foreign market. In the final stage of this sequential process, "the learning in the foreign market is transferred internationally and influences the accumulation and recombination of knowledge throughout the network on subsidiaries, including the home market" (Kogut and Zander, 1993: 523). This process, as these authors claim, alters the global knowledge of the firm as it transforms the network of subsidiaries through cross-border transfer of learning.

Westney and Zaheer (2009) suggest that in the context of the MNC, internal selection forces result from internationalization, and relate to the increasing scale, complexity and diversity, as well as to the need to coordinate activities, resources and capabilities across various subunits. Similarly, other scholars within international business have highlighted those activities of the MNC that relate to its ability to coordinate resource deployments to exploit interdependencies and complementarities across its

businesses and value chain activities globally (Luo, 2002; Roth, 1992), as well as to its ability to accumulate, transfer and integrate knowledge, resources and capabilities across the dispersed organizational units (Nohria and Ghoshal, 1994; 1997) or to use the subsidiary network as a competence creating force (Cantwell and Narula, 2001; Cantwell and Mudambi, 2005). The current perspectives, viewing the MNC as a coordinated system of cross-border value-creating activities (Dunning and Lundan, 2008; Cantwell *et al.*, 2010), emphasize not only internal transfer, but also the ability of the firm to transfer knowledge and capabilities to its coordinated network. For MNCs, Dunning and Lundan (2010) point out that successful transfer requires the ability to codify knowledge and routines to make them transferable within the firm, a process likely to increase the transparency of firm capabilities, to the point where they will also become transferable to other firms (either intentionally or by imitation). Therefore, similar to the case of technology transfer, there are likely to be spillover effects that are a consequence of the efforts undertaken by MNCs to make best practices transferable within the firm and to their local partners, such as suppliers and distributors (Cantwell *et al.*, 2010). The more market-based transactions are used in the firm's system of value adding activities, the more likely is the diffusion to other firms (Dunning and Lundan, 2010). Consequently, MNCs are likely to impact the evolution of other firms within their coordinated network and be impacted by these other firms as well.

Westney (2009) has portrayed the multinational firm not only as being part of a larger evolutionary system or several evolutionary systems, but also as an evolutionary system itself with multiple evolutionary subsystems and selection regimes (referring to the selection criteria, outcomes, agents and targets). Subsequently, a key concern in MNC management has become the alignment of the evolutionary processes of the corporate system and the three subsystems, namely geography, business, and function that may result in different patterns at different points in time. She argues that by altering the evolutionary processes within the MNE, its managers can better cope with changes in the external environment. Moreover, as Westney (2009) points out, it is this idea of multiple interacting evolutionary processes that impact each other that constitutes the co-evolutionary process within the MNC context. Moreover, she argues that portraying the MNE in terms of an "evolutionary system and subsystems that co-evolve in interaction with each other, as well as within their differentiated environments" (2009:133) provides a means to address and deal with the complexity of the MNC context.

2.2.3 Co-evolution between the MNC and Its Environment

In line with the co-evolutionary perspective discussed earlier, recent research on MNCs has also emphasized the co-evolutionary processes between the MNC and its environment (Cantwell *et al.*, 2008; 2010; Madhok and Liu, 2006) suggesting that while organizations often adapt to their environments, they also impact the 'selection rules' and alter the environment in line with their needs. This research maintains that underlying this co-evolutionary process is the interplay between the local contexts, subsidiary capabilities and trajectories, and headquarters influence, e.g., the mandates granted to the subsidiary. According to this research, subsidiaries both create variation in the local environment, as well as absorb the successful variation from other parts of the MNC network. Madhok and Liu (2006) suggest that the local environment also generates direct selection pressures and the evolution is often faster at subsidiaries than at higher levels of the organization due to fewer complexities at the subunit rather than at the overall system level. Furthermore, these scholars argue that those MNCs that are able to direct the macro-evolutionary process, both by anticipating environmental selection forces as well as through managerial adaptation, will tend to create organizational structures and processes that allow subsidiaries to fit better into their environment. They also point out that when internal microevolution is faster than macroevolution, the MNC is more likely to shape the environment than being shaped by it, e.g., internal selection may outpace external selection if the MNC transfers a unique capability to a subsidiary that gives it a competitive edge over its local competitors.

The emerging perspectives (Dunning and Lundan, 2010; Cantwell *et al.*, 2010) also argue that a critical driving force in the co-evolution process is how MNCs adjust their strategies and structures to counter uncertainty, complexity and changes in their environment. Cantwell *et al.* (2010) suggest that MNCs are the entities that are the most directly affected by the increasing uncertainty and complexity in their environment. However, they also suggest, because these firms engage in constant experimentation and search across borders, they have a higher propensity to innovate solutions to encounter such an environment. These authors claim that the MNC responds to the increasing uncertainty through the development of both new institutions and open network structures, motivated by rising interconnections between various geographic markets and the growing amount of market-based transactions. They also contend that the flexibility provided by the open network structure has then enabled the MNC and its affiliates to better address changes in the external environment as well as to

engage in multiple cross-border experiments, but also forced them to formalize new practices into transferable routines likely to generate spill-over effects at a larger scale. Similarly, Siggelkow and Rivkin (2005) propose that rapid technological change, deregulation, and intensified competition have led to more modular organizational forms. They also suggest that information technologies, by standardizing interfaces, have enabled managers to conduct more transactions across organizational boundaries, which is likely to enhance the diffusion of capabilities across organizational boundaries and impact co-evolution.

Cantwell *et al.* (2010) argue that MNCs are in the position to shape the environment, both through their innovative activities as well as through diffusion of new capabilities at the extended enterprise level. These authors also suggest that in contexts of complex technological and institutional change, the strategic focus of MNCs is increasingly shifting to the evolutionary processes by which they can respond to and influence changes in the environment, e.g., the institutional setting in which they operate. However, their research also suggests that both embeddedness and agency, and periods of inertia and change, are likely to characterize the behavior of MNCs (Cantwell *et al.*, 2008). Thus different forms of behavior are not mutually exclusive, and the “MNCs are likely to exhibit both adaptation and co-evolution with institutions in different home and host countries, in different industrial sectors and at different points in time” (Cantwell *et al.*, 2010: 577). Likewise, Westney and Zaheer (2009) attribute the external selection pressures to two distinct levels of analysis: that of the multiple country environments that incorporates the selection mechanisms both in the home and host countries, as well as that of the global ‘meta-environment’, the selection mechanisms of which operate either at the industry or the supra-national institutional level.

Consistent with the co-evolution logic, recent works within dynamic capabilities research explicitly argue that MNCs exist because of the efforts to create and capture value through organizational designs that leverage capabilities, co-create cross-border markets and shape eco-systems (Pitelis and Teece, 2010; Teece, 2009). These views perceive MNCs as instruments that integrate globally dispersed assets and participate in ‘eco-system’ engineering on a global scale in order to achieve complementarities both horizontally and vertically. This view also holds that the role of the MNC has evolved from that of a ‘system-integrators’ within a specific sector, region or nation, to that of an ‘orchestrator’ in the global value creation process (Pitelis and Teece, 2010).

To summarize, in the context of the modern MNC, the evolutionary and co-evolutionary processes involve those activities of the MNC by which it

generates variety in the environment, and engages in selection, retention and cross-border diffusion of certain routines and capabilities. This process involves the practices and capabilities that are both developed by the MNC parent or the affiliates, and includes both locally embedded capabilities as well as those that are mobile across borders, and transferred within the MNC network of subsidiaries or to the external network. They also involve those co-evolutionary activities by which the MNC creates variation by responding to uncertainties and complexities in the environment through experimental search and by creating new institutions and organizational forms to modify the external selection criteria (Dunning and Lundan, 2010). Alternatively, they might involve the activities the MNC undertakes to orchestrate assets or to shape ecosystems to create value on global basis (Teece, 2009; Pitelis and Teece, 2010). So, in addition to international business research emphasizing exploitation as well as selection and retention, involving transfer and redeployment of the firm's routines and capabilities from one geographic location to another, and their coordination within the MNC network, the recent research has come to emphasize exploration and those specificities of the MNC that enable it to create variation in the environment and shape the external environment, including the eco-systems within.

2.2.4 Summary and Research Problematization

Despite the growing attention on organizational capabilities within international business (IB) as well as the prominent works discussed above, the following characteristics of current research on capability development within MNCs offer opportunities to problematize and refine current perspectives.

First, although the dynamic nature of capability development within MNCs has been recognized in IB literature (e.g. Cantwell, 1989; Cantwell and Piscitello, 2000; Tallman and Fladmoe-Lindquist, 2002; Luo, 2000; 2002), the current literature is still limited in recognizing multiple, equifinal paths in capability development or potential non-linear capability trajectories. With regards to the various types of development and change (Van de Ven and Poole, 1995) discussed earlier, the above literature review indicates that many of the international business theories are implicitly based on a life cycle model, adopting a developmental view assuming that organizations change gradually or in stages, and resulting in an evolutionary process at industry level. Consequently, it has been claimed (e.g. Teece, 2009) that traditional international business theories have been incomplete in specifying the sources of firm-specific advantages or the

mechanisms by which multinational firms sustain or renew these advantages.

The inclination to view capability development as an intra-firm activity and as a rather unilinear process of capability accumulation and building seems to result from the tendency to neglect the role of the external environment or the tendency to draw a distinct line between the firm and its external environment (see Forsgren, 2008, for a review). On the one hand, Aharoni (2011) suggests that MNC theories have either treated firms as black boxes, or environments have been treated as independent of the firms. On the other hand, Faria contends that current research has failed to acknowledge “the power and influence of the global supra-network, led mainly by transnational corporations, within and outside the ‘networks’ of firms” (2004:212). Despite the emerging perspectives that recognize the role of MNCs in shaping the environment (e.g. Cantwell *et al.*, 2010), this research has focused on the institutional environment, i.e., how MNCs transform the environment through institutional and organizational innovation, while research on how MNCs shape the environment through the innovation and diffusion of new products, services and business models has been limited. Therefore, it seems that research has, to some extent, failed to cope with changes in the operating environment and ignored the changing reality in the global environment, and the subsequent impact of the external environment on the firm’s internal processes. Related to this, there seems to be an insufficient understanding of the factors that condition the MNCs ability to respond to or influence changes in the environment. The tendency to neglect the role of the external environment seems also to be an outcome of insufficient amount of empirical contributions, a gap that this thesis’s contribution seeks to address.

As the above discussion reveals, the complexity and heterogeneity of the MNC context, on the one hand, and the power of these firms on the other, seems to call for further theory development on capability development. In order to be able to contribute to existing research, I will put forward in-depth case studies on three multinational firms. This data will be addressed by taking capabilities as units of analysis and by examining how external conditions and events interact with firm action to produce different patterns in capability development. By taking a stance that does not assume a predetermined order of developmental sequences, I seek to provide a better understanding of the behavior of multinational firms and the capability dynamics within.

3. The Development of the Theoretical Approach

As the introductory part sought to elucidate, the objective of the study is to examine the capability-related processes within MNCs, and in particular the dynamic interactions between firm capabilities and the internal and external selection environments of the firm. Consequently, capability development is investigated as a phenomenon that interacts in a dynamic way with various contextual factors in the internal and external environment of the firm, and as a change process involving a sequence of events that unfold over time. As stated earlier, the main research question of the study is: *How are capabilities developed within MNCs?* This research question is approached by identifying the processes and mechanisms underlying capability development within MNCs, as well as by addressing the impact of the context, i.e., MNC environment and globalization on capability dynamics. The objective is to gain access to various patterns and processes of capability development, as well as to unravel the underlying mechanisms.

First, in order to access the mechanisms underlying patterning in capability development, context-mechanisms-outcome (CMO)-analysis (Pawson and Tilley, 1997, Figure 5) will be applied. CMO-analysis incorporates capability outcomes with the various mechanisms and contexts (internal and external) involved. Constructing the CMO-configurations also serves to illuminate the various component parts of the mechanisms under investigation (Pajunen, 2008). Second, this section will illustrate the scope of the study (see Figure 6). This illustration serves to depict both the simultaneous and sequential organizational activities and contextual forces across multiple levels, in order to illuminate the co-evolutionary processes and to construct a more holistic picture of capability dynamics than those offered by much of existing literature. Finally, this section will discuss the impact of the MNC context and globalization on the external and internal

selection environments of the firm, and consequently on capability dynamics.

3.1 CMO-analysis and Scope of the Study

First, CMO-analysis (see Figure 5) will work towards unraveling the processes as well as to illustrate how these processes are influenced by and operate in conjunction with external contingencies to produce certain events. CMO-configurations are derived from the realist formula *outcome = mechanism + context*, building on the realist assumption that “causal outcomes follow from mechanisms acting in contexts” (Pawson and Tilley, 1997: 58). This analysis involves identifying both the processes and the contingencies, or the mechanisms that lead to observable outcomes in the form of a single event or a regularity. The explanation takes the form of putting forward an underlying mechanism (M), which generates the outcome (O), and specifying how the interaction between structure and agency has generated the outcome. This also involves investigating how such mechanisms are contingent and conditional, and thus only activated in a particular context (C) (Pawson and Tilley, 1997).

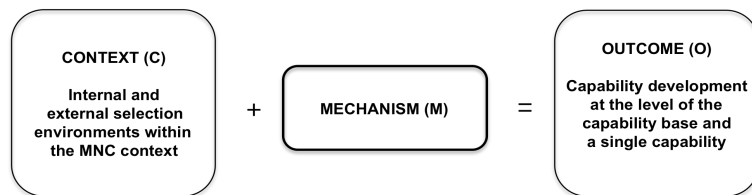


Figure 5. CMO-analysis, Adapted from Pawson and Tilley, 1997

Second, I seek to identify the key determinants and selection mechanisms within the internal and external environments of the firm, including their co-evolution. I will do so by providing a detailed account of key events or sequences of individual and collective events, actions and activities that relate to capability development at industry, firm and manager level (see Figure 6). Displaying the key determinants in temporal sequences enables capturing the interplay between them over time in order to identify co-evolutionary effects.

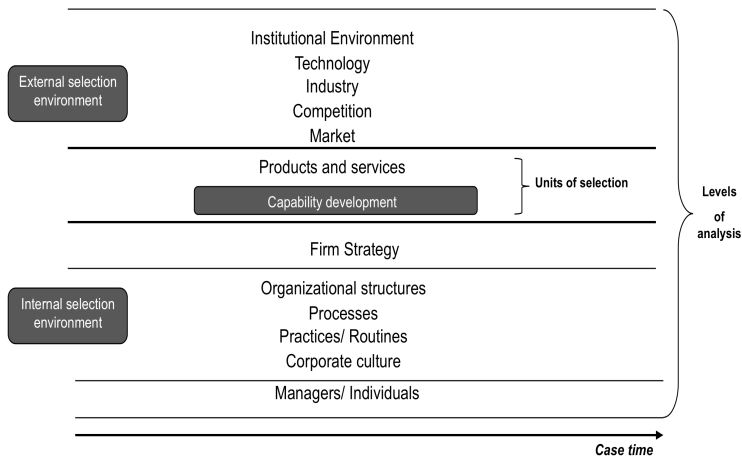


Figure 6. The Scope of the Study

Within the evolutionary perspective, three different units of analysis have mainly been applied (Aldrich and Ruef, 2006: 28): 1) routines and competencies within organizations, 2) organizations as a whole, or 3) entire organizational populations or communities. Following Henderson and Stern (2004) I assume that the external selection does not always equate with organizational failure and that partial selection of certain capabilities within an organization is more likely than full selection of entire organizations, and consequently I take capabilities rather than organizational units or organizations as units of analysis.

Some scholars have also suggested focusing on complementary sets of routines or capabilities, rather than taking individual capabilities in isolation (Levinthal, 1991), because routines and competencies are often tightly coupled at the organizational level. This is supported by prior research that has identified different capability development paths depending on whether the unit of analysis is individual capability, the firm's capability base or the firm's entire capability constellation (Laamanen and Wallin, 2009). Likewise, the idea of multi-level selection (Murmman *et al.*, 2003) implies that the level of 'fitness' is determined upon a larger unit than the immediate one within which the routine or capability resides. This entails that the effectiveness of a particular capability is affected by other capabilities and therefore, selection of a particular capability may be based on the fit with surrounding routines and capabilities. Multilevel selection involving selection at the group level in addition to selection at an individual level affects, e.g., internal resource allocation within organizations that has an impact on capability development (Murmman *et al.*, 2003; Zollo and Winter, 2002). Therefore, the approach that I adopt is

that in addition to investigating capabilities individually, they should also be investigated as constituents of the firm's resource and capability base.

In addition to assuming partial selection as the dominant selection outcome, this study assumes that capabilities are often indirectly selected through the selection of specific products or services that are likely to serve as units of selection. Thus, the direct effect of external selection occurs at the level of products and services with an indirect effect on the underlying capabilities and routines. Likewise, while the target of selection at firm level is not only end products or services but also the internal routines and processes that can best facilitate microevolution (Madhok and Liu, 2006), these routines and processes become manifest in the products, services and organizational forms put in the market place. Therefore, capabilities as well as products and services in which they are embodied serve as units of selection as illustrated in Figure 6.

Within this study, the internal selection environment encompasses both the organizing principles of the firm, including its organizational structure, processes, practices and routines, and its corporate culture, including the interests, values and norms present in the organization. These factors are considered as factors that underlie and impact managerial decision-making and internal politics, and consequently either facilitate or inhibit capability development within the firm. Moreover, the dynamic capabilities¹¹, embedded in organizational structures, processes, routines and individuals are assumed to act as important determinants on capability development as they govern the rate of change of the other capabilities of the firm (Helfat *et al.*, 2007; Winter, 2003). Finally, this study postulates that much of the selection criteria are also embedded in, and influenced by the external environment. Within this study, the external environment is defined broadly, assuming that external selection criteria are embedded in, and may originate from the institutional-, technological-, competitive or market environment of the firm.

3.2 Processes and Mechanisms Underlying Capability Development

Having found patterns in the capability dynamics I aim at unraveling the underlying mechanisms that shape patterning in the observed processes (Pettigrew, 1997). Pettigrew (1997) has suggested that these mechanisms may be directly observable, intentional actions undertaken by the key

¹¹ As the dynamic capabilities of the firm are assumed to be embedded in its structures, processes, routines and individuals they do not figure as a separate layer in Figure 6

actors, or they may be contextual factors or driven by interactions between different levels of the context and the process. As an outcome, he claims, these processes may be either linear, directional and cumulative, or discontinuous, open ended and transformational, and therefore the researcher has to search for more holistic explanations than those that are simply linear or singular. As the purpose is to understand the underlying logics in the process of change, Pettigrew (1990) has suggested that data on events needs to be complemented with interpretations of patterns in those events, and with logics that may explain the chronological sequences.

Mechanisms have been claimed to indicate the way in which a structure is activated and provide a deeper explanation of how internal contexts or relations work (Harrison and Easton, 2004). Accordingly, Pawson and Tilley (1997) suggest that mechanisms should 1) reflect the embeddedness of the intervention within the stratified nature of reality, 2) provide an account for both the micro and macro processes as constituents of the intervention, as well as 3) demonstrate how outputs result from the choices (reasoning) combined with the capacity (e.g. resources). Within social investigation, mechanisms thus refer to the choices and capacities, which lead to a certain pattern of behavior (Pawson and Tilley, 1997).

Finally, Pajunen (2008) claims that explanation should unravel how the mechanism was activated and the specific outcome or phenomenon produced, suggesting that it is the entities and activities that form the component parts of the mechanisms, and the combination or configuration of the components activates the mechanism that produces the outcome. Moreover, he argues that explanation needs to consider the hierarchical structure of the mechanisms: at a higher level it is the mechanism that determines how the outcomes are produced, whereas at a lower level it is the operation and combination of the constituent parts that determine how the mechanism is activated and outcome produced within the particular case and its context (Pajunen, 2008). These mechanisms-based explanations do not represent organizational mechanisms *per se*, but are rather more abstract models of mechanisms operative in organizational processes, comparable between cases. Decomposing mechanisms into their component parts also illustrates the interplay between internal and external selection, in line with the co-evolution logic.

3.3 The Impact of the MNC Context and Globalization on Capability Development

Finally, I investigate the impact of the MNC environment, including globalization, on capability dynamics. In doing so I seek to provide contextualized research, linking capability development and organizational change to the MNC context and the globalization phenomenon. The purpose is to further extend extant research by putting forward mechanisms underlying the different capability paths within the MNC context. This study postulates that capability dynamics is affected by activities and processes both at the headquarters level and within its network of subsidiaries. Accordingly, the macroevolution of the external environment encompasses both events and processes at global, or supranational, level as well as the country level, and the microevolution of the internal environment includes events, activities and processes at the headquarters and among the MNC's subsidiaries.

To identify the impact of globalization, as discussed earlier, this study subscribes to Tallman and Fladmoe-Lindquist's definitions in that firm internationalization refers to a process of international expansion with a "strategy of greater presence in international locations" (2002: 123), and firm globalization to a process of global integration, and a "strategy of consolidating international markets and operations into a single worldwide strategic entity" (2002: 123). The global stage, alternatively, refers to a stage where the emphasis of the MNC is to dynamically operate and manage an established "network of differentiated but integrated subsidiaries, affiliates, alliances and associations" (2002: 124). These phases seem to provide relevant points of reference in order to investigate the impact of firm globalization on capability development at organizational level, including the underlying mechanisms.

As opposed to firm globalization described above and as explicated earlier, I consider globalization as a macro-level phenomenon to not only act as an external evolutionary (and co-evolutionary) force but also to affect the interdependencies between events and processes, and represent a progress from a lower, simple state to a higher, more complex one. Following Simon (1969) and Levinthal, complexity is seen as a "function of the degree of interrelationships among parts of a system" (2002:376) and a complex business environment as one that is tightly coupled and where activities in one market affect those in another. Another property of complex, non-linear systems is that the relationship between cause and effect may be proportional, i.e., a small cause may have a significant effect or vice versa (Bettis and Prahalad, 1986).

Finally, Faria (2004) contends that the global supra-network, led by transnational corporations within and outside the 'networks' of firms, embody power and influence that should be accounted for within academic research. Reasoning on the stratified nature of reality¹², I assume that MNCs are endowed with causal powers that reside in the domain of 'real' as tendencies and that MNCs, by controlling for certain activities, create such conditions that translate tendencies into desirable outcomes. I seek to understand how MNCs construct and perform those mechanisms, and how they impact capability dynamics within MNCs. In the case of the present study, this analysis involves building explanations about why and how the research objects (MNCs) having structures (network of affiliates and associates) and necessarily possessing causal powers (to build new capabilities or modify existing capabilities by means of dynamic capabilities) and liabilities (complexity of the environment internal and external to the firm) will under specific conditions produce a specific capability outcome, and alternatively under other conditions produce another capability outcome.

¹² The ontological assumptions that underlie this view will be discussed in the next chapter.

4. Methodology

4.1 Research Approach

As discussed in the previous section, I approach capability development as a phenomenon that interacts in a dynamic way with various contextual factors in the internal and external environment of the firm, and as a change process involving a sequence of events that unfold over time. My objective with this explanatory study is to specify the processes and mechanisms underlying the researched phenomenon (capability development), as well as to integrate the impact of the context (MNC environment and globalization). Consequently, the research phenomenon is inherently dynamic entailing both processual and evolutionary elements. Moreover, the underlying assumption is that both temporal and spatial factors at multiple levels simultaneously shape the phenomenon under study.

To support this dynamic and multi-level approach, I adopted process research and longitudinal case study as research methodology¹³. First, the case study methodology enabled to approach the research phenomenon holistically and to incorporate the context into the analysis. Second, process research methods enabled to approach the dynamics of the phenomenon and access the patterns of events and their underlying causal mechanisms across different levels of analysis. Moreover, this approach enabled to take into account different kind of effects, such as critical events, contextual factors, as well as underlying causal factors that influence the sequencing of events (Van de Ven and Poole, 2005). Another reason for adopting a longitudinal approach was the embeddedness of the researched phenomenon, and the potential asymmetry between levels of contexts,

¹³ Variance methods have been criticized for explaining change in terms of relationships among independent and dependent variables and consequently disregarding the dynamic nature of processes (see e.g. Van de Ven and Poole, 2005) or the complex, open and dynamic nature of the social world (Pawson and Tilley, 1997).

including the asymmetric micro/macro interdependencies likely to influence the phenomenon under study (Pettigrew *et al.*, 2001; Blazejevski, 2011).

The aforementioned approach was also justified from the critical realist paradigmatic assumptions adopted in the study¹⁴. First, a case study, by providing a holistic account, is in line with the ontology and epistemology of critical realism¹⁵ (Ackroyd, 2004). Easton (2010) suggests that a critical realist case study is well adapted to approach dynamic, complex phenomena, or to address research questions on causal mechanisms, or relations among the objects or entities that relate to the researched phenomenon. He argues that “critical realism is particularly well suited as a companion to case research” (2010:119). Second, process research accords with the critical realist retrodution logic, as it enables addressing various patterns of events and their underlying causal mechanisms that may operate on different time scales and span different levels of analysis or domains of reality. As critical realism is a fairly novel philosophical movement and may be unfamiliar to some of the readers, I will next provide a brief description of this philosophy of science. In what follows I will discuss some of the key ontological and epistemological assumptions and compare them with other dominant perspectives¹⁶.

4.1.1 Ontological and Epistemological Assumptions

In terms of ontology, critical realism shares the same perspective as positivism in that reality is considered to exist independently from our knowledge of it (objectivist view). However, critical realism rejects the determined empiricist ontology promoted by positivism, arguing that it ignores the complex mechanisms that connect different variables (Ackroyd, 2004). Instead of treating firms or other similar categories as ‘black boxes’, critical realism seeks to unravel the various mechanisms-context-outcome combinations underlying the phenomena under study.

¹⁴ This study follows mainly the realist and critical realist ideas introduced by Bhaskar (1975; 1979; 1998), Sayer (1992; 2002), as well as those who have applied these ideas to organization and management studies, e.g., Ackroyd and Fleetwood (2000), Fleetwood and Ackroyd (2004) and Tsoukas (1989 and 2000), or case research, e.g., Welch *et al.* (2011), Piekkari and Welch (eds, 2011), Easton (2000; 2010), and Harrison and Easton (2004).

¹⁵ In fact, recently the case study methodology has been increasingly associated with this paradigm (e.g. Easton, 2000; 2002; 2010; Tsoukas, 1989; Welch *et al.*, 2011) in addition to the more positivistic case study tradition (e.g. Eisenhardt, 1989; Yin, 2003).

¹⁶ The characteristics of critical realism are primarily discussed in comparison with positivism, as this philosophy of science largely dominates business research in general and international business research in particular (for elaboration see Piekkari *et al.*, 2009; Welch *et al.*, 2011; Piekkari and Welch (eds), 2011).

According to the critical realist paradigm, reality is 'stratified' and consists of three domains: the real, the actual and the empirical domain (Bhaskar, 1979; Sayer, 1992) and at the same time, 'emergent from' its constituents (Sayer, 2000). Causal mechanisms are considered to arise from the causal powers (or liabilities) inherent in objects, structures or entities that then become activated under specific conditions (Bhaskar, 1979). These causal powers reside in the real domain while the activation of these powers potentially gives rise to patterns of events in the actual domain, which then become experiences in the empirical domain (Sayer, 2000; Morais, 2011). However, these powers are regarded as 'tendencies' that may or may not be exercised, and even when exercised, may or may not actualize, e.g., when the effects are counteracted by other powers (Fleetwood, 2004). Moreover, these powers are considered to act transfactually, building on the assumption that causal powers or liabilities continue to exist even when they do not manifest themselves into outcomes at the level of events or observations (Fleetwood, 2004).

In terms of epistemology, there are more fundamental differences between critical realism and positivism, and critical realism has been said to "avoid[s] the traditional epistemological poles of positivism and relativism" (Pawson and Tilley, 1997:55). Whereas positivists argue for the existence of knowledge that is independent of our values and regard the production of knowledge as a collection of facts (objectivist view), the critical realists view knowledge as subjectivist and our access to the world as being conceptually mediated. Consequently, the production of knowledge is viewed as a social practice that relies on available theories, concepts, descriptions or discourses (Bhaskar, 1998; Sayer, 1992; 2004).

Figure 7 combines the ontological and epistemological assumptions underlying critical realism. As expressed in Figure 7, the empirical domain of reality is considered as both observable and subjective, consisting of the events that are observable by human senses as experiences in the empirical domain. The actual domain, alternatively, is viewed to consist of the objective but only partially observable events, including those events that are unobservable to human senses but that may become partially observable, e.g., through scientific methods or data analysis. Finally, the real domain is considered as both unobservable and objective, consisting of the causal mechanisms, i.e., the processes that exist independently from our knowledge and by which causal powers or liabilities act and generate events in the actual domain (Morais, 2011).

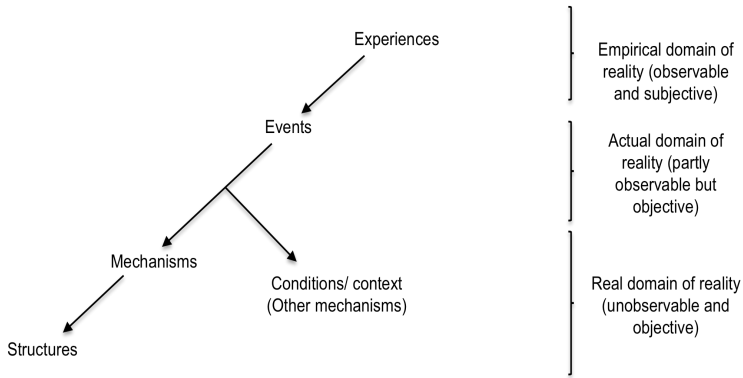


Figure 7. Three Domains of Reality and Retrodution Logic in Critical Realism. Source: Morais (2011: 68, Adapted from Sayer, 2000:15)

These ontological and epistemological assumptions have implications on views of causality, theorizing and generalization. As opposed to positivism, which searches for regularities between atomistic events, critical realists regard the regularity model of causation based on empirical observation as both deterministic and reductionist (e.g. Bhaskar, 1998). Instead of relating causal explanation to regularities, critical realists relate explanation to “transcendental”, i.e., unobservable causal mechanisms and treat causal processes as indication of causal powers whose outcomes depend on contextual factors (Sayer, 2004). Consequently, causal explanation relies on identifying not only the key events and the patterns amongst events, but also the causal mechanisms that underlie them and that are irreducible to events. As Figure 8 illustrates, these mechanisms reside in structures (S) and endow them with particular causal powers (p) and liabilities (l). Since the causal mechanisms are tendencies that may or may not actualize depending on contextual factors, the explanation needs to account for the conditions (c) under which causal mechanisms operate. These causal mechanisms are considered to endure even when they are not acting, and even when they act they may not generate events, because of the prevailing conditions or counteracting mechanisms, as expressed by Figure 8.

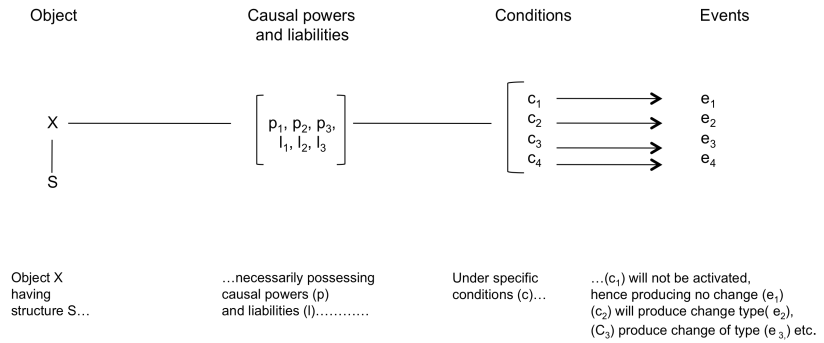


Figure 8. Critical Realist Causal Explanation, Sayer (1992)

The critical realist paradigm claims that there may also be differences of outcome that result from the context instead of the causal mechanisms involved (Ackroyd, 2004). Consequently, although agents may be endowed with causal powers that reside in the domain of ‘real’ as tendencies, it depends on the ability of the agents to create such conditions that translate these tendencies into specific outcomes (Tsoukas, 2000). Cause, then, is defined as the transformative potential of phenomena and therefore, understanding the liabilities and powers, as well as the contextual conditions, is key even in the absence of a causal relationship (Pawson and Tilley, 1997). According to the critical realist view there are a multitude of causal mechanisms, or causal configurations with particular tendencies, in operation that converge in a spatio-temporal context (Fleetwood, 2004) and give rise to emergent powers. Critical realism also distinguishes between two types of relationships, contingent and necessary. Contingently related entities may modify one another whereas necessarily related entities will cause changes in one another by necessity (Easton, 2010). Emergent powers are created when necessarily¹⁷ related entities or objects converge to form a structure (Tsoukas, 2000).

A critical realist causal explanation builds on the retroduction logic (Sayer, 2004) and stems from the ability to proceed from the experiences in the empirical domain into the causal mechanisms and structures in the real domain (see Figure 7). Within Figure 7, retroduction means moving down, across the different domains, or ontological levels of reality. In practice this signifies moving “retroductively from actor’s accounts of experiences in the empirical domain to the postulation of plausible structures of entities and respective causal mechanisms in the real domain” (Morais, 2011:77).

¹⁷ If the entities are contingently related, their powers are not modified (Tsoukas, 2000:30). Moreover, the contingently related conditions are not inert, but instead have their own causal powers and processes (Sayer, 1992).

However, this perspective holds that accounts provided by the social actors involved cannot be equated with reality since the causal structures and mechanisms may be unknown by these actors or their conceptions may be erroneous (Ackroyd and Fleetwood, 2000; Faria, 2004). Therefore, due to both the concept-dependency of social phenomena and double-hermeneutics in social science, the researcher needs to reconcile causal explanation with interpretive understanding (Sayer, 2004).

In terms of generalization, critical realist accounts rely on abstraction and retrodution, and rather than statistical generalization critical realists argue for transfactual generalization (Elger, 2010; Morais, 2011) and seek to unravel the causal mechanisms and their complex interaction. Likewise, Sayer (2004) distinguishes between generalization that determines how extensive certain phenomena are, and abstraction or retrodution that “explain what produces particular states and changes, but do not necessarily indicate their distribution, frequency and regularity” (Sayer, 2004:11). This also resonates with the idea of analytical generalization in case study research (Yin, 2009) that involves generalizing to theory rather than to populations as in quantitative research. Critical realist accounts are, by definition, explanatory, and the predictive capacity of a theory is regarded as unlikely because mechanisms operate in an open system (Ackroyd, 2004). Because explanation and prediction are considered as asymmetrical, the quality of a realist explanation relies on identifying causal mechanisms that govern events, instead of on the ability to predict events or patterns of events, shifting the focus from predictive to explanatory criteria for theory assessment (Lawson, 2004). Pawson and Tilley (1997) question even the possibility of generalization in social science because of continuous social change, and promotes specification within various contexts, rather than generalization as a key aspect of research.

Critical Realism and Capabilities

Critical realism has been argued to be better adapted than positivism to acknowledge human properties or capacities, as well as human tendencies that these capacities give rise to, such as learning, or collective achievements based on these capacities, e.g., institutions (Ackroyd, 2004). Critical realists also argue for the possibility of conceptualizing firms in terms of their competences, and regions as systems of competences, which are reproduced through human action (Lawson, 2004).

Following the ontological and epistemological assumptions discussed above, I also adopt a relational (critical realist assumption) in contrast to an

atomistic ontology (positivistic assumption) with regard to capabilities¹⁸. This perspective holds that a capacity, or capability, may be either active and to generate an action, or passive, as an object of change. A capacity is relational in the sense that an active capacity requires a passive capacity and action occurs when these two capacities meet, and there are no external inferences. In line with this holistic perspective, an individual is considered not to have the perfect capability, but instead, the capability of an individual is considered to be dependent on complementary capabilities. A capacity is also assumed to exist even when not activated and may also refer to a status, i.e., the ability to reject change and remain unchanged even when being subject to change. Capabilities are also regarded as capable of generating causes that may lead to a particular effect when activated (in line with Kakkuri-Knuuttila and Vaara, 2007).

Instead of viewing competencies or capabilities as fixed or given properties that reside within particular organizational members or units, and that can be utilized in various contexts, I perceive capabilities as being ‘enacted’ properties that are “constituted everyday in the ongoing and situated practices of the organizations’ members” (Orlikowski, 2002: 207) and organizations as structures that are reproduced by the actors within them (Ackroyd, 2004). According to Ackroyd (2004), collectivities (such as social groupings or organizations) are constantly reproduced and transformed through human action and consequently, collectivities, groups, institutions and organizations have properties that emerge from interaction, e.g., networks of firms may have emergent causal powers above and beyond those of simple aggregation (Easton, 2000) leading to “emergent properties that are more than, and different from, the sum of their constituent parts” (Easton, 2010: 121). Similarly, entering into new relations may provide actors with new powers that counteract or augment each other, as well as modify existing powers (Fleetwood, 2004).

Moreover, with this perspective I assume that capabilities or powers cannot be detached from their contexts, or rendered into measureable form (atomistic ontology). Instead, I assume that capabilities are both spatially and temporarily context dependent. This perspective also questions the possibility of identifying and transferring ‘best practices’ from one context to another (in line with Orlikowski, 2002, and Levinthal, 2002). With this approach I follow Levinthal’s (2002) claim that such a perspective disregards both external contingencies and internal relations, as well as his preoccupation about whether ‘best practices’ are separable from the set of organizational processes to which they belong.

¹⁸ This is also in line with Aristotelian philosophy (see Björklund, 2008), regarding capacities as characteristics that actualize according to a teleological plan.

In short, in line with a critical realist perspective, with this study I seek to provide a more holistic account on capability development within MNCs that recognizes the impact of the context¹⁹. Harrison and Easton suggest that the key challenge in applying the critical realist ontology has been “bridging the gaps between philosophy, epistemology and research methods” (2004:207). To address this challenge, recent literature has given guidelines on how to conduct empirical research, e.g., case research, in line with the critical realist paradigm (e.g. Ackroyd, 2004; Harrison and Easton, 2004; Easton, 2010; Welch, Piekkari, Plakoyinnaki, and Paavilainen-Mäntymäki, 2011). Critical realists reject variance methods, as they are considered to capture change only at the level of the empirical and actual domains of reality, without necessarily identifying the causal mechanisms that operate at the level of the real domain. Instead, critical realist studies aim at capturing the experiences, events and mechanisms at the different levels of reality, through a theory-grounded analysis on relationships between mechanisms, contexts, and outcomes (Elger, 2010; Morais, 2011). Towards this end, Harrison and Easton (2004) have proposed the context-mechanism-outcome (CMO)- analysis (Pawson and Tilley, 1997) as a way to operationalize critical realism in organization and management studies. This approach to analysis is also applied to this study, as explained earlier.

This approach is also in line with a research strategy labeled ‘contextualized explanation’ (Welch *et al.*, 2011:16) that seeks to reconcile contextualization with solid explanatory power. This mode builds on critical realist assumptions and regards causality as “a complex and dynamic set of interactions which are treated holistically” (Welch *et al.*, 2011:754) accounting for both history and process in developing a causal account. Inherent in this method of theorizing is the idea of ‘equifinality’ (Ragin, 1987) or multiplicity of causation, meaning that there are multiple causal pathways to the same outcome, i.e., different combinations of factors can lead to the same outcome. Within this study and in line with the aforementioned approach, I adopt process research and longitudinal case study as the research strategy that will be elaborated on next.

4.1.2 Longitudinal Multiple Case Study and Process Research

Within this study I undertook processual research by means of a longitudinal comparative case study. Van de Ven and Poole (2005) argue that process research requires methods, such as multiple case studies, that

¹⁹ Morais (2011) has suggested that in the pursuit of regularity and law-like generalization, research has abstracted itself from context, which has led to an undercontextualized simplification of reality.

can illustrate temporal linkages between events and identify temporal patterns, as well as account for multiple time scales present in a process. Piekkari, Welch and Paavilainen define case study as a research strategy that “examines, through a variety of data sources, a phenomenon in its naturalistic context, with the purpose of ‘confronting’ theory with the empirical world” (2009:569), while Easton defines case study as a “research method that involves investigating one or a small number of social entities or situations about which data is collected using multiple sources of data and developing a holistic description through an iterative research process” (2010: 119). A longitudinal case study, then, involves an examination of the case over a long period of time by investigating processes in context across multiple, interrelated levels of analysis in order to link patterns of events to analytical frameworks (Pettigrew, 1990; 1997). This, Pettigrew (1990; 1997) suggests, enables including multiple sources and links of causation and thereby to identify and explain patterns and their underlying mechanisms in the process. Moreover, he points out that when adopting a multiple case design, it also allows comparison of the characteristics of patterns, the underlying mechanisms and the outcomes between the different cases in order to develop more holistic explanations within and between cases.

Following Welch *et al.* (2011), my focus with the case study method was to examine, not only the causal mechanisms in operation, but also the contextual conditions²⁰ under which they work. Harrison and Easton (2004) suggest producing either ‘deep’ explanations across a single or narrow range of contexts, or ‘shallower’ explanations across a larger range of different contexts. Consequently, a case study may involve studying a similar context across cases to produce a detailed understanding of the deep structures, processes and underlying mechanisms involved, or it may incorporate different contexts, when the context is the key determinant in explaining how these processes lead to particular outcomes. Instead of embedding cases cross-sectionally or vertically, these authors suggest embedding cases temporally, where the sub-cases within each case consists of different temporal units. Within the present study, investigating context-mechanism-outcome (CMO) configurations across multiple cases and combining this analysis with periodization provided a means not only to ensure replication but also to explore the impact of a variety of contexts on outcomes in a systematic way both within and across cases, following Harrison and Easton (2004).

²⁰ Welch *et al.* define context as “the contingent conditions that in combination with a causal mechanism, produce an outcome” (2011: 741). Easton (2010) instead refers to context as ‘relevant circumstances’. He also claims that the difference between context and contingency is that the latter provides a more articulated and elaborate account of the former (2010:121).

Following the recommendations by Pettigrew (1990), my analysis drew on phenomena at both vertical and horizontal levels of analysis and the interplay between those levels over time, as illustrated by Figure 6 presented in the previous section. The vertical level indicated the interdependencies between the different levels of context, e.g., the impact of the macro-level context on the micro-level, such as organizational context and behavior, whereas the horizontal level indicated the temporal interconnectedness between phenomena. As the findings will indicate that this approach is well adapted to the study of co-evolutionary phenomena (Lewin and Volberda, 1999) as it enables incorporating both micro and macro levels of analysis, and investigating possible interactions between firm-level and the industry-level processes.

With the objective to understand the underlying logics in the processes of change, I used data on events, but I also included the interpretations that the interviewees gave of patterns in those events, and searched for logics that may explain the particular chronological sequences, following the recommendations by Pettigrew (1990). Moreover, in addition to identifying the patterns and underlying mechanisms involved, Pettigrew (1997) recommends linking these analyses to outcomes in order to have a focal point of investigation and to be able to understand how variations in context and process impact the observed outcomes across cases. This objective was achieved using the CMO-analysis, which links data on context and mechanisms to specific capability outcomes.

4.2 Research Design

4.2.1 Research Setting

As discussed earlier, this multiple case study was part of a multi-year project funded by the national agency for technology and innovations (TEKES) with the purpose to study the impact of globalization on firm competitiveness, focusing on leading technology- and knowledge-intensive companies in Finland. I acted as a full-time researcher in the project, which also involved a project leader and three other researchers with their respective focus areas. Having multiple researchers offered the opportunity to rapidly acquire data on the global context gathered across multiple case firms simultaneously before proceeding into the more specific research areas. This study, as part of the research project, benefited from negotiated access to the case firms, as well as from the motivation of the company representatives to participate and deliver data. After the end of the project, I

pursued a more focused study on capability development within the case firms.

4.2.2 Case Sample

The present multiple case study involved an intensive examination of a limited number of cases. Out of the five firms involved in the research project, four included global firms operating in technology intensive fields: Nokia, in the field of mobile phones, Wärtsilä, a global metal engineering firm, Kone, an elevator and escalator firm and Perlos an electromechanical component manufacturer. Iittala, a homeware and design company was part of the research project owing to the high level of knowledge intensity of its operations. Although operating in different industries, all five firms under study can be classified as being highly technology- and/or knowledge-intensive. Second, in all the firms there was evidence of recent business environment and/ or business strategy change as a response to the impact of globalization and they had some activity in or concern for capability development. Contextual analysis was performed for all of these case firms, and the impact of globalization on capability development and management was examined in the five firms. The examination was extended to a specific market context (China) for the firms that had operations in that specific market (Nokia, Kone, Wärtsilä and Perlos).

In order to determine the final case sample, I did not have a pre-determined idea on a prescribed number of cases (as recommended by Harrison and Easton, 2004). Instead, the nature of the researched phenomenon, the emphasis on context and the research questions determined the number of cases to be studied as the final sample. The five case firms initially studied differed as to the intensity of their capability development activities and/or the dynamism within their respective industries. The mobile phone and electromechanical component manufacturing industries were assessed as high-velocity (Eisenhardt and Martin, 2000), with unstable industry structures, fuzzy market boundaries, as well as non-linear and unpredictable changes. The shipbuilding, and elevator and escalator industries, in contrast, were defined as being moderately dynamic (Eisenhardt and Martin, 2000) with relatively stable industry structures and clear market boundaries, and where changes occurred frequently but along relatively predictable and linear paths. The homeware industry was clearly stable. Although all firms had activities in capability development, Nokia, Kone and Iittala had explicit processes in

capability development²¹ and these firms, although operating in different industries, had all identified design as a strategic capability that enabled the examination of a similar capability across different firms. As the development of design capability within the case companies was fairly recent, it was both information-rich and enabled setting boundaries to this development process. Based on this analysis, I selected these three firms (Nokia, Kone and Iittala) as the final case sample for more in-depth and temporally extensive examination on capability development. Therefore, while the initial case sample was determined by project access, further case selection was based on theoretical sampling and replication (Yin, 2003; Eisenhardt, 1989; Eisenhardt and Graebner, 2007), using criteria related to industry dynamism and intensity of design capability development, as indicated in Figure 9.

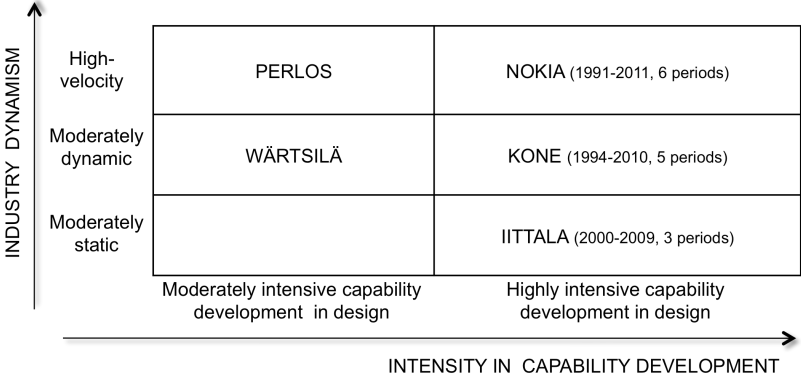


Figure 9. The Criteria for Case Selection

Consistent with critical realism, entities may be analyzed at different levels of aggregation (Easton, 2010). Within the three case firms, Nokia, Kone, and Iittala, the capability development process was first analyzed at the level of the capability base and subsequently narrowed to the level of a single capability for more fine-grained analysis. Design capability was chosen for this analysis as these three firms had identified it as a strategic capability that enabled investigating this particular capability across different firms. Moreover, as a fairly narrow capability it was feasible to collect the key events and activities with regards to this capability, and the key informants were both identifiable and available for interviews.

Within the final sample of three firms, Nokia served as the primary case because of the intensity of the phenomenon within the company. Moreover,

²¹ These included ‘capability strategies’ at Nokia, ‘must-win battles’ at Kone as well as the DDI-, UPL- and retail capability development process at Iittala.

owing to the significance of Nokia to the Finnish economy, the firm has received extensive amounts of public and press attention and consequently, a large number of public documents were available for the company, which included among others, a very extensive historical analysis²². Both the retrospective and real-time secondary data available for the company complemented the primary data acquired through negotiated access.

Despite the fact that various scholars point out that one case may be enough to produce an explanatory account on the research phenomenon, and to enable analytical generalization (e.g. Tsoukas, 1989; Siggelkow, 2002), a multiple case study has been argued to provide a stronger base for theory building (e.g. Yin, 2003; Eisenhardt, 1989; Eisenhardt and Graebner, 2007; Fletcher and Plakoyiannaki, 2011; Buck, 2011). Moreover, the rationale for adopting a multiple case study design was to be able to study the research phenomenon across a variety of contexts as well as to look for potential contrasting patterns within data or to specify variation in the main patterns. This approach also enabled to trace equifinal patterns, as "the typical case-oriented inquiry does not assume or even anticipate causal uniformity across positive cases. On the contrary, the usual expectation is that different combinations of causes may produce the same outcome" (Ragin, 1997:36).

Moreover, several scholars have advised against 'sampling on success'²³. As will be later discussed in more detail, the case time within each firm was divided into successive phases, following the recommendations by Langley (1999)²⁴ This diminished the potential bias caused by 'sampling of success' because the individual periods could be classified as 'success' and 'non-success', or as producing 'positive' or 'negative' outcomes. For example, during one of the case periods Nokia was faced with radical changes in the external environment and witnessed a loss of competitiveness, with negative outcomes. This was considered to further enrich the case sample as case research enables investigation of both positive and negative, or non-conforming, cases for the purpose of theory development (Ragin, 1997).

²² The historical documents included an in-depth study on Nokia history (975 pages) focusing on the period between late 1970s until 2002 based on interviews and unlimited access to documents in the Nokia's files performed by an academic researcher Martti Häikiö over a period of five years, as well as two other volumes by the same researcher

²³ The author would like to thank Jean-Francois Hennart and Udo Zander for raising this point during doctoral tutorials.

²⁴ According to Langley (1999), if the data can be decomposed to several phases that can be used as units of analysis for the internal replication, even one or two cases are sufficient for the purpose of theory generation.

4.2.3 Levels and Units of Analysis

Within each case firm the case time was sub-divided to temporal units in order to operationalize questions about 1) capability development, and 2) the impact of context (MNC/globalization) within the case firms. The temporal units are illustrated in Figure 10.

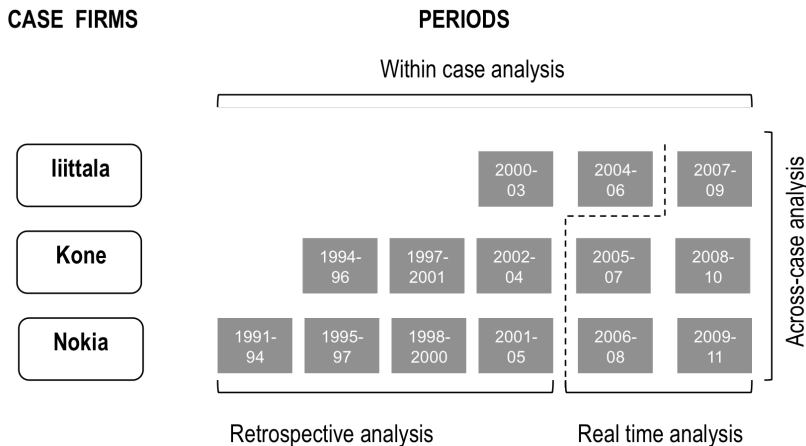


Figure 10. The Periodization Used for both Within- and Cross-case Analyses

First, to study the process of capability development, I constituted the temporal units out of periods involving relatively stable and linear patterns, whereas a discontinuity marked the beginning of a new period. This subdivision drew on the retrospective accounts and key events reported by the interviewees as well as secondary sources that traced the case histories and the characteristics of the context. Often these phases were demarcated by clearly identifiable transition events, such as a new strategy, change of the CEO etc. Consequently, and following Harrison and Easton (2004) multiple periods within a single case firm (Case1, Period1; Case1, Period2; Case1, Period3...) were analyzed in order to trace various mechanisms and the stability of these mechanisms over time, followed by cross-case analysis. Second, to study the impact of globalization, the division was based on context and involved the same period for all the case firms that corresponded to the time of the research project (2006-2009). At this stage, a single period was compared for multiple cases (Case1, Periodn; Case2, Periodn; Case3, Periodn...) This analysis provided a comparison of different CMO-configurations for the same period that represented various responses or capability outcomes to the impact of globalization at a certain period of time. This enabled tracking for the similarities and differences in patterns involving contexts, mechanisms and outcomes.

Finally, Figure 11 illustrates the various levels of analysis that were put forward in the previous section. This model served to depict the sequential and simultaneous organizational activities with the corresponding contextual and environmental factors at the multiple levels and periods under examination.

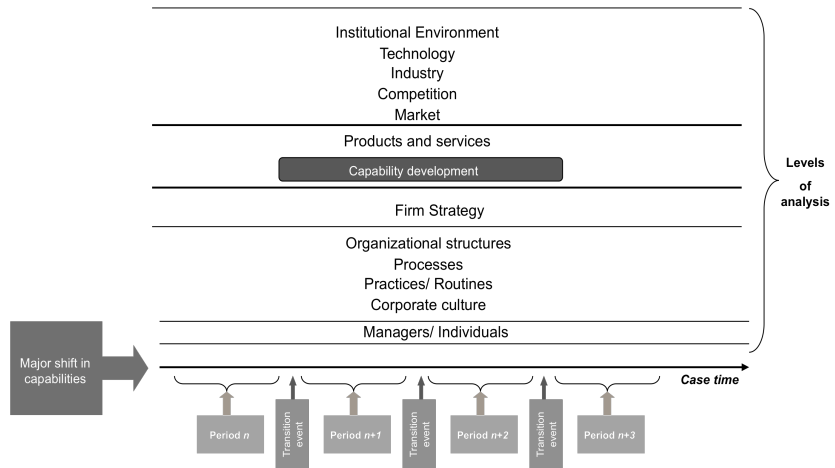


Figure 11. The Different Levels of Analysis

4.2.4 Case Time

Blazejevski (2011) identifies four different temporal dimensions within longitudinal case studies: case time, research time, temporal research perspective and temporal data perspective. Within this research, the beginning of the case time (i.e. period under analysis) was set at a major shift in firm strategy involving changes in its capabilities and consequently the case time varied per firm from 9 to 20 years. The analysis was extended up to 20 years when data and key informants were available to deliver reliable accounts of the past. The research time (the period during which data are gathered) included a period of four years. The research combined both retrospective and real time data (see Figure 10) and consequently, the research perspective was both simultaneous and *ex post*. The research design could be characterized as simultaneous/multiple shot-design (Blazejevski, 2011) as the case periods before, in between and after company visits were analyzed by using secondary sources.

4.3 Data Collection

Data collection was conducted over a period of four years. The first stage of data collection focused on analyzing the context and the global business environment, using both highly structured and detailed frameworks on the globalization drivers (market, cost, competitive and government) (Yip, 2003), industry structure and value chain analysis (Porter, 1980, 1985), as well as a semi-structured elaboration on firm strategies. At this stage the interview guide was constructed based on a preliminary literature review and a descriptive framework, rather than on one specific theory. Using interview guides that include several theoretical perspectives enables 'testing' different approaches by analyzing data using various theoretical lenses (Andersen and Kragh, 2011).

The latter phases were more theory driven and focused specifically on capability development by looking both at the overall patterns of capability development within the firms, as well as the impact of the MNC context and globalization on capability development. The empirical analysis sought to avoid conceptualizing the MNC as a 'unitary actor', and to incorporate a subsidiary and market context into the analysis and subsequently, interviews were conducted in China. Focusing on MNCs implies studies that are resource demanding and complex as they require multiple-level analysis across various units (Lervik, 2011) and often need to be limited in geographical scope. China was chosen as the specific market context owing to its influence in the global economy and its central role as a driver of globalization identified during the first round of interviews conducted within the case companies.

In order to examine the capability development process, data was first collected by organizing focus group discussions with key informants in the case firms, the number of informants varying between 4 and 8. In these discussions the researchers acted as facilitators to generate a discussion on a focused and predetermined topic with a prepared interview guide (Wibeck, Abrandt Dahlgren and Öberg, 2007). According to Wibeck *et al.* (2007), focus groups discussion is ideally supported by a clear introduction to establish a common ground and to ensure that the participants understand and accept the framing of the focus group discussion. In these specific focus group discussions this approach enabled a common understanding of the key constructs, such as resources, operational capabilities and dynamic capabilities, to emerge as they were explained to the participants and discussed jointly at the beginning of the focus group sessions. The rationale for choosing this research method was that a focus group discussion, similar to a workshop situation enables "an interactive

dialogue at a richer and higher level than is normally possible from data gathering with individual respondents” (Pettigrew, 1990: 279) and is likely to generate “rich data in which the participants explore the chosen issue in depth” (Wibeck *et al.*, 2007). Other benefits of focus groups as research methods have been associated with the use of group interaction to produce data and insights that would not be attained through individual interviews as the participants engage in a process of collective sense-making, learning and construction of knowledge by both activating prior knowledge and generating new knowledge (Wibeck *et al.*, 2007). Moreover, it allows doing so in a fairly limited amount of time (Morgan, 1997). Finally, the focus group approach enables resolving the possible discrepancies immediately rather than having to rely on the interpretation made by the researcher. This type of collective resolution, where the participants themselves probe and clarify each other’s assumptions has been argued to represent a key benefit of this particular research method (Evans and Kotchetkova, 2009). The fact that the focus group participants were constituted out of either top management team members (two firms) or strategy experts (1 firm) generated fairly homogenous groups that were used to working together, which helped to avoid problems that could result from unstable and unpredictable group dynamics (Farnsworth and Boon, 2010; Halkier, 2010; Wibeck *et al.*, 2007) as the participants were both able and willing to share their ideas in this particular group setting. The high quality of the focus group discussion was ensured by both the presence of knowledgeable informants, enable to view the research phenomena from diverse perspectives (Eisenhardt and Graebner, 2007) as well as by their willingness to engage in collective sense-making and learning. To complement the headquarters perspective, individual interviews related to the Chinese market context were conducted both at the headquarters and at the subsidiary level.

Finally, I conducted very focused interviews on capability development with key individuals and established an event chronology by performing an in-depth and temporarily extensive analysis for the three case firms that I had chosen as the final sample. This involved tracking key events and contextual factors by carefully analyzing secondary sources such as company histories, case studies, annual reports, company web pages, articles, and press releases. A chronology of the capability development process, including the transition points in the process was constructed based on this analysis and the interviews with the key individuals. While the analysis based on secondary sources provided rich data on key events, the retrospective reports from key informants served as the primary method for obtaining information about the interpretation of events, processes and

contextual factors in the processes of change. During the interviews key informants described the key events and processes grounded in their own experiences and language. This provided information about the interpretation of the events and processes including their antecedents. The interviews were semi-structured, in that each respondent had been provided with a list of key questions before the interview. These interviews were supplemented whenever possible with internal firm documents or other secondary material that related to the events or processes that the respondents were describing. The aforementioned approach is in line with critical realist research tradition that advocates collecting data through multiple collection techniques, and relying on retroduction logic and double hermeneutics when interpreting data (Easton, 2010).

The focus group discussion lasted 2-3 hours and the individual interviews 1-2 hours. All the interviews were transcribed verbatim²⁵. The table below summarizes the data collection stages, including the respective case firms, data sources and key informants in the final case sample²⁶.

²⁵ Most interviews were transcribed by a professional transcription agency, some by project members present in interviews.

²⁶ This table displays only the interviews that were conducted with the firms in the final case sample although all the interviews conducted during the research project contributed to the overall understanding of the research phenomenon.

Stage	Focus	Case firms	Data sources	Key informants
1 Nov06- Jan07	Analysis on the MNC context: globalization drivers, industry structure and value-chain analysis, firm strategies	Nokia, Kone, Iittala ²⁷	Semi-structured, individual interviews, secondary sources (12/17 in person)	17 top executives (CEO to director) selected by company representatives for their expertise
2 a) Nov07- June08	Capability development patterns during firm internationalization and globalization Identification of the impact of globalization on global capability development	Nokia, Kone, Iittala ²⁸	Semi-structured focus group interviews (3/3 focus group discussions in person)	19 informants involved in 3 focus group discussions: top management team (TMT) members (2 firms) or strategy experts (1 firm) at the HQ level
2 b) (Apr08)	Examination of the global capability development and management subject to a market context	Nokia and Kone: Headquarters and Chinese subsidiaries ²⁹	Semi-structured, individual interviews, secondary sources (5/5 in person)	5 informants: 1 informant at the HQ level, 4 informants at the subsidiary level (subsidiary top management, managing director to director)
3 (Jan08- Feb11)	Identification of the overall mechanisms and processes of capability development within the case firms and examination the development of a single strategic capability	Nokia, Kone, Iittala	Secondary sources, semi structured interviews (11/11 interviews in person)	11 informants (CEO to director), including an external industry expert

Table 2. The Data Collection Stages

4.4 Data Analysis

The key objective of process analysis is to generate patterns requiring explicit methods in order to build synthetic models out of complex, multilayered and temporarily embedded data (Langley, 1999). However, several characteristics of this type of data make it difficult to analyze and to theorize from, as pointed out by Langley (1999): First, it may be difficult to identify the sequences of ‘events’ that constitute appropriate conceptual entities. Secondly, it may be difficult to determine the boundaries between multiple levels and units of analysis. Thirdly, it may be difficult to interpret

²⁷ 14 additional interviews were conducted at Wärtsilä and Perlos but these firms were excluded from the final case sample.

²⁸ Three additional focus group discussions were conducted at Wärtsilä and Perlos, but excluded from the final sample.

²⁹ Five additional interviews were conducted at Wärtsilä and Perlos but excluded from the final sample.

the temporally embedded data because of the differences in retrospective vis-à-vis real-time data. Finally, it may be difficult to theorize from this type of complex data. Consequently, she proposes alternative but complementary generic approaches for the analysis of process data and generation of theory, namely narrative, quantification, alternate template, grounded theory, visual mapping, temporal bracketing and synthetic strategies. Whereas Langley characterizes the narrative and visual mapping approaches more as ‘organizing’ strategies, the temporal bracketing approach serves as a ‘replicating strategy’ for the purpose of theory generation. Within this study I used narratives and temporal bracketing (Langley, 1999) along with context-mechanism-outcome-analysis (Pawson and Tilley, 1997) as approaches in data analysis in order to generate the patterns and identify the mechanisms underlying capability development.

First, I used narratives to construct an analytical chronology for preliminary pattern recognition and subsequent analysis³⁰. In parallel, the event chronology was decomposed into successive periods for the purpose of temporal bracketing (Langley, 1999). Although this kind of decomposition does not presume any progressive developmental logic as advised by Langley, it enabled identification of comparable periods for further analysis. According to Langley (1999), this approach is particularly suitable for the study of non-linearity within organizational processes, and can incorporate both complex and multilayered data. The decomposition of data into successive periods also enabled an explicit examination of how actions in one period led to changes in the context that then affected action in the subsequent period etc. and was therefore particularly suitable for the analysis of co-evolutionary effects between the external environment and firm action.

Second, I constructed detailed CMO-configurations by incorporating the capability outcomes and various mechanisms and contexts (internal and external) involved. In line with Harrison and Easton (2004), the impact of the context was assumed to be dependent on the interaction of various contextual factors. Likewise, in line with their perspective, I considered the influence of each mechanism as dependent on a set of contextual factors in operation during that period. This resulted in multiple CMO- configurations for each company presented in a tabular format by period. Within the context of the present study this CMO- representation enabled identifying 1) to what extent the key events identified during data collection originated from the external or the internal selection environment of the firm; 2) what

³⁰ In the Nokia case, because of the large amount of key events, data were also visually mapped in order to allow for representation of different levels of context and the temporal sequences of events within these different levels simultaneously.

were the interdependencies between the external and internal events, and between the different levels of analysis; 3) the co-evolutionary dynamics, i.e., to what extent firm action preceded changes in the external environment and vice versa; and finally 4) the relative time lag between changes in the external environment and firm action, as an indication of the firm's ability to change, i.e., its dynamic capabilities. Constructing the CMO-configurations also served to identify the component parts of the various the mechanisms, following the recommendations by Pajunen (2008).

The following Figure 12 illustrates how this multiple case study evolved over time from the case as analytical chronology, to a diagnostic case, further to an interpretive/theoretical case and finally to a meta-level analysis across cases, and illustrates the respective data analysis approaches employed at various stages. The purpose of the 'analytical chronology' was to outline a narrative, across the different levels of analysis. Constructing narratives involves placing multi-level data into a 'spatial and temporal continuum' to form a 'story' that then lends itself to theory development (Mir, 2011). The 'diagnostic case' involved the focused CMO-configurations and served for preliminary pattern recognition by means of within-case analysis. The purpose of the 'interpretive/theoretical case' was CMO-configuration abstraction based on cross-case analysis of the focused CMO-configurations and narratives. At the final stage, the empirical findings, emergent concepts and theory were compared with extant literature for the purpose of extending theory by providing causal explanations, which corresponds to a kind of 'meta-analysis' as research output.

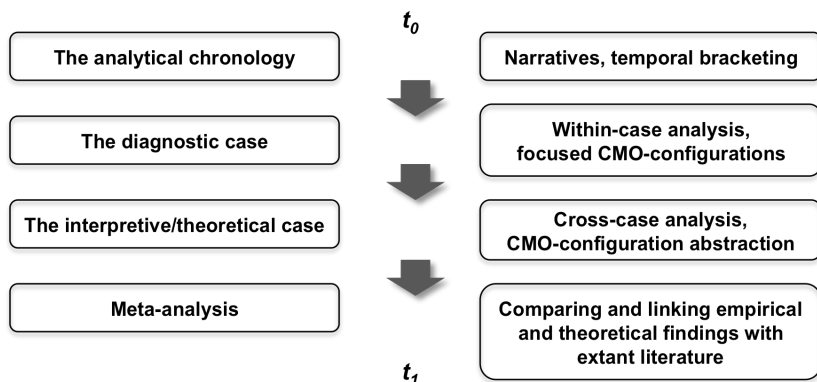


Figure 12. The Research Output from Longitudinal Comparative Case Study Research and the Respective Data Analysis Approaches Employed (Adapted from Pettigrew, 1990; Langley, 1999; Pawson and Tilley, 1997)

4.5 Theorizing from Case Evidence

In order to theorize from case evidence and process data, critical realists suggest to proceed through a process of retroduction and systemic theorizing, referring to a theoretically guided analysis on relationships among mechanisms, contexts, and outcomes (Elger, 2010; Morais, 2011) which, in this study was undertaken by building CMO-configurations as discussed earlier³¹. While conjectured CMO configurations may serve as the basis for empirical investigation, at this stage the refined CMO configurations specify the regularities or outcome patterns as well as the mechanisms and contexts involved³². This involves explaining how the interplay between structure and agency may constitute a mechanism (M), which in the presence of certain conditions and contingencies (C) produces an outcome (O) in the form of an event or regularity (R) (Pawson and Tilley, 1997). Following Ragin (1987), this process needs to acknowledge the presence of multiple contingencies that may produce a particular outcome. Moreover, akin to the idea of equifinality, and as pointed out by Harrison and Easton (2004), similar patterns of context-mechanisms may be capable of producing a variety of causal outcomes, i.e., $C_1+M_1=O_1$ or $C_1+M_1=O_2$, and different context-mechanism configurations may be capable of producing an equal outcome, i.e., $C_1+M_1=O_1$ and $C_2+M_2=O_1$. In case of the present study, this analysis involved building explanations about why and how the research objects (MNCs) having structures (network of affiliates and associates) and necessarily possessing causal powers (to build new capabilities or modify existing capabilities by means of dynamic capabilities) and liabilities (complexity of the environment internal and external to the firm) will under specific conditions produce an outcome 1 (new capability) or alternatively under other conditions produce an outcome 2 (no capability).

³¹ This approach is also similar to process tracing (e.g. George and Bennet, 2004) aimed at generating cause-of-effect explanations by working backwards from events, considered as capable of producing contextualized explanations (Welch *et al.*, 2011).

³² Miller and Tsang (2010) advocate the use of critical realist research methods for the purpose of testing hypothesized causal mechanisms. Likewise, Pawson and Tilley (1997) recommend deriving theory-driven propositions prior to empirical work and to put them into empirical test for further specification. Within the present study, CMO-analysis was applied for the purpose of data analysis and theory building with an objective to put forward such middle-range theory that provides an analytical framework for further specification. Therefore, from a critical realist perspective a limitation of the study is that it did not put *ex ante* conjectured CMO-configurations as propositions through empirical testing but the CMO-configurations presented in the study were instead derived from the data *ex post*.

Rather than following deductive or inductive approaches³³, the research process was ‘iterative and ongoing’ wherein data analysis was guided by theory, and where theory and data analysis together aimed at unraveling the causal mechanisms and contingencies involved. As Easton argues, “retroduction is the key epistemological process that critical realists recognize” (Easton, 2010: 124) referring to “a metaprocess the outcome of which is the identification of mechanism that explain what caused particular events to occur” (Easton, 2010: 124). In practice, he argues, the process is likely to be iterative and closely related to abduction suggested by Dubois and Gadde (2002) for case study research.

Within the present study, I aimed at deriving more abstract configurations from the focused CMO-configurations in order to produce middle-range theory able to “travers[e] between general theory (abstract configurations) and empirical case (focused configurations)” (Pawson and Tilley, 1997:116), as illustrated by Figure 13. The idea of ‘cumulation as theory development’ as opposed to ‘cumulation as empirical generalization’ (Pawson and Tilley, 1997: 127) involves continuous laps of abstraction/specification cycle where one moves between general theory and the case. The purpose of the empirical part, symbolized as α and β in Figure 13 is to produce both focused CMO-configurations as well as to look for empirical uniformities, not as empirical generalizations but rather as regularities between cases to be explained by the resulting middle-range theory. In practice this meant iterating between theory on capability development (dynamic capabilities and the evolutionary perspective) and the data (the focused CMO-configurations) with an objective to produce middle-range theory on capability development in the MNC context.

³³ Critical realists question the possibility of theory development being strictly inductive or deductive (see e.g. Welch *et al.*, 2011: 748).

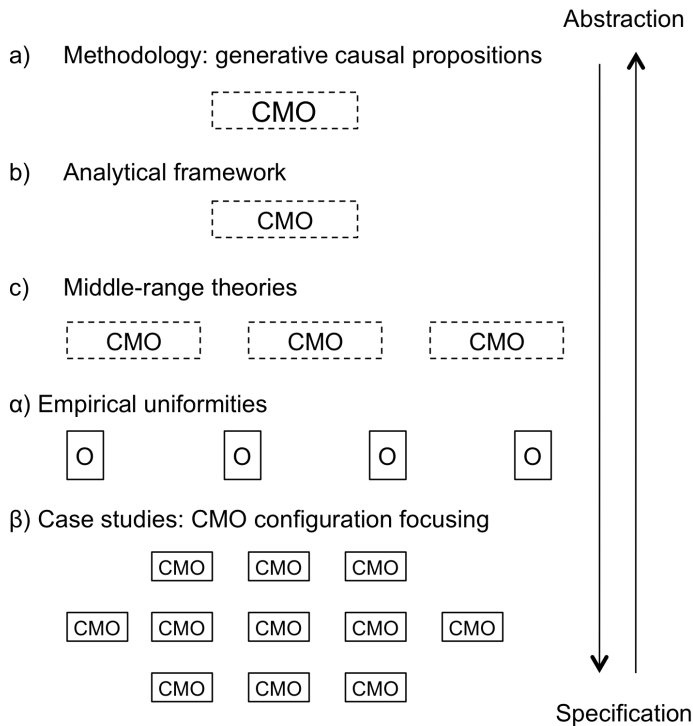


Figure 13. The Elements of Realist Cumulation (Pawson and Tilley, 1997:121)

This mode of theorizing is also in line with what Welch *et al.* (2011)³⁴ have labeled “contextualized explanation’. This method, grounded in a critical realist ontology and epistemology, seeks to reconcile explanatory rigor and contextualization through “a more complex understanding that recognizes the contingent nature of cause-effect relationships” (Welch *et al.* 2011: 750). It relates causal explanation to understanding the constituent nature of objects, i.e., what the objects are capable of doing under specific conditions and contexts, and regards causality as a complex and dynamic set of interactions (Welch *et al.*, 2011: 754).

Finally, according to the critical realist view, due to the open system character of the social system and the recurrent nature of social change, causal mechanisms are considered to be provisional, and therefore, should be subject to continuous theoretical development (e.g. Pawson and Tilley, 1997). Therefore, knowledge obtained from any particular study should be put through further theoretical development that may proceed either

³⁴ Piekkari and Welch (2011) also argue that case study should not only be used as research strategy and call for a greater understanding of the role of the case study in the theorizing. For further elaboration, see Piekkari and Welch (eds), 2011, Welch *et al.*, 2011.

through further specification or by investigating the suggested mechanisms across a variety of contexts to see how widely the theory is applicable (Harrison and Easton, 2004). My objective with this study was to produce middle-range theory that embodies relatively abstract configurations and consequently, these fairly aggregate-level mechanisms and configurations should be put through empirical testing in various contexts for further specification. Testing the aforementioned mechanisms by quantitative methods would also help to understand how widespread the mechanisms and logics put forward in this study are. Further research involving large samples would also elucidate the contingencies that might explain variance in the capability outcomes across different types of organizations and environments.

4.6 Quality of the Study

In this section I evaluate the quality of the study using the concepts of validity and reliability. Validity, in general, reflects the strategies and procedures taken by researchers to establish the credibility of their study, while reliability refers to the replicability of the study with the same outcomes (Yin, 2009; Creswell and Miller, 2000). Although paradigmatic assumptions have been considered as inseparable from the assessment of research quality (e.g. Amis and Silk, 2008), both positivist and quantitative criteria have been dominant when judging case study research, and the positivist notions of validity and reliability have been commonly used without justification (Piekkari *et al.*, 2009). Despite the fact that the concepts of reliability and validity derive primarily from positivistic epistemological tradition, they have also been utilized in non-positivistic research to reflect a commitment to rigor (e.g. Mir, 2011) or to convince traditional reviewers (e.g. Szulanski and Jensen, 2011). In the absence of consensus around evaluation criteria for qualitative research in general (e.g. Pratt, 2008) or for critical realist studies in particular, I assess the quality of the present study using the traditional measures of reliability and the three traditional measures of validity, including construct validity, internal validity and external validity (Yin, 2009). However, in addition to these, I use two complementary criteria, namely ontological appropriateness, and the integration of multiple perceptions in the study (Healey and Perry, 2000) that are not explicit in Yin's set of criteria for case research but are justified from the paradigmatic assumptions adopted in the study. Moreover, the traditional criteria of validity and reliability are discussed with related criteria adapted to realist and critical realist studies.

The following table (Table 3) indicates the criteria that I will discuss. I will conclude this section by summing up the various procedures that I took in the study to ensure high-quality research.

Criteria for case research (Yin, 2009)	Description and key concern	Criteria for case study research within the realist paradigm (Healey and Perry, 2000)	Description and key concern
		Ontological appropriateness	Characteristics of the research problem
Internal validity	Causal relationship between variables and results	Contingent validity	Focus on generative mechanisms rather than on direct cause-and-effect
		Multiple perceptions of participants and of peer researchers	Value-awareness, supported by triangulation between multiple informants and sources of evidence, self-awareness and peer reviews
Reliability	Replicability of the study with the same results	Methodological trustworthiness	Trustworthiness guaranteed by case study protocol: case study database, use of quotations and tables that summarize data, description of procedures
External validity	Generalizability	Analytic generalization	Focus on theory building and analytical generalization rather than theory testing and statistical generalization
Construct validity	The compatibility between key concepts and operational measures (quality of conceptualization and operationalization of the key concepts)	Construct validity	Same

Table 3. Quality Criteria for Case Study Research, Including Case Research within the Realist Paradigm, Adapted from Healey and Perry (2000) and Yin (2009).

Ontological appropriateness

Healey and Perry (2000) suggest making ontological assumptions explicit and put forward a quality criterion of ontological appropriateness. In the case of realist or critical realist case studies, they suggest that ontological appropriateness refers to addressing a research problem that investigates complex social phenomena with reflective actors. Likewise, Easton (2010)

suggests that a critical realist case study is well adapted to approach a complex and dynamic phenomenon, or when addressing research questions on causal mechanisms, or the necessary and contingent relations among the objects or entities under investigation. As my objective was to explain the capability development phenomenon that entails both processual and multi-level elements, and to address both the underlying mechanisms and the related conditions, critical realism was considered as ontologically appropriate for the research question under study.

Internal validity/ contingent validity

Internal validity, another quality criterion, relates to explanatory studies and refers to establishment of causal relationship, i.e., making apparent how x leads to y , without the interference of another factor z (Yin, 2009). The concern for internal validity can be addressed, e.g., by performing pattern-matching and explanation building during data analysis, and further enhanced by ruling out alternative explanations (Yin, 2009). Gibbert *et al.* (2008) also advice using a research framework derived from literature and theory triangulation, i.e., using a variety of theoretical lenses and literature streams, either as research framework, and as means to interpret findings.

Owing to the complexity and dynamism involved in the research phenomenon, illustrating a causal relationship in a form of $x \rightarrow y$ is problematic. Instead, in line with the paradigmatic assumption adopted in the study, I have treated causality as “a complex and dynamic set of interactions which are treated holistically” (Welch *et al.*, 2011:754) and approached it in the form of CMO-configurations. Consequently, the internal validity of the study relied on explanation building during data analysis. First, the focused CMO-configurations illustrated how certain mechanisms (M), operating in specific contexts (C), produce particular capability outcomes (O) in the case companies. Second, these focused configurations served as a basis for CMO-configuration abstraction. These more abstract and aggregate-level configurations specify how the interplay between structure and agency may constitute a mechanism (M), which in the presence of certain conditions and contingencies (C) produces an outcome (O). This is also consistent with the quality criteria put forward by Healey and Perry (2000) who suggest the use of ‘contingent validity’ in the place of the more positivist internal validity. Contingent validity is closely related to the internal validity criterion but is concerned with the validity of generative mechanisms and the related contexts that make them contingent, rather than on direct cause-and-effect relationships. Establishing contingent validity therefore involved specifying the

mechanisms that made things to occur beyond mere description, as well as integrating the context into the analysis.

Scholars have also suggested that the relative strength of an explanation can be reinforced by testing and evaluating it against other alternative explanations (Szulanski and Jensen, 2011; Yin, 2009). The idea of testing and ruling out alternative explanations resonates well with critical realist ideas. To take into consideration alternative explanations in the present study, I used competing theoretical lenses (the evolutionary perspective and the dynamic capabilities view) during data collection and data analysis. Despite this effort to integrate alternative lenses for the best interpretation, I agree with the critical realist claim that because causal mechanisms are not observable, any explanations (or theories) that put forward causal mechanisms should be subject to a critical evaluation, e.g., via academic presentation and critique (Easton, 2010: 123). From this perspective the mechanisms that I have postulated remain provisional and contestable and subject to competing interpretations and explanations, as well as to further specification enabled by future studies.

Multiple perceptions of participants and of peer researchers

Another quality criterion that differs from the more established validity and reliability criteria relates to the fact that due to the epistemological assumptions of critical realism, research should be able to take into account multiple perceptions of a single reality (Healey and Perry, 2000). They suggest that this type of plurality of perceptions can be ensured by triangulating between multiple informants and sources of evidence, by expressing self-awareness, and by exposing triangulations to peer reviews. Likewise, critical realists argue that the inclusion of multiple perceptions and interpretations is necessary in order for the best, current interpretation to be chosen (Easton, 2010). In the present study, I performed triangulation across data sources, theories and different informants, along with reflexive accounts that acknowledge potential biases. I also exposed my analysis to several company informants and peers for feedback.

Construct validity

Construct validity reflects the quality of conceptualization and operationalization of the key concepts (Gibbert *et al.*, 2008). It implies setting correct operational measures for the concepts under investigation, and can be addressed by triangulating between multiple sources of evidence, establishing clear chains of evidence and having peers or key informants to review case study reports, as well as by indicating the data

collection circumstances and the data analysis procedures applied (Yin, 2009; Gibbert *et al.*, 2008). Within the present study the concerns of construct validity deal with the key concepts of organizational capabilities. Moreover, it implies that the key events related to the phenomenon under study were accurately identified and that the context of the study was correctly assessed.

First, during data collection and relating to the organizational capabilities construct, the key the concepts of resources, organizational capabilities and dynamic capabilities were explained to the interviewees prior to each interview or focus group discussion. This proved to be particularly fruitful during focus group interviews as the key concepts were discussed in a group setting allowing for a common understanding to emerge. Moreover, the focus group approach enabled collective resolution to take place without having to rely on the interpretation made by the researcher. When using secondary material organizational capabilities were identified through the use of explicit vocabulary, such as design, technology, logistics, customer understanding, strategic foresight etc.. For the purpose of the study, these words related to both the resources possessed or available to the firm, as well as to the underlying capabilities.

Second, construct validity within the present study implies that the key events relating to capability development were carefully identified and selected. To achieve this, multiple sources of evidence were used to collect data on key events, namely interview data and secondary material including company histories, case studies, annual reports, company web pages, newspaper articles, press releases and internal documents (a detailed list of secondary material can be found in Appendix 2). Moreover, several informants were interviewed on the same phenomenon (see list of interviewees in Appendix 1) and triangulation was performed amongst various informants and data sources.

Finally, to rigorously analyze and understand the context, the study used both highly structured and detailed frameworks on the globalization drivers (market, cost, competitive and government) and levers (Yip, 2003), industry structure and value chain analysis (Porter, 1980, 1985), as well as a semi-structured elaboration on key factors in the external environment. Moreover, 4-8 informants were interviewed in each case firm on the MNC context and globalization phenomenon and the results were triangulated between various informants. Furthermore, there were at least two researchers present in these interviews and the results were jointly discussed and evaluated. However, due to the complexity of the globalization phenomenon and the fact that it does not lend itself to objective assessment, the research relied on the reflective views and

perceptions that managers have on globalization, rather than studying the globalization phenomenon *per se*, e.g., interdependencies between markets and actors.

In addition, a clear chain of evidence was established through having all the interviews tape-recorded, transcribed verbatim³⁵ and restored in a central database. Further, during the course of the study findings of the research were disseminated to the case companies in the form of company reports and presentations, and they were discussed with the company representatives at project steering group meetings and workshops. According to Pettigrew (1997), action workshops lead to higher quality data as they provide a validity check on the data and interpretations made by the researcher during the research process. All publications, including conference and research reports were forwarded to the case companies prior to publications to ensure that they did not contain factual errors, and at least two representatives in each case company reviewed the final case study analysis in this thesis. Finally, to enhance construct validity, a special focus has been on indicating the data collection and data analysis procedures applied in the present work (Yin, 2009; Gibbert *et al.*, 2008).

External validity / Analytic generalization

The external validity measure expresses the generalizability of research findings. Yin (2009) has suggested that the external validity is primarily dependent on the research design and builds on replication logic in multiple cases studies. Moreover, he suggests that a nested approach, in which a case can be divided up to multiple cases, is likely to enhance the external validity of the study. Gibbert *et al.* (2008) call for making case selection and sampling choices explicit for the assessment of external validity. According to this perspective, case studies, provided that replication logic has been applied, allow for analytical generalization that involves generalizing to theory rather than to populations as with quantitative research (Yin, 2009). According to Fleetwood and Ackroyd (2004) generalization also entails that case selection is informed by theory.

Within this study the complexity and depth of the process data limited the number of cases that can be collected within a reasonable time thereby potentially affecting the generalizability of the results. However, the presence of multiple periods within each case enabled a more extensive replication (Langley, 1999). According to Langley (1999), if the data can be decomposed to several phases that can be used for internal replication, even

³⁵ Most interviews were transcribed by a professional transcription agency, some by project members present in interviews

one or two cases are sufficient for the purpose of theory generation, and accordingly, the replication criterion is considered as fulfilled. It could be also assessed that a case sample of firms originating from a single economy is a limitation to the transferability of the result and that a case sample of Finnish MNCs may bias conclusions towards certain type of activities. However, this approach was deliberate rather than a limitation, but should of course be acknowledged when assessing the transferability of the results to other settings.

Finally, reflecting on quality criteria, the main issue between traditional and emergent perspectives seems to deal with the status of case studies and the generalization of findings based on case studies and on idiographic research more generally. First, the case study has been argued to have low external validity meaning that the case study is only appropriate to investigate local causality and is not legitimate for generalization, and second, that case study as a method has been considered suitable for the exploratory or pilot phase of the research process to enhance the understanding of the research phenomenon (Tsoukas, 1989). Within the realist and critical realist paradigms, these views are rejected. Instead, Tsoukas (1989) argues that even idiographic studies can be regarded as epistemologically valid and capable of producing explanatory knowledge because they clarify the structures and generative mechanisms involved in the research phenomena that are contingently capable of producing the observed outcomes. Second, he claims, this obtained knowledge is considered as externally valid because generality is a property of the necessary relations in structures, rather than a property of the empirical domain. Therefore, in order to contribute to a more generalizable theory, the focus of this study was on understanding the logics behind the researched phenomenon and identifying the generative mechanisms in line with the critical realist assumptions.

Reliability and methodological trustworthiness

Finally, the reliability measure demonstrates that the study, e.g., data collection, can be repeated, with the same results. Although scholars, for example Pratt (2008), have questioned whether qualitative research is truly replicable in any case, he suggests that transparency, extensive and detailed accounts of the data collection and data analysis phases together with a careful documentation should enable the reader to assess the potential replicability of the study. Likewise, Yin (2009) emphasizes transparency and careful documentation, e.g., by developing a case study database and by using a case study protocol to minimize errors and biases. Healey and Perry (2000), following realist assumptions, suggest evaluating methodological trustworthiness in the place of reliability. Methodological trustworthiness is closely related to the reliability measure but it does not imply replicability of the results that the critical realists consider unlikely because of the open nature of social systems. However, similar procedures underlie methodological trustworthiness as reliability.

In order to enhance methodological trustworthiness, hence the reliability of the study, I followed the following procedures. First, I documented and reported in detail how the methods were used and conclusions drawn. Second, I also sought to provide such detailed description of the data collection, data analysis and research findings that enable readers to judge both the quality and the transferability of results to other contexts. Third, I extensively used quotations and indicated the case firms' actual names that have been claimed to further enhance the reliability of a study (Gibbert *et al.*, 2008). Finally, in order to enhance the quality of the study and following Welch *et al.* (2011), I sought to conform to methodological rigor not only in the selection of methods and research designs that fit the research question of the study, but also in the theorizing process, e.g., being explicit and transparent by expressing methodological self-awareness, and carefully reporting the process.

As with many longitudinal studies, I had to rely in part on retrospective accounts by managers that may be subject to post-rationalization and therefore potential biases. However, I took several precautions to avoid erroneous results as recommended by Golden (1992) and Miller, Gardiner and Glick (1997). First, I used retrospective data to investigate past facts and behaviors rather than beliefs and intentions, focusing on the key events and most important processes. Second, informants were selected due to their lead position in the organization or development process under analysis, and I interviewed multiple informants on the same periods to avoid informant bias. Informant bias was further reduced by the fact that the key informants (top management team members and strategy experts)

can be considered as highly knowledgeable, able to view the focal phenomenon from different perspectives (Eisenhardt and Graebner, 2007) and to identify the key overall contextual factors and events. In addition, the negotiated access was likely to raise the motivation of the respondents to deliver reliable data. However, it should be acknowledged that as the interviewees comprised mainly of top management team members and strategists, this might slightly emphasize teleological patterns as opposed to more evolutionary patterns in firm behavior, as well as deliberate rather than emergent capability processes. Part of the data was collected and discussed by multiple researchers, which is likely to enhance the richness of and the confidence in the data (Eisenhardt, 1989; Eisenhardt and Graebner 2007). Finally, I performed triangulation both among different interviewees and data sources to ensure high reliability and trustworthiness of the data.

The following table indicates the measures that I took in order to enhance the quality of the research, as determined by the traditional criteria of validity and reliability, as well as the two complementary criteria that relate to the critical realist ontology and epistemology.

Quality criterion	Key concern	Procedures taken
Ontological appropriateness	Characteristics of the research problem	Selection of the research problem and questions
Internal validity/ Contingent validity	Causal relationship between variables and results	Theory triangulation (two different theoretical lenses used, both as theoretical approach and as means to interpret findings) CMO-configurations to build explanation during data analysis
Multiple perceptions of participants and of peer researchers	Value-awareness	Triangulation between multiple informants and sources of evidence, self-awareness and peer reviews
External validity/ analytical generalization	Generalizability	Cross case analysis Multiple case studies/ nested approach, three case studies divided up to 14 temporal units for analysis Rationale for case study selection (explanation why this case study was appropriate in view of research question) Details on case study context Focus on generative mechanisms
Reliability/ methodological trustworthiness	Replicability of the study with the same results	Case study protocol Case study database Organization's actual name given, quotations used Precautions to avoid post-rationalization and biases in retrospective data, e.g. triangulation
Construct validity	The compatibility between key concepts and operational measures (quality of conceptualization and operationalization of the relevant concepts)	Multiple sources of evidence and informants. Key concepts explained in interviews and focus group discussions. Triangulation between data sources and informants Clear chain of evidence Detailed descriptions of data collection and data analysis procedures Reviews by case companies and key informants

Table 4. Quality Procedures Taken in the Study

5. Findings

The findings will be structured as follows (see Figure 14). I will first outline the capability-related processes within each of the three case firms in the form of narratives. I will discuss each case across three dimensions: 1) background and context, 2) content of strategy and organizational change, and 3) the subsequent capability development. Capability-related processes will be discussed both at the level of the capability base and at the level of a single capability. These narratives will put emphasis on the interplay between context and capability development across multiple interconnected levels of analysis (Pettigrew, 1997). Combined with temporal bracketing (Langley, 1999), they lend themselves to initial pattern recognition and subsequent empirical analysis.

Second, I put forward a within-case analysis based on the narratives and focused context-mechanisms-outcome configurations. The focused CMO-configurations display a variety of mechanisms, contexts and outcomes related to capability development and highlight various internal and external factors to enable an analysis on how the mechanisms were activated and the consequent outcomes produced within each particular case and time period (Pawson and Tilley, 1997). Moreover, this representation illustrates the interplay between internal and external factors, central to the co-evolution logic. These focused CMO-configurations are summarized in Tables 5, 6 and 7. The subsequent within-case analysis then discusses the key contextual factors, capability development mechanisms, as well as the impact of the internal and external selection environments within each case firm.

Third, the cross-case analysis that I put forward in the last part of the chapter identifies various mechanisms operative in organizations, comparable between cases. Moreover, it enables discussion on the necessary and contingent conditions that relate to the identified capability mechanisms and outcomes. These analyses then contribute towards

identifying higher-level mechanisms, or logics that provide more abstract accounts of MNC capability dynamics that I elaborate on last.

This findings chapter will be followed by a discussion chapter where I will compare the empirical and theoretical findings from this study with extant literature on organizational capabilities and MNCs.

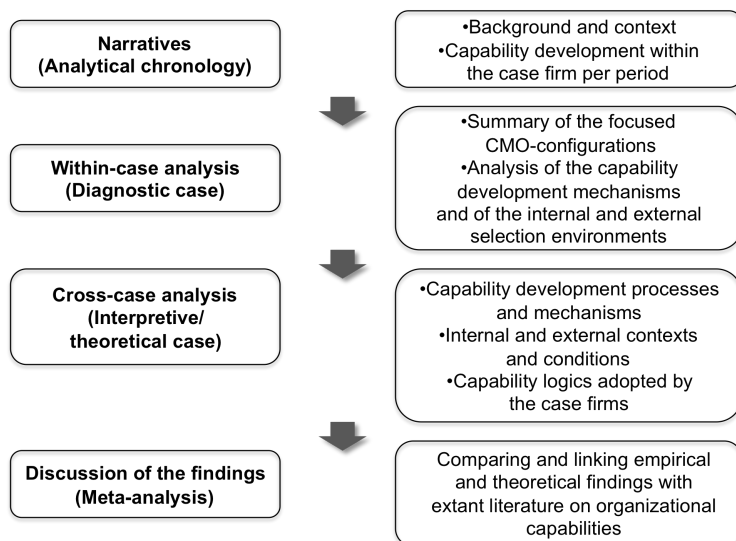


Figure 14. The Structure of the Findings

5.1 Nokia: From Internally Developed Capabilities to Acquisitions and Partnerships

5.1.1 Background and Context³⁶

Nokia operates in the field of mobile communications with annual net sales of 38,659 M€ in 2011. Established in 1865 and having been a conglomerate involved in a various number of industries, including forestry, power plants, cables, and rubber products, Nokia decided to focus on mobile devices and networks in 1994. This decision was preceded by the rise of the telecommunications industry, as well as structural changes within the case company, such as the establishment of telecommunications and mobile phones as separate business units, which had significant influence on the development of the entire company and the underlying capabilities. Nokia became the global market leader in mobile telecommunications in 1998,

³⁶ The retrospective analysis has largely benefited from the 3-volume (975 pages) Nokia history by Martti Häikiö (2001a, 2001b, 2001c) and two additional volumes by the same author (2002 and 2009), which is gratefully acknowledged.

maintaining this position for over a decade despite substantial changes in its operating environment.

The rise of the telecommunications industry in the early 1990s was enabled by both institutional and technological development. First, the deregulation of operators, previously controlled by national telecom monopolies, opened up the competition in the field of telecommunications equipment. Second, analog technology was replaced by digital technology, enabling new services and subsequent market growth, and leading to the development of a consumer market. Third, the GSM standard (Global System for Mobile Communications) gained geographical coverage and was subject to intense technological development (Häikiö, 2001c). Nokia contributed to industry emergence both as a supplier of the infrastructure, i.e., the networks and systems, and as a manufacturer of mobile phone handsets to consumers. The advantages that Nokia had at this stage have been related, on the one hand, to the early development of the market in the Nordic countries, including early deregulation and openness of the market³⁷, and on the other hand to the early entry of Nokia into the business³⁸. Moreover, the small size of the home market prompted Nokia to internationalize rapidly in order to grow.

Owing to Nokia's foresight and early entry into the business, it was able to build the required capabilities prior to its competitors. As an outcome, Nokia was at the forefront in network equipment and devices development when the market opened up, and was able to capitalize on its early lead and growing demand both in Europe and globally. Nokia had established a Nokia Cellular Systems division in 1987 with an objective to develop GSM infrastructure four years prior to the establishment of the first network. Resources, such as experienced personnel, had also been directed towards this division when the trade with the Soviet Union collapsed drastically in 1991 and Nokia was forced to reorient its operations within the telecommunications business (Häikiö, 2001c). These early insights proved to be determinantal to Nokia's development, as indicated by an industry expert:

³⁷ The first cellular network (NMT) opened in the Nordic Countries in 1981, and the first GSM network was established in Finland in 1991 (Häikiö, 2001c: 78)

³⁸ Nokia began cooperation with Salora, a radiotelephone operations company, already in 1963 and they established Mobira Oy, a wireless communications company, as a joint venture in 1979. Nokia had already started to build telephone networks and exchanges in the 1970s. In 1984 Nokia and Tandy, a US-based distributor, established a joint venture to start manufacturing mobile phones in South Korea, and this cooperation enabled Nokia to already gain a foothold in the US market in the 1980s. In 1991, Nokia acquired Technophone, Europe's second-largest mobile phone manufacturer that occupied a strong position in the US car phone market. Through this acquisition, Nokia became the third largest mobile phone manufacturer in the US and the second largest in Europe (Häikiö, 2001c).

So it was four years before the first deal was made. It was really strategic, to be able to anticipate that the market will open up, that there will be deregulation, that it will digitalize, to be able to foresee the big trends, make the big decisions and reorganize the resources within the firm.

At the same time, mobile phone devices were designated a separate division, enabling focusing on different kind of capabilities. Nokia had been involved in the consumer electronics industry, which provided Nokia with some experience related to the consumer business as opposed to its main competitors Ericsson and Motorola who had been involved in business-to-business industry. Owing to the early management insight and the building up of the necessary capabilities, Nokia gained an advantage vis-à-vis its main competitors, as the external industry expert put it:

The starting point for Nokia was richer and wider in order to understand the significance of design or brand. So in a way it had a richer legacy as a firm than its competitors in telecommunications because of its history.

According to this industry expert there were primarily three strategic decisions that contributed to Nokia's success in mobile phones. First, the establishment of Nokia Cellular Systems and Mobile phones as separate divisions; second, the listing at the New York Stock Exchange, which laid a foundation for a global corporate culture; and third, the insight to start driving a consumer paradigm within the industry, previously dominated by an engineering paradigm with products aimed at professional users. The former head of strategy at Nokia recalls a meeting at the beginning of the 1990s:

So at that time all the estimates said that mobile phone penetration could at maximum reach ten percent. Pekka [Ala-Pietilä] challenged this thinking. Being just nominated as the MD [Managing Director] of Mobile Phones he announced at an event in London that mobile phone penetration could be 25% and that it can be made into a consumer good if the design and the brand were in place. Everybody laughed at that time, thinking that the young fellow is speaking nonsense, but at Nokia we believed in it. [...] Without that insight, investment and building up of the necessary capabilities, the market growth in the 90s would not have realized for Nokia, it would not have been able to respond to it.

Nokia's strategy was global from the beginning and it was able to capitalize on its position and early lead for nearly two decades. It established global supply-chain management and manufacturing systems to allow for incomparable operational efficiencies and a rapid time to market. Moreover, as the areas of rapid growth shifted to emerging markets such as

China, India and Latin American countries, Nokia's early entry into these growth markets enabled it to develop a strong market position and the required capabilities. Furthermore, Nokia was able to drive unparalleled economies of scale to its benefit, and combine the manufacture of low-cost handsets with good profitability. In parallel, Nokia sought to build on the convergence of the mobile telephony and Internet services. However, as an outcome of radical changes in the external environment and competitive landscape, Nokia had to witness a loss of competitiveness in the smart phone segment and a drop in its market share and market value³⁹. To re-establish its competitiveness, Nokia started a strategic renewal of the company and established a strategic alliance with Microsoft in 2011 to upgrade its software capabilities.

The beginning of the case time was set at 1991, when Nokia started building the capabilities required for the strategic shift into a focused telecom company. The focus will be limited to mobile telephone operations and the network operations of the case company are excluded from the study. Capability dynamics within the case firm will be discussed at an aggregate level and at the level of a single capability, design. Design attained a strategic position within the company in the early 90s when Nokia started to drive the development towards a consumer-focused direction and it has been assessed as one of the core capabilities, playing a key role in building its breakthrough products (Pulkkinen, 1997).

5.1.2 Capability Development at Nokia (Analytical Chronology)

During the case time, Nokia went through major transformations, first transforming itself from an industrial conglomerate into a consumer-driven mobile phone company in the early nineties, then into a global market leader with globally aligned operations in the late nineties, and more recently, it has sought to transform itself to an Internet company, as an evidence of intense co-evolution between Nokia and the industry. According to an industry expert, Nokia's lead in the industry can be explained by its distinctive capabilities, required in the transformation of the industry in the early 1990s:

The engineering world defines the Nokia success as a GSM success, but Nokia was not any better in GSM-technology, but good enough. The competitive advantage and differentiation came explicitly from the fact that it positioned this business as

³⁹ Between 2008 and 2011, within a period of 3 years Nokia lost 15 percentage points of market share, which declined from 40% to 25% (Kauppalehti May 20th, 2011) and its market value dropped by nearly 70% (Helsingin Sanomat, January 31st, 2011)

a consumer business from the beginning and it started building the capabilities before the others. It was those capabilities that gave Nokia the lead it has maintained until these days.

1991-1994: Transition into a focused telecom company

Following the strategic insight to drive the industry towards a consumer goods industry at the beginning of 1990s, new capabilities such as design, marketing and brand management started to be built into the company along with the decision to focus on a single brand name, Nokia. Instead of acquiring new capabilities to address the new telecommunications industry, the strategy at Nokia at the beginning of 1990s was to proceed through organic growth and build the required capabilities internally⁴⁰. Owing to the early management insight and the building up of necessary capabilities, Nokia gained an advantage vis-à-vis its main competitors, as acknowledged by a Nokia senior vice-president and head of corporate strategy:

So the whole industry was in this kind of engineering phase until the beginning of the 90s, because of the technology restrictions, market size and the business models that were in place. So then, based on a good vision, strategic realignment and excellent implementation Nokia was able to make the transition [to a consumer focused firm].

Prior to 1992 mobile phones were expensive, technical objects accessible mainly to professional users. The emergence and development of mobile phones as a mass-market product was enabled by expanding network coverage as well as by increasing scale and the subsequent drastic drop in cost. Nokia was a forerunner in product design, usability and innovations, and contributed heavily to the product evolution in terms of size, transportability and design, and by putting forward an enlarged product portfolio starting from mid 90s⁴¹. In order to allow for a rapid time to market, Nokia put in place a cross-functional product development process, concurrent engineering, which signified a programmed way of operating in order to make various corporate functions and disciplines, such as engineering, design, sourcing and logistics to work in parallel. This signified a shift in the way of functioning as the following quote from a senior vice-president substantiates:

⁴⁰ With the exception of the acquisition of Technophone, Europe's second-largest mobile phone manufacturer in 1991 (Häikiö, 2001c: 21).

⁴¹ The turning point can be placed to 1992 when more consumer-driven products started entering the market, such as the Nokia 101-model.

The whole engineering- and product development culture came to a turning point. [...] In practice it [concurrent engineering] is manifested in a certain programmed way of operating, with its own program manager, responsible for it, like an MD for his program. [...] Maybe the core is a very strong milestone-based way of functioning, where a certain degree of preparedness must be met in order to reach the milestone. If you don't reach it, the whole justification to the program's existence is terminated and the resources are reallocated, unless you are able to present corrective measures.

Although design had existed within the company from the 1970s, it had not developed into an organizational level capability and was, to a large extent, dependent on certain key individuals (Valtonen, 2007) and tacit knowledge. Linking design to core organizational processes, such as concurrent engineering signified that new milestone requirements were set for design, which acted as a catalyst for the formulation of a systematic design process. In 1995 Nokia hired a design director and started building up a design organization. As opposed to technology-related capabilities that originated to a large extent from Finland, the design function was initially US-based. The design function was later brought to the headquarters, which enabled to position design more visibly at Nokia, while at the same time maintaining various design units in different geographical locations. The following quote from a Nokia senior vice-president in strategy indicates how capability development was driven by the corporate vision:

This strategic decision [to drive the consumer paradigm into the industry], and the insight that industrial design is an important competence in that vision, if we implement it like brand management capability or consumer understanding capability, was an important enabler, maybe the most important.

The consumer focus had implications on other capabilities of the firm as well, and led to high investments in R&D, with an emphasis on user understanding and user interface, which became part of Nokia's core capabilities. To support the consumer focused positioning, Nokia created a global market segmentation model to address the relevant consumer segments and cover all significant business areas within the high-growth market. The consumer segmentation model was to become one of the key success factors, as expressed in the following quote from the Nokia head of strategy:

The segmentation models today form, to a large extent, the basis of our consumer-based operations, including the categorization models, which are formed on the basis of them. So if the segmentation is from outside in, then the

categorization is always from inside out, based on how the firm uses that information, what kind of models and capabilities it builds.

At the same time, the technology platforms put in place enabled Nokia to maintain a large product portfolio, and allowed for a rapid time to market to support growth, assessed as critical in order to meet the consumers' demand for new products. Nokia's cross-functional product programs, supported by these technological platforms, dramatically improved its competitiveness, speed, and cost efficiency and enabled a product renewal rate that was out of competitors' reach. The external industry expert recalls:

So Nokia was the first to understand the significance of platform thinking. Even in the ICT-world it was quite rare to talk about platforms but Nokia grasped it. [...] When Nokia realized that speed, the creation of new products and time to market were important criteria, it started using a renewal measure. [...] Such a product renewal path was impossible without creating a basic technology platform, the so-called engine, with a changing next level that was differentiated. So for example if the life cycle of the engine was three years, than several tens of products were built on that, that's how the renewal path was created.

In addition to the aforementioned capabilities, standardization formed a key focus area within R&D. Nokia's objective was to influence the standardization in the industry and it took a lead role in the many developments (e.g. GSM2.5, voice codecs) (Häikiö, 2001c). This formed part of Nokia's competitive advantage as the establishment and selection of international and global standards proved to be an important force promoting globalization and shaping the industry. Nokia continued to refrain from acquisitions in the early 1990s, but was establishing a number of alliances and partnerships especially in the fields of standardization and product development, with an objective to influence and access the emerging technologies (Häikiö, 2001c).

1995-1997: Crisis to meet the requirements of global scale

Another strategic change process that had a strong impact on capability development originated from the severe crisis that Nokia faced in 1995-1996 and was related to the management of volatile growth, and the balancing between growth and profitability. Nokia's manual supply-chain and production systems were unable to adapt to the rising and unpredictable demand. The firm's operating margin fell and its stock market value declined by 30%. The crisis led to a re-evaluation and reorganization of many critical functions, and to an establishment of a new global supply-chain management concept with an optimized demand-

supply chain cross its supplier network, enabling Nokia to address growth opportunities better than its competitors, as an industry expert retrospectively asserts:

And in '97 and '98 the growth only accelerated and [without the new system] Nokia would never have been able to respond to the absurd global demand.

This crisis and the subsequent operating principles enabled Nokia to re-establish its competitiveness and reach global leadership in mobile phones in 1998. The same year, Nokia, taking advantage of its expertise in the digital technology, was able to make a breakthrough in the US market and within one year its market share surged by 15 percentage points to a record high of 36% of this market. The aforementioned solution of the 'logistics crisis' laid the foundation for many of the strategic capabilities and practices, such as logistics and supply-chain management that Nokia is still able to exploit today, as the industry expert contends:

Still today, nobody beats Nokia in logistics.

Contrary to the general trend of increasing outsourcing, Nokia chose to maintain some 80% of mobile phone manufacturing in-house to ensure both production efficiency and quality (Häikiö, 2001c). Nokia's superior product development processes combined with cutting edge operational systems, enabled it to lead the market evolution with an enlarging product portfolio. This 'time-paced' product strategy enabled the firm to maintain a product renewal rate that the competitors had difficulties in catching upon. The following quote from Nokia's former head of strategy indicates how the company's vision and strategy led the way in the mobile phones market:

Nokia adopted a strategic concept, it was launched in a strategy meeting in '96 or '97. We started talking about time-paced competition [...] it was about setting the market pace so that new products were launched at a certain pace that the others were obliged to adapt to. Nokia determined the pace and the others never really caught up. So that was also a certain type of strategic insight.

1998-2000: Entering the Internet era as a global leader of mobile phones: strategy and capability development at crossroads

The emergence of the Internet towards the end of 1990s brought about radical changes in the operating environment of Nokia. The top management acknowledged the upcoming shift from a voice-based cellular paradigm to digital content and Internet-based paradigm. In 1998, CEO

Jorma Ollila declared the company to be at the crossroads in terms of its strategic development: The strategic choice involved either remaining predominantly a wireless player focusing on wireless solutions and third generation technologies, or expanding into new markets related to the Internet protocol (IP)- technology (Häikiö 2001c: 189). At that time the first option seemed to provide the company with substantial short-term growth prospects, while the second was estimated to offer a better outlook in terms of long-term growth. However, the second option, requiring acquisitions and a strong presence in the United States in order to penetrate the IP-area, was associated with greater risks.

To embrace the upcoming paradigm shift Nokia set up a new convergence 'Life goes mobile'-strategy based on digital technology and the Internet. In 1998, the company established the Nokia Ventures Fund with an objective to search for growth opportunities outside the existing businesses, followed by Nokia Ventures Organization (NVO) in 1999. At the same time Mobile Phones (NMP) undertook its own initiatives to look for new business development and established the Digital Convergence Unit. The new ventures organization, located in California, consisted of Nokia Internet Communications, Nokia Home Communications, including multimedia terminals, and New Growth Businesses. With the new organization Nokia aimed at creating a 'third business' beyond networks and cell phones, while, at the same time keeping the core business viable (Doz and Kosonen, 2008:152). However, this unit failed to meet the expectations at that time. As stated by its former director (in Doz and Kosonen, 2008: 153):

The success of NVO was not fully appreciated at the time, for at least two reasons. First, even mature people in mature organizations suffer from NIH [not invented here]. [...] Second, almost necessarily, the very function of ventures emphasizing long-term business development means that we were pushing against conventional wisdom. So naturally, you have few allies in the organization, and your success may become visible only way down the road.

Consequently, NVO did not gain a strong foothold in the company, and the Digital Convergence Unit, with the support of the core business organization, undertook most of future development.

At this stage, the strategy to focus on organic growth was fundamentally revised as the top management realized that it had to proceed with acquisitions in order to develop the corporate structure and to obtain the capabilities required in the new Internet era⁴². The acquisitions were related to the IP protocol as well as to content providers, games, or entertainment,

⁴² A memo from CEO Jorma Ollila to the Board in Sept., 1997, Source: Häikiö (2001c: 167).

where Nokia lacked the required capabilities. Moreover, the company entered into several partnerships and alliances, including co-opetitive partnerships, the most important of which was Symbian, a joint venture formed by Nokia, Ericsson and Motorola with the British firm Psion PLC to develop a new operating system and platform to be used in the new generation phones. The objective of a joint software platform was to impede Microsoft from taking the lead in software development and to prevent value capture shifting from mobile phone manufacturers to software companies.

During the same time period, Nokia gained a strong position in the Asian market, which became attractive with the high growth of emerging markets such as China and India. The company was able to capitalize on its presence and brand, partly because of its early entry into these markets, as explained by a director in strategy:

I think that one key decision that we made was 'let's enter China'. It was several years back. And being the first mover in that kind of a situation gives you huge advantages. Or 'let's invest in India'. Now 70 percent market share there. When you are the first mover then in people's minds the mobile phones are Nokia. [...] It is these kinds of things that have enabled us to have this position. To have the understanding that there is huge growth in these markets, and to invest there.

Moreover, Nokia's efficient operational systems enabled it to combine scale with complexity and to build low-cost phones at a higher margin than its competitors, and consequently to convert the high demand in emerging markets into a profitable business.

2001-2005: Redefining the business to meet the diversified demand

In 2001 the telecom companies witnessed a decline in the industry because of economic slowdown that was reinforced by the events of September 11th, 2001. At the same time, the growth in emerging markets and increased mobile phone penetration led to a more diversified demand. Following changes in its operating environment and to support market expansion, the next strategic change was initiated in 2002 when Nokia sought to identify the future focus areas. The firm estimated that the move to 3G technologies was insufficient to ensure future growth (e.g. Doz and Kosonen, 2008:158), and put in place a 'variation-categorization' business model to address the full market potential and to identify upcoming key areas. Nokia defined several value domains requiring different type of capabilities, including basic phones, entry phones, business phones, imaging phones, entertainment and media, CDMA, TDMA, wireless appliances and wireless

services. This renewal was initiated by a ‘creative destruction’ process at Nokia, as the following quote by Nokia’s senior vice-president and head of strategy reveals:

We realized when we made our own creative destruction exercise that we need variation. In practice we created 7-8 business units, including business phones, imaging phones, different kinds of enhancements, ramping down the CDMA, the entry phones.

The variation-categorization matrix included a *functionality* dimension with different application areas, including voice, entertainment, imaging, media and business applications, while the other, *style* dimension, included different styles such as premium, fashion, classic, active, expression, and basic. Value domains included various life-style concepts, requiring focusing on the user experience, and in a more holistic thinking in branding and design, labeled as total experience design. The design organization had already taken a key role in building the Nokia brand and this new strategy gave design an even more important role in the corporate development as a Nokia senior vice-president explained:

And then bringing to the market design-driven, design-intensive business concepts, which gave design for the first time a business development role. [...] A business unit built extensively on design-based differentiation included the Life Style products category, Nokia’s 5000-, 7000-, and 8000-series products.

At this stage the focus of design turned increasingly from operational tasks to strategic ones, involving design roadmaps, segmentation models, as well as design for future concepts (Valtonen, 2007: 236). Concurrently, design was linked with corporate development processes, the variation-categorization business model and portfolio management. With its enlarged product portfolio, with several products built on the same technological platforms, design became the primary source of differentiation. As stated by the head of strategy:

A clear positioning of design as an enabler of competitive advantage and differentiation. In practice this was linked to the process of market expansion, a more efficient segmentation and taking advantage of design as a lever to differentiate between the different segments.

The development of design capability was also related to Nokia’s market expansion and the growing impact of the emerging markets on Nokia’s strategy and performance. Consequently, central to design in the 2000s was

building up the design presence in different geographical locations and the enlargement of the product portfolio. At the maximum there were nine design studios globally, some of which were for temporary purposes.

Along with the new 'variation-categorization' business model, Nokia set up a multidimensional organizational structure in 2004 based on the former value domains, including basic phones, multimedia and enterprise solutions divisions. The objective was to cover all the relevant global consumer tastes, geographies, and price points, which led to a proliferation of the product offering. Nokia's product portfolio grew to comprise 40-50 new products per year with some 400 new product variants. Although the company generally succeeded in addressing user needs and preferences with its large product portfolio, it failed to estimate the upcoming success of clamshell phones in 2004, followed by Motorola's victory with its thin phone, Razr, in 2005. Although clamshell phones were becoming mainstream, product design choices related to a circuit design for a key handset subsystem, hampered Nokia's ability to respond to this trend (Doz and Kosonen, 2008: 20). This led to imitative behavior from Nokia while previously it had been leading the innovations within the field.

2006-2008: Facing a paradigm shift and repositioning the company as an Internet company

Nokia pursued a strategy to maintain a large product portfolio to cover all the relevant global consumer tastes, geographies, and price points. In 2006, the company performed a consumer study comprising a total of 60 000 interviews and developed a consumer segmentation model based on a database with 10 billion data points. The head of industry intelligence explains:

Nokia has always considered it a fantastic potential to be able to tap the market of those billions of people that don't have telecommunications. That has been part of the strategy for a long time already, understanding what it takes to sell hundreds of millions of handsets to people in India whose average income per year is very limited.

At the same time, Nokia benefited from scale advantages because of a strong global presence, and because of superior operating systems that enabled it to maintain the complexity of the offering without compromising scale benefits. Being vertically integrated, the firm was able to draw on economies of scale in sourcing, production, brand and distribution better than its competitors. In addition, compared to its competitors, it was able to put into market low-cost handsets with a good profit margin and

consequently to combine high growth with good profitability rates. The head of industry intelligence continues:

I would say that Nokia is able to squeeze profits out of relatively low price points with roughly a 15 percent operating margin at 100 or even sub 100 ASPs [average selling price]. It is the sum of many things. There is certainly a good supply chain, and I mean supply chain in the broad sense, I mean in the sense of production, efficiency in sourcing of components, distribution, and customer interfaces.

The aforementioned strategy and the variation-categorization business model generated substantial growth and gave the company great momentum between 2002-2008. As an outcome, Nokia reached a record high 40% market share in 2008, with an operating margin close to 16%, a figure well above the industry average. The brand was rated amongst the 10 most valuable brands in the world, and it registered 1,1 billion phone users globally. Moreover, due to its global dominance, Nokia had managed to deter horizontalization within the industry that it feared to pave the way for new entrants and affect product margins. When the financial crisis hit the markets in September 2008, Nokia thought that it was better equipped than the other incumbents, because of its superior consumer understanding and ability to manufacture low-cost handsets profitably.

At the same time, as there were significant changes approaching the industry, Nokia sought to maintain the lead in the telecommunications development. The management acknowledged that the increasing convergence of mobile phones, the Internet and services would cause value creation to move from handsets to software and services. Moreover, Nokia estimated that the increasing convergence could potentially lead to either operators or software companies together with component manufacturers taking the lead in mobile telecommunication, leading to a further commoditization of the mobile phone handsets, as stated by the head of industry intelligence in 2006:

Well, the hypothetical worst case would be that the phone would be commoditized so that the Internet experience would come to the phone and the device would be reduced as a platform that carries the user interface of the Internet players. I think that is a challenge.

Consequently, Nokia pursued development in both software and services, and positioned itself as an Internet company, effective from 1.1.2008. The company renewed its business strategy with an objective to transform itself to an Internet company without compromising its position in the handset market, as expressed by a strategy director:

The question mark in the long term is how do we differentiate business strategy-wise, in terms of the business focus that we have. We have been embracing the Internet paradigm change, for example, with these kinds of multi-media computers that nobody else really has and how far we can stretch that? Will Nokia be powerful enough to be a Google of the Web 3.0?

This strategic change process was accompanied by several significant changes including the restructuring the company into 4 divisions: mobile phones, services, markets and corporate development office (CDO)⁴³, and establishment of the Nokia-Siemens Networks joint venture. The strategic capabilities became hosted in the CDO office with an objective to “optimize Nokia’s strategic capabilities and growth potential”⁴⁴. To meet the business objectives and to develop the required capabilities, Nokia started managing its capabilities more systematically and set up specific ‘capability strategies’ as part of the corporate strategy, owned by various forums, as explained by Nokia strategists in the focus group discussion:

So the way we try to drive the capability strategies is that we look at the business strategies [...]. So the business strategies only address the business opportunity. For example, there are people in India with no phones, and then we develop the business case saying how many people, what kind of phones, how could we address that? [...] Then we translate them into capability strategies.

Moreover, in line with the strategic repositioning of the company, Nokia acknowledged a gap in its capabilities and proceeded with a number of acquisitions to support the new strategy. The acquisitions were related to navigation, music, marketing and social networks, and included Navteq in order to attain capabilities in navigation systems to be built into mobile phones⁴⁵. The repositioning brought about significant changes to both Nokia’s offering, such as the Ovi services platform. This implied radical changes in the capability development processes, as stated by a strategist in the focus group:

We have made some big acquisitions [...] and that has not been the traditional way to develop capabilities at Nokia. But we have seen that we are lacking capabilities and it would take too much time and we couldn’t develop them internally so quickly. So in that sense, the capability development has also changed.

⁴³ Announced on June 20th, 2007, Nokia Press Release

⁴⁴ Source: Nokia Press Release, June 20th, 2007

⁴⁵ Announced on October 1st, 2007, Nokia Press Release

Regardless of a number of acquisitions, the delay and slow pace in the development of new software capabilities and services did not come without cost and Nokia had to witness the strengthening of its new competitors from the US that had arrived with new services and content. These competitors included e.g. Research in Motion (RIM) in enterprise market with its advanced e-mail services, and the Apple iPhone, launched in 2007. The Apple iPhone, which provided a superior user experience, touch screen, and a large number of applications marked a move to a new generation of smart phones and the beginning of a severe crisis for Nokia, the magnitude of which did not come apparent until two years later. At the same time, Google established Android, an open handset alliance around an open-code, Linux-based operating system. A Nokia strategy expert commented in 2008 during the focus group discussion:

We try to cover all the price points from very low-end to very, very high-end, it's very true. But it's like more in these services and solutions angle where we have had significant gaps and where others have been able to come in. [...] So I don't think we need to be afraid of somebody who takes over Russia, for example. It's more like somebody looks at the whole pool and sees that there's a lot of unaddressed potential, and then they focus on that and grab that market. So RIM and Apple are these types of competitors.

Despite its global leadership position, Nokia lost both presence and market share in the US market. The operator-driven US market with different standards (CDMA) would have required a high level of product localization that differed from Nokia's global strategy. However, the US market had become a lead market in software and service development, as the following quotes from Nokia head of insight and innovation and strategy director substantiate:

The US is obviously the hotbed for Internet innovation. It is very hard to be competitive unless you have the right kind of competence and ability to be competitive in that business in that marketplace.

The USA is the key country in changing the rules of the industry.

Despite the fact that the role of the US as a lead market in software development was acknowledged within the firm as the above quotes indicate, its implications on business strategy remained underdeveloped. Consequently, the weak presence seems to have hampered Nokia's ability to foresee the magnitude and global reach of the upcoming changes in the industry and subsequent capability development.

2009-2010: Capability development through partnerships

Although top management had estimated Nokia to be better equipped for the 2008-2009 downturn than its competitors because of its ability to manufacture low cost phones with a good margin, Nokia had to witness a decline of its market share as a result of the triumph of its new competitors in the smart phone segment. While still maintaining the global leadership in the global cell phone market and managing to keep a strong position in Asia, its market share started to drastically decline both globally and especially in the US.

The drop in Nokia's turnover and operating margin, coupled with fundamental changes in the business models and user habits forced the firm to accelerate development at many fronts. To re-establish its competitiveness, a 'Solutions' division was established to enhance the customer focus in the product development and reinforce the convergence of mobility and services. Moreover, it set up specific boards responsible the user experience that involved expertise from various functions, including design. The company contended that usability and content, e.g., services, were playing an increasing role to be able to provide a differentiated user experience, requiring more partnerships and ability to draw on external innovation, as a strategy director substantiated:

And now we're getting into the next stage, it's not even about the device anymore; it's about the device experience. And it's not about this whole hardware part, it's about how you do your services [...] then it becomes a question of how well you manage the partnerships and how you pull all this together and how you manage this innovation pipeline of things.

The move to the new generation smart phones also put more emphasis on the operating systems and the compatibility with computers, the Internet and the most common applications. The operating system had become the key competitive parameter in the market and Nokia wanted to keep it an internal capability, maintaining several technological platforms, to address the largest possible target group. The CEO stated in an interview in 2009:

Our strategy is to support several platforms, to satisfy the needs of different consumers. At the same time we operate increasingly with our partners to add value to the end-users.⁴⁶

Nokia acquired full ownership of Symbian and opened it up for open source development and, set up an alliance with Intel on a new MeeGo operating

⁴⁶ Olli-Pekka Kallasvuo, *Helsingin Sanomat*, Sept.4th, 2009

system based on Linux open code, and opted for the Windows OS for its computers. The objective was to apply the MeeGo⁴⁷ operating system in its high-end products while using Symbian for its medium and low-end product range.

At the same time, the competitive situation in the market had dramatically changed and had also come to involve a variety of different business models, as an outcome of which the incumbents increasingly outsourced key capabilities. Nokia sought to maintain all the key areas of the value chain internal, although it did opt for outsourcing and cooperation with the US Qualcomm on chipsets, formerly a key capability at Nokia. Along with the redefinition of the industry value system and blurring industry boundaries, the competitive dynamics changed rapidly, forcing the actors to look for new collaborative and co-opetitive arrangements. A strategy director described the changing landscape and blurring industry boundaries during the focus group discussion:

So the complication is that it's not as clear-cut as it used to be, like okay, we compete with LG and Samsung and Motorola. Now with Microsoft, well, we cannot compete because they have a mobile OS but we would like to use their e-mail solutions for our phones, and Microsoft might be happy if we made some phones with their OS and so on, so everybody has common enemies. And probably Microsoft and Nokia are both worried about Google's foray into the business, and then we sort of compete with Apple but it's a good thing that they are pushing the operators to start doing more revenue share with their devices, which is good for us [...] Google and they'll disrupt the market and we can benefit from it. So the difficulty is actually defining the areas we want to compete in and the areas we want to collaborate in.

In order to gain access to new capabilities and to support new developments in services, Nokia started entering increasingly into several partnerships with third party companies, operators, developers and content providers⁴⁸. The focus group discussants explained:

Nowadays the ability to manage this ecosystem and play with different stakeholders and bring in external innovation and that kind of things has been much more important [...] And related to that, a very important asset going forward is that you grow a system around the software, so that all the developers who build software benefit you as well. [...] If you look at the industry probably those who have been able to partner the most are the most successful.

⁴⁷ This platform combined Nokia's Maemo and Intel's Moblin, announced in February 2010 (source *Helsingin Sanomat*, Feb. 16th, 2010).

⁴⁸ Such as cooperation with Facebook announced on Sept 2nd, 2009, Source: *Helsingin Sanomat*, September 2nd, 2009

The competition had increasingly moved to one between ecosystems, and the objective of Nokia was to grow an ecosystem around Symbian, comparable to that around Apple iPhone OS and Google Android. To attract the developer community, the company had acquired Trolltech in 2008 to support the development of Qt-technology that would facilitate extending various applications to different platforms. However, Symbian did not manage to attract support from other mobile phone manufacturers that seemed to fear Nokia's dominance. The initiatives of the developer community amounted to hundreds of thousands, but were mainly built to be compatible with the iPhone OS and the Android operating systems⁴⁹. Apple kept the iPhone OS proprietary, but Google Android was gaining popularity amongst many mobile handset manufacturers as it enabled them to rapidly upgrade their operating systems, and gain access to a large number of services and applications. As an outcome, the Android OS quickly attained a large installed base of users, critical in the software business. Without a viable ecosystem, Nokia had difficulties in establishing itself as an Internet service provider or even to maintain its position. In September 2010, the CEO Olli-Pekka Kallasvuo was replaced by Stephen Elop, a former Microsoft vice-president.

2011-Strategic alliance with Microsoft

Initiated by the launch of the Apple iPhone, which provided a superior user experience, touch screen, and a large number of applications, and fueled by the launch of Google Android OS, the mobile phone industry had gone through a major transformation and paradigm shift during a period of 2-3 years. The incumbent companies' internal capabilities were insufficient to maintain competitiveness in the smart phone segment and consequently these companies had to increasingly rely on the capabilities that resided within the so-called eco-system, such as those of the developer community. Several mobile phone manufacturers adopted the Android OS that enabled them to rapidly upgrade their software capabilities.

Despite several initiatives undertaken by Nokia to prepare itself for the paradigm shift, such as acquiring full ownership of Symbian and opening it up for open source development, the development of the MeeGo operating system with Intel, new partnerships and the acquisition of Navteq, the results at the beginning of 2011 proved that the above measures had been

⁴⁹ At this stage Apple Store had in total 350 000 applications, Android Market 150 000 applications, the Ovi store 35 000 applications and Microsoft Windows Marketplace 11 000 applications. Source: company information, *Helsingin Sanomat*, March 23rd, 2011

insufficient to equip the company for the future development of the industry. Nokia's market share⁵⁰ had dropped to the lowest since 1997. Despite Apple's relatively low market share in volume⁵¹ it became the largest mobile phone manufacturer in turnover and market value⁵². Android surpassed Nokia's operating system, Symbian⁵³. At this stage, the Apple OS and the Android OS were assessed as superior both in terms of user experience and in providing access to a larger number of services and applications. In contrast, the initiatives taken by Nokia were too slow to re-establish competitiveness in the transformed environment and it continued to lose market share, especially in the smart phone segment. The top management had to acknowledge that Symbian was not sufficiently advanced to support future developments, while the development of MeeGo was too slow. The options to replace Symbian included either adopting the Android operating system, or Microsoft Windows, or continuing to develop the Symbian and MeeGo operating systems. However, top management estimated the time span to extend MeeGo to its entire product portfolio to take several years. On the other hand, adopting the Android operating system would have put Nokia on the same line or behind the other incumbents. To respond to this development, Nokia announced a strategic alliance with Microsoft in February 2011, and decided to apply the Windows operating system to its future product development in place of both Symbian and MeeGo operating systems. Symbian was outsourced to Accenture and MeeGo was continued until the ongoing product development of its N9 model was concluded.

Although the problems relating to Symbian had become apparent in 2009, it was not until the financial results in 2010-11 and the subsequent change of CEO that prompted the company to change the operating system. The new CEO compared the situation to a burning platform: A man had to choose whether stay on board, and get burned, or jump to the ice-cold Atlantic. He chose the latter, which enabled him to tell his story⁵⁴. Jorma Ollila, the Chairman of the Board, on the other hand, compared the situation to an ice-hockey game. Nokia had won the first round, did not do so well in the second, but was now heading for the third round, with an objective of making it to the play-offs⁵⁵.

⁵⁰ 25.1% in 1-3, 2011. Source Kauppalehti May 20th, 2011

⁵¹ 3.9% in 1-3, 2011. Source Kauppalehti May 20th, 2011

⁵² 8.2 billion Euros as opposed to 6,5 million Euros for Nokia phones, Source: Strategy Analytics, Kauppalehti, April 26th, 2011

⁵³ With market shares of 36% and 27% respectively during the period 1-3/2011, Source: Gartner, *Helsingin Sanomat*, May 19th, 2011 and Kauppalehti May 20th, 2011

⁵⁴ An internal Nokia memo, *Helsingin Sanomat*, Feb 9th, 2011

⁵⁵ Interview with Jorma Ollila, Chairman of the Board and former CEO *Helsingin Sanomat*, March 23rd 2011

As the performance measures indicate, Nokia had not managed to stay on par with the changes in the external environment. According to the Chairman of the Board the performance in 2006-07, comparable to that in 1998-2000, had brought about a 'level of comfort' in the company and false conviction in the competitiveness of Symbian⁵⁶ despite the fact that it was acknowledged within the company that the value creation within mobile phones would increasingly shift to software and services. Jorma Ollila, the Chairman of the Board commented in 2011 in the general meeting with Nokia shareholders:

We did not see the development that sprang off the US West Coast in software technology, services, mindset and strategy.⁵⁷

It can be concluded that Nokia failed to respond to changes in the external environment or to transform itself into an Internet service provider without the required capabilities, especially a viable operating system, and without ecosystem-related co-specialized assets. Consequently, the company had to reach outside its own boundaries for complementary assets, and to opt for a strategic alliance with an objective to build an ecosystem around the new Nokia-Windows alliance comparable to that around Apple OS or that of Google Android. At the same time, Nokia sought to retain its core capabilities and transfer them to the smart phone segment while continuously looking for new sources of value creation and differentiation, such as augmented reality services. Simultaneously, the patent portfolio enabled it to generate substantial revenues from the new industry entrants turning IPR management into a key capability. As to the development of design, it continued to play a key role in the company and was granted a more prominent role in the new organizational structure⁵⁸ as a horizontal capability that cuts across multiple functions.

5.1.3 Summary of the Focused CMO-Configurations and Within-Case Analysis (Diagnostic Case)

The following table (Table 5) summarizes the case periods and CMO-configurations by highlighting key factors in the internal and external contexts and capability development.

⁵⁶ Interview with Jorma Ollila, Chairman of the Board and former CEO, *Helsingin Sanomat*, March 23rd, 2011

⁵⁷ A meeting with shareholders, Kauppalehti, May 4th, 2011

⁵⁸ Announced in February 2011

	1991-1994	1995-1997	1998-2000	2001-2005	2006-2008	2009-2011 (Feb.)
External context (C)	<p>Ongoing deregulation and digitalization. Expanding GSM coverage and technological development.</p> <p>Rise of the consumer-market: consumer models and new services. Consumer models increase the need for design.</p>	<p>High-volatility market growth. Requirement to manage global scale.</p> <p>Expanding scale and scope increase the need for design.</p>	<p>High market growth because of growth in emerging markets. Multimedia technology and emergence of the Internet.</p> <p>Growing role of software firms. Digitalization of the US market.</p>	<p>Emergence of the 3G technology. Convergence of the Internet and mobility.</p> <p>Growth of emerging markets and diversification of demand. Success of clamshell and thin phones (Motorola Razr)</p>	<p>Polarization of demand: smart phones and Internet-based services and applications in developed markets. Ultra-low cost phones in developing markets.</p> <p>New industry entrants: Apple iPhone, Google with Android OS, RIM.</p> <p>Financial crisis in 2008.</p>	<p>Growth of the smart phone segment with touch-screen technology and Internet-based services and applications. Key role of the operating system and developer community. High growth of Apple iPhone and the Android OS, adopted by many incumbents. Build-up of ecosystems around iPhone and Android. The success of Apple iPhone puts emphasis on design and usability.</p>
Internal context (C)	<p>Focusing on telecommunications and divesting other businesses.</p> <p>Transition into a consumer-focused firm in mobile phones: need for an enlarged product portfolio and design.</p> <p>Adopting a single brand name.</p> <p>Listing at the NY Stock Exchange.</p> <p>Taking a lead role in standardization.</p>	<p>Nokia's supply-chain and production unable to adapt to volatile demand: 'logistics crisis'.</p> <p>Sharp decrease in Nokia's operating margin and market value.</p> <p>Need to balance growth and profitability.</p>	<p>Global leadership in mobile phones in 1998, market expansion. Convergence of mobile phones and portable devices. Identifying opportunities related to the Internet. Digital Convergence Unit (DGU), Nokia Ventures Organization (NVO). <i>Life goes mobile-</i> strategy.</p>	<p>Identification of 9 value domains and restructuring the company. Building up a variation-categorization based business model.</p> <p>Growing role of emerging markets.</p> <p>Lag in the development of clamshell and ultrathin phones.</p>	<p>Strategy to maintain a large product portfolio. Restructuring the company to mobile phones, services, markets and Corporate Development office (CDO). Repositioning the firm as an Internet company (1/2008) to prevent horizontalization and commoditization of handsets.</p> <p>Record-high market share and market value at mid-2008. Financial crisis puts focus on low-cost phones.</p>	<p>New Solutions Division and solutions-based strategy. Efforts to renew the Symbian OS by opening it for open source development. Development of the MeeGo OS (with Intel).</p> <p>Drastic drop in turnover, operating margin and market share in the smart phone segment.</p> <p>Change of CEO in 10/2010. Strategic alliance with Microsoft on the Windows operating system announced in Feb.2011</p>
Capability development mechanisms (M)	<p>Building up internally the capability base for a consumer-focused positioning.</p> <p>Building up and consolidating GSM capabilities. Establishing key organizational processes (e.g. concurrent engineering)</p> <p>Establishing partnerships to access emerging technologies.</p>	<p>Establishing new processes to adapt to market growth and global scale.</p> <p>Renewal of capabilities related to logistics and other support functions. Extending capabilities for global scale.</p>	<p>Replicating capabilities in new geographic markets. Building up internal capabilities for the digital convergence. Acquiring new capabilities related to the Internet Protocol (IP). Symbian OS as a joint venture.</p> <p>NVO: search for new growth businesses</p>	<p>Capability redeployment: Exploiting existing capabilities to address new market opportunities.</p> <p>Capability trimming: Ramping down CDMA, TDMA.</p>	<p>Identification of capability gaps related to services, acquiring new capabilities e.g. Navteq. CDO to develop str. capabilities, realigning internal selection criteria with strategy.</p> <p>Maintaining key capabilities in-house to support vertical integration, e.g. manufacturing. Incremental renewal of capabilities e.g. operating system.</p>	<p>Acquisitions and partnerships with third-party companies, operators, developers and content providers to gain access to new services and applications. Internal development and upgrading of Symbian until 2/2011. Capability development with Intel until 9/2011.</p> <p>Recombining Nokia and Microsoft capabilities (02/2011 →): Objective to build an eco-system around the Windows-Nokia alliance.</p>
Capability outcomes (O)	<p>Capabilities in brand management, market segmentation, design, technology platforms. Strong growth in product portfolio, with enhanced product renewal rate and time- to-market. GSM 2.5. voice codecs.</p>	<p>Redesigned support functions. Optimized demand-supply chain across Nokia's supplier network. Nokia to maintain 80% manufacturing in-house.</p>	<p>Capabilities to address various market needs and more efficient segmentation. Enlargement of product development to multimedia phones. New capabilities related to the IP protocol, content providers, games and entertainment. Symbian OS as a joint venture.</p>	<p>Capabilities to address new market opportunities (e.g. lifestyle segments). High growth in product portfolio to cover various consumer, geographies and price points.</p>	<p>Capabilities well adapted to the emerging markets, low adaptability to the US market. Superior economies of scale and operational excellence: ability to offer low-cost handsets with a good profit. New internal capabilities in software and services (e.g. navigation, music, social media). Ovi platform. Lag in the development and renewal of the operating systems.</p>	<p>Access to new capabilities via partnerships.</p> <p>Symbian operating system obsolescent, the development of MeeGo OS too slow</p> <p>Capability retirement: Symbian outsourced to Accenture in 02/2011, MeeGo discontinued in 09/2011.</p> <p>Smart phone development puts emphasis on IPR management.</p>

	1991-1994	1995-1997	1998-2000	2001-2005	2006-2008	2009-2011 (Feb.)
Capability development mechanisms (M) relating to design	<p>Identification of design as a key capability in the consumer focused vision.</p> <p>Capability building using an external consultant.</p> <p>Integrating design to main corporate processes (e.g. CE). Recombination of internal/external design.</p>	<p>Identification of design as a contributor to competitive advantage.</p> <p>Consolidation of design capability.</p>	<p>Identifying design as a key success factor.</p> <p>Diffusion of design capability by building up a design presence in different geographical locations.</p> <p>Diversification of design requirements.</p>	<p>Linking design to the corporate development process, variation-categorization business strategy and portfolio management.</p> <p>Reconsolidating and exploiting design capability to new business opportunities.</p>	<p>Design to have a business development role: design-intensive business concepts and total experience design.</p> <p>Rebuilding design DNA.</p>	<p>Design involved in business and strategy.</p> <p>Designers involved in boards responsible for the user experience.</p> <p>Enhanced role in the new organization structure announced in Feb.2011.</p>
Capability outcomes (O) relating to design	<p>Design established as a key capability and integrated into main organizational processes. Design process.</p>	<p>Hiring a Design Director.</p> <p>Building up the design organization, and a global design culture.</p>	<p>Enlargement of the product portfolio.</p> <p>Proliferation of design capability.</p>	<p>New business models and products based on differentiation and design.</p> <p>Design roadmaps, segmentation models, future concepts.</p>	<p>Design capabilities related to 'total experience design'.</p>	<p>Convergence of the physical and digital design, total experience and solutions design.</p>

Table 5. Summary of the Case Periods and Focused CMO-Configurations at Nokia

As the narrative pointed out, during the case time the major events (or sequences of events) in the evolution of the telecommunications industry with a significant impact on firm strategies and capability development included 1) digitalization, and the simultaneous deregulation of operators at the beginning of 1990s; 2) transformation of the industry into a consumer-focused business at the beginning of 1990s driven by Nokia and other actors; 3) market growth in the mid-1990s further amplified by globalization and emerging markets such as China and India in the 2000s; 4) multimedia technology, and the convergence of mobile phones and personal appliances at the beginning of the 2000s; 5) the arrival of the Internet, and following convergence of mobile phones and the Internet; and finally, 6) the recent paradigm shift into user-focused and Internet-based services and solutions, driven by new industry arrivals, Apple and Google. While the institutional and technological drivers, namely deregulation and digitalization, and the transformation to a consumer business were initially the key drivers shaping the telecommunications industry, more recently the emergence of the Internet, and the related user trends and actions driven by industry entrants have been increasingly influencing the selection criteria and the subsequent capability development. Moreover, continuous product innovations have characterized the mobile phone industry (Giachetti and

Marchi, 2010) and as an outcome, mobile phones have evolved from voice-based cellular phones (with SMS), to multimedia phones incorporating such features as camera, music player and GPS, and finally to Internet-phones with a number of services and applications⁵⁹. Moreover, with the move from voice communication to multimedia, the emphasis has shifted from hardware to software, and along with new industry entrants there has been a move from operator-dependent business models to more diverse models. While cell phones have increasingly become commodities and basic consumer electronics, so-called smart phones with superior product margins have come to dominate the mobile phone market and its development. In terms of capability requirements, the emergence of the telecommunications industry and digitalization put emphasis on R&D capabilities, while the transformation of the industry into a consumer business demanded new capabilities from industry actors, such as brand management and marketing capabilities, as well as design. The subsequent market growth required an ability to adapt to the new global scale and operational efficiencies, e.g., efficient logistics, and the growth of the emerging markets (e.g. China and India) necessitated a capability to manufacture and deliver low cost handsets. The convergence of the Internet and mobility, and the following shift from a voice-based cellular paradigm into the Internet-based services paradigm, put emphasis on managing the user interface through software capabilities and applications. Consequently, the operating system, that determines the quality of the user interface, became a key underlying capability along with a services and applications compatible with it.

Accordingly, as the basic cell phones became commoditized, the key capabilities to support this activity became operational efficiency and economies of scale in sourcing, production, distribution and brand. While, at the same time, smart phones increasingly demanded a focus on the quality of the user interface enabled by the underlying operating system and the access to a large number of applications and services. Both the required software capabilities and the need to integrate a large variety of services and applications in mobile phones for an enhanced user experience prompted ecosystem thinking and led to individual firms seeking complementary, co-specialized capabilities within the eco-system.

Moreover, as brought up by Burgelman and Siegel (2008), success in a horizontal, or open model of industry organization involves ‘increasing returns to adoption’ referring to the fact that a technological platform, such

⁵⁹ Hyötty (2011: 55-66) assigns the following time periods for the various technology phases: voice-based cellular phones (-1999), multimedia phones (2000-07) and internet-phones (2008-).

as the operating system, becomes increasingly valuable the more users it has and therefore, achieving a high installed base becomes key. A large installed base attracts independent software developers⁶⁰ and sets in motion a 'virtuous circle', as the value of the operating system is augmented with an increasing amount of software, likely to further increase the installed base and attract more software developers. The success of Android can be explained by its systematic efforts to attain a high installed base by providing the mobile phone companies free access to the operating system and to its applications. This was mutually beneficial because, at the same time, the adoption of Android enabled the incumbents to rapidly upgrade their operating systems. The situation changed, however, as Google acquired Motorola in 2011, creating tensions and anxiety amongst the incumbents.

Apple, alternatively, offered superior earnings to independent software developers along with its state-of-art operating system and managed to draw the developer community even when the number of users was small and despite that fact the Apple kept its operating system closed. Nokia Symbian, in contrast, did not manage to sufficiently attract the developer community despite its base of a billion users globally, probably because of the inferiority of its operating system that did not provide an optimal platform for applications, and its weak presence in the USA, where the developer community primarily resided.

Table 6 highlights the differences in capability requirements that relate to the voice-based cellular, and the Internet- and services-based paradigms. First, as the table indicates, related to voice-based cellular phones, capability management revolved around balancing between internal capability development and outsourcing, whereas smart phones have required actors to rely more on external capabilities and to combine their internal capabilities with those provided by the ecosystem. Second, related to voice-based cell phones, the required capabilities have related mainly to technology platforms, operational efficiency and supply-chain management, scale and brand, while new smart phones have put emphasis on the operating system, services and applications, brand, and user experience design. Whereas cellular phones were differentiated primarily based on product features, such as usability, design and the extent of product portfolio, smart phones are mainly differentiated through the user experience, including the extent of services and applications. In terms of design, basic cell phones put emphasis on the more traditional industrial

⁶⁰ See Burgelman and Siegel (2008) for findings on high-technology ventures, they also claim that Apple Computer remained a niche player in the computer industry because it failed to acknowledge the increasing returns to adoption (2008:165).

design, while smart phones have required an emphasis on user-experience design. In terms of external partners, the management of cellular phones has relied more heavily on operators and suppliers, putting emphasis on power management, while the development and management of smart phones have involved the developer community and relied more on partnership than power management. As an outcome, whereas the internal selection regarding cell phones related to differentiation based mainly on product features and cost, with an objective to create internal innovation, the development of smart phones involved criteria that related to differentiation based on user experience, and required an ability to access external innovation.

	Voice-based, cellular paradigm (basic phones)	Internet-and services-based paradigm (smart phones)
Capability approach	Internal vs. outsourcing (global specialization/horizontal actors)	Internal and ecosystem capabilities (e.g. developer community)
Required capabilities and resources	R&D (mechanical, radio technology) Technology platforms Operational efficiency, supply-chain management Scale (sourcing, production, distribution) Brand Industrial design, usability Patent portfolio	R&D (Software- and multimedia technology) Operating system/software platform Services and content Scale (software), installed base of users
Key differentiator	Usability, design, product portfolio Differentiation through product features Price/quality ratio	Brand User experience design Open-code development/ IPR management User experience (touch-screen and operating system) Differentiation through services and applications portfolio Price/experience ratio ⁶¹
Design Customization	Industrial design Large product portfolio	User experience design Large portfolio of applications and services
Partners	Operators and suppliers (power management)	Developer community (partnership management)
Internal selection criteria	Differentiation/cost, internal innovation	Differentiation, ability to exploit external innovation

Table 6. Differences in Capability Configurations between the Voice-Based Cellular Paradigm (Basic Phones) and the Internet- and Services-Based Paradigm (Smart Phones)

Capability mechanisms and logics within the case firm

As the narrative pointed out, both the business environment and business strategy changes occasioned intensive capability development within the case firm. During the case time, Nokia went through major transformations, first transforming itself from an industrial conglomerate into a consumer-driven mobile phone company in the early nineties, then into a global market leader with globally aligned operations in the late nineties, and

⁶¹ This idiom was adopted from Hyötty (2011)

recently the firm has been going through a major transformation in order to adapt to changes within the industry. While the two former transformations were successful as an indication of the firm's dynamic capabilities, the firm has encountered significant difficulties in adapting itself to the changes in the business environment that relate to the emergence of the new 'smart phone' segment and subsequent paradigm shift. The analysis also indicates that Nokia's case history includes both periods of active internal capability development and shaping the external environment, as well as adaptation and reacting to the external environment.

First, the analysis informs that many of Nokia's initial advantages related to its ability to anticipate and consequently to capitalize on major changes in the market place, e.g., digitalization, deregulation and later the rise of Asia as a key market. Owing to managerial foresight, Nokia was able to anticipate the development of the industry and related opportunities, driving it to divest its other businesses and to focus on telecommunications. Moreover, it was able to undertake organizational restructuring, reorganize its resources and to build the capabilities prior to its competitors. Because of its limited resources at the beginning, Nokia had to build the development of the company on a few select capabilities. These included GSM technology, as well as capabilities to support consumer-focused positioning, such as brand management, design and market segmentation. Although these capabilities seem self-evident *ex post*, given the evolution of the telecommunications industry, the decisions to focus on these capabilities were undertaken in an uncertain market situation dominated by the engineering phase, professional models and with multiple co-existent technical standards. Consequently, related to mobile phone handsets, and to a large extent influenced by individual level insights and vision, Nokia was able to internally select and develop the required capabilities, such as brand, design, product development processes and technology platforms to support the development of a large product portfolio and rapid time to market, and to influence the external selection criteria to a consumer-focused direction. Nokia's capabilities brought about an important variation to the market and it was able to benefit from the resultant co-evolutionary advantage. Second, the firm was able to build up an efficient supply-chain management system prior to the substantial market growth, giving it a sustainable advantage vis-à-vis its competitors. With its large product portfolio and efficient operating systems, Nokia was able address full market potential and to leverage scale benefits in sourcing, production, distribution and brand to its advantage.

Having built its initial success and market leadership position on select capabilities, Nokia shifted its capability strategy to embrace more variation

in its capabilities. Agitated by industry slowdown and motivated by emerging market development, Nokia chose not to rely simply on 3G technologies for future growth, and initiated a strategic change process to explore multiple growth prospects. In 2002, the company put in place a 'variation-categorization' business model in order to be able to address the full market potential and to embrace future growth areas. Nokia defined nine different value domains and started building new capabilities with an objective to generate future growth and to create value by inventing new application domains. The different application domains required different capabilities and a larger scope of different capability development mechanisms to address multiple selection criteria. These included developing and acquiring new capabilities (e.g. wireless appliances and services, media and entertainment), renewing its existing capabilities (basic phones and business phones), recombining capabilities for new product offerings (imaging phones), scaling up extant capabilities (entry phones), or retrenching capabilities (CDMA, TDMA) and establishing cooperative arrangements for these capabilities (CDMA with Qualcomm). The move to the new value domains was supported by a multidimensional organization structure. As an outcome of the new business model, the product renewal rate multiplied and came to comprise 40-50 new products annually with some 400 new product variants. Nokia was able to constantly renew its large product portfolio to cover all the relevant global consumer segments as well as to find new application domains that did not require radical changes in existing technology. With this time-driven product development, the company was able to maintain a lead in mobile phone development for a relatively long time.

Moreover, through retention processes, such as replicating, leveraging and scaling its capabilities globally, Nokia was able to collect full benefit from its variety-generating activities. Its core capability became the ability to generate a high product renewal rate as well as to manage the complexity without compromising scale benefits in sourcing, production, distribution and brand because of its perfected sourcing, production and logistics systems. Staying vertically integrated, Nokia was able to take full advantage of its indigenous capabilities and reap superior scale benefits compared to its competitors resulting in above industry average profitability rates.

Furthermore, Nokia gave its suppliers access to its roadmaps and advance information about its future products and consequently the supplier network was able to provide the firm with complementary capabilities to support its growth. Moreover, due to Nokia's superior size, it received preferential treatment from suppliers, e.g., during component shortages. Consequently, and as opposed to other incumbents, Nokia was able to

integrate and to control the entire, albeit transforming, value chain to for their own benefit. A capability logic based on variation and retention fueled the company into substantial growth and enabled it to attain a record-high 40% market share of the global wireless telephony market.

Nokia was still able to benefit from its industry position and leverage its existing capabilities during the era of the multimedia phones. However, the firm's ability to collect full benefit of its variation- and retention-based capability logic was, to some extent, limited by its insufficient attention to emerging trends or local specificities, and by a limited scope of capability development mechanisms. Instead of drawing on local environments to generate variation or building capabilities to address local needs, Nokia aimed at addressing all relevant consumer tastes, geographies, and price points with a global product portfolio and capabilities. For example, the US market, characterized by high operator dominance and based on the CDMA-standard would have required a substantial amount of product localization that differed from Nokia's global strategy. Likewise, although the company managed to comprehensively identify the existing global needs and to segment these needs into relevant categories, they failed to sufficiently address emerging trends from key markets. These included the clamshell and ultrathin phones, but first and foremost, they failed to acknowledge the magnitude of changes related to the emergence of the so-called smart phone segment with distinct and fundamentally different external selection criteria. The lack of managerial foresight to identify the upcoming changes in software and service development originating from the US can, at least partly be attributed to its weak presence in this market and its neglect to optimally use the capabilities from its country or regional organizations. Moreover, as Nokia estimated that the industry had become mature, its capability activities shifted towards retention and incremental variation, and it refrained from embracing more radical, potentially competency-destroying variations and innovations.

As an outcome, Nokia's variation- and retention-based capability logic became challenged by the fundamental changes in the external environment. The emergence of the new application domain related to Internet-based services and applications had generated a radical shift in the external selection criteria. Consequently, related to the development of the industry increasingly from a device to software and services business, other actors in the field drove the development and the company was obliged to catch up in the required capabilities. Although the data indicates that it had been able to foresee the convergence of the Internet, services and mobility, it seems that it failed to estimate the arrival of new actors and changing business models, and the subsequent leap in capability configurations.

Paradoxically, the user interface that had constituted one of Nokia's core capabilities and provided an advantage vis-à-vis the other incumbents became its core weakness as the external selection criteria changed.

Owing to the leap in capability requirements, the incumbents' internal capabilities became insufficient to maintain competitiveness in the smart phone segment. Instead, both the required software capabilities and the need to integrate a large variety of services and applications in mobile phones for an optimal user experience prompted ecosystem thinking and led to individual firms seeking access to complementary capabilities within the eco-system. As an outcome, many of the incumbents upgraded their operating systems to Android and relied increasingly on the ecosystem capabilities such as those of the developer community.

As the value creation within mobile phones increasingly shifted from handsets to services and applications, Nokia also proceeded with acquisitions to obtain capabilities in these domains. At the same time, however, as the operating system had become the key competitive parameter in the market the company persisted in maintaining it as an internal capability, and pursued development on both Symbian and MeeGo operating systems even when it became apparent that Symbian was unable to support a user interface comparable to its competitors. Despite its efforts, and mainly because of the long capability development times, Nokia was unable to close the capability gap between its capabilities and those of the new industry arrivals. Nokia's problems became manifest in its inability to introduce a competitive smart phone with a user experience comparable to products from industry rivals. In order to adapt to the new external selection criteria, the firm had to decide which capabilities to retain to be transferred to the new application domain and which capabilities to rely on partners for. To respond to the radical shift in the external selection criteria, Nokia announced a strategic alliance with Microsoft with regard to the Windows operating system, with an objective to build an ecosystem around the Microsoft-Nokia alliance comparable to those around iPhone OS or Google Android.

Although the industry evolution remains obscure, it is likely that the two divergent trends of smart phones and more affordable phones will converge and there will be use for Nokia's retained capabilities within the smart phone segment to support the global diffusion and accessibility in prices. An industry expert reckoned:

More generally speaking, there may be a capability combination that is born, for example, maybe at Nokia, the combination of its internal capabilities with the

more responsive capabilities that are building now in the US. Maybe they together make up a game-changing thing in Asia.

The analysis of Nokia's evolutionary fitness indicates that related to the voice-based cellular and multi-media mobile phones, Nokia possessed capabilities that were above the prevalent fit, contributing to both the competitive advantage of the firm and market evolution. However, related to the emergence and development of the smart phone segment, a number of Nokia's capabilities were inferior to other industry actors, and consequently it was forced to adapt to external changes. It can be concluded that the company's strategy build on the variation-retention capability logic became weakened by radical changes in the external environment but also by its inability to embrace radical innovations, by its inadequate selection criteria and resource allocation to support the smart phone development, as well as by its insufficient efforts to exploit external capability networks to complement its internal capabilities with co-specialized assets. As a consequence, changes in the external environment forced Nokia to adopt another capability logic to access the required capabilities and to close the capability gap between its internal capabilities and external selection criteria.

Internal and external selection environments of Nokia

The above analysis provides ample evidence on the capacity of Nokia to drive the evolution of the mobile telephony industry. As the analysis conveyed, Nokia's success was based on its ability to recognize the opportunities related to the mobile telephony and to respond to these opportunities with a large product portfolio and rapid time to market. With 'time-paced' product development, coupled with highly efficient operations and scale advantages, the firm was able to direct development in the mobile telephony market and maintain a co-evolutionary advantage vis-à-vis the incumbents. With its variation-categorization business model, Nokia's capability development was directed towards creating and exploiting new application domains for its capabilities. Moreover, through retention processes, such as replicating, leveraging and scaling its capabilities globally, the company was able to collect full benefit from its variety-generating activities. With this capability logic the firm was able to direct the evolution of the market and maintain a co-evolutionary advantage in both technology and market development. However, as the data indicates, Nokia failed to maintain and capitalize on its lead in the new smart phone segment that had severe implications on its performance. By discussing contextual factors that had an impact on capability outcomes within the

case firm, the objective of this section is to illustrate how Nokia's capability development became constrained by various factors in the environments internal and external to the firm. The data analysis indicates that a number of factors can be attributed to the complexity of the environment originating from multinationality.

First, the arrival of the Internet and new industry entrants brought about far-reaching changes in the external environment. However, the data reveals that most of Nokia's variety-generating activities were directed towards application domains that were consistent with its extant business logic and did not challenge the prevailing selection criteria. The emergence of a new application domain related to services and applications based on the Internet, fueled by the launch of the Apple iPhone, instead, represented a new 'speciation event' (Adner and Levinthal, 2002) that led to a whole new segment of 'smart phones'. This emergence of the smart phone segment was preceded by only minor changes in technology but led to significant changes in the external selection criteria and set off subsequent technological development. Even though Nokia had a 'Life goes mobile' vision and strategy in place targeted at the convergence of the Internet and mobility, it failed to foresee the upcoming 'speciation event' or estimate the speed and magnitude of the changes it brought about. It seems that this was, at least partly a consequence of a lack of sufficient managerial attention to the US that had become a lead country in software and service development but did not represent significant weight in terms of turnover. A Nokia strategy expert commented:

I think in the past when we have had success cases, they have been to some extent dependent on some great individuals in management positions, in top management positions. And I'm afraid that they are not processes that we could easily repeat. I'm not equally confident that whenever there is change we are always seeing that in advance and being able to prepare for that. It's more like okay, we've had some successes there in the past, maybe those guys who were able to see and react quickly, they are already gone or not, and let's see if we are able to repeat that or not.

Moreover, the financial crisis in 2008-2009 seems to have further obscured the visibility as it directed managerial attention towards low cost segments, existing application domains, and Asia as a key market. Furthermore, there was a strong strategic belief at Nokia that the mobile phone devices had reached maturity that put emphasis on retention and incremental variation in capability development, and on cost as the selection criterion.

Secondly, the analysis points out that the external selection criteria started diversifying in the 2000s when the growth of the emerging markets, such as

China and India, put emphasis on different capabilities than the industry evolution in the Western economies. Within the case firm this led to the coexistence of different types of capability requirements and internal selection criteria. On the one hand, the management identified the upcoming shift into a new paradigm driven by the Internet and requiring new capabilities. On the other hand, the growth of the emerging markets enabled the company to gain substantial revenues and profits by applying its existing capabilities to these markets putting emphasis on capabilities related to brand management, channels, supply chain management and scale. While industry evolution in the developed countries would have required the case firm to upgrade its capabilities, e.g., software capabilities, and to develop new capabilities to meet the external selection criteria driven by evolving user trends, the growth of the emerging markets enabled it to gain substantial revenues and market share by exploiting and leveraging its existing capabilities. Consequently, the internal selection criteria became biased by incorrect strategic beliefs and the prevailing performance in the emerging markets and led to a misalignment of internal selection criteria with strategy, which officially was directed towards the convergence of mobile phones, the Internet, and services. As the industry expert reasoned:

Even though 'Life goes mobile' vision has been always talked about since 1997, the capabilities have not been built systematically. Instead, a lot of money has been invested in logistics, rapid product development, R&D of the basic phones and the basic processes. Actually it seems that Nokia has continued to develop the key capabilities it defined in design back in '92, in the product processes in '93-'94, and later in the logistics function.

Consequently, the Nokia case indicates a difficulty in foreseeing and acknowledging that certain capabilities are becoming obsolete if there are regions or markets where these capabilities are still applicable. The Nokia data also indicates that positive corporate performance may obstruct the management from acknowledging the limitations in its own capabilities. Moreover, when changes in the external environment became apparent, Nokia managers identified the need and proceeded with acquisitions to acquire service capabilities, but failed to identify the pivotal role of the operating system capabilities or to acknowledge the limits to their own operating system, Symbian, which had been a core capability at Nokia and which was still viable in the low cost segments targeted at high-volume markets especially in the emerging economies.

Thirdly, the data also reveals that Nokia had taken several initiatives in the 'smart phones' prior to its competitors. However, even though new initiatives related to the smart phones emerged, they did not achieve

sufficient internal support. Therefore, in the absence of adequate selection criteria Nokia's capability development was hampered and consequently, smart phone development was affected by the extant internal selection criteria related to basic phones, further reinforced by the fact that smart phones and basic phone were regrouped into a single business unit in 2007. As an outcome, Nokia continued to rely on its internal capabilities and on the internal selection criteria aligned to meet the requirements of affordable phones, rapid time to market, large-scale production and efficient logistics, instead of realigning the internal selection criteria to meet the requirements of the new generation of smart phones. Consequently, despite a 'Life goes mobile' strategy in place to address the convergence of mobility and Internet, there was a disconnect between the top-down strategy and bottom-up initiatives that failed to meet the internal selection criteria, e.g., in terms of cost, and as a consequence managers failed to recognize the potential in the initiatives that emerged. The analysis also indicates that the variation-based capability development led to an ambiguity in resource allocation. As the company needed to support multiple product lines and variants to address existing product needs, insufficient resources were available for future developments. Instead of supporting smart phone development with high albeit uncertain future potential, resources were dispersed between a large number of product variants corresponding to the existing business and application domains.

Fourthly, it seems that Nokia did not sufficiently extend the scope of its capability development mechanisms. On the one hand, it renounced outsourcing capabilities that were considered as 'core' to deter value capture slipping from mobile phone manufacturers to other actors. On the other hand, the negative economic consequences of acquisitions made in the television business in 1980s, made Nokia cautious with acquisitions and promoted the slower internal capability development. In cellular phone development, the firm was good at taking advantage of external capability networks to access complementary capabilities on a global basis and consequently its capabilities became augmented with those of its supplier network. However, Nokia failed to do the same with smart phone development and the developer community that resided primarily in the US. The adherence to internal mechanisms created a 'lock-in' and slowed significantly the process of upgrading the required capabilities. For example, the technological platforms, prerequisites for rapid product development and time to market, were slow to build and rigid, making radical changes difficult⁶². Finally, however, faced with radical changes in

⁶² Even though the visibility within the industry was perceived as approximately 18 months, and the length of product life cycles a year, development time of new

the environment and due to the long development time of internal capabilities, Nokia was forced to seek key capabilities outside its boundaries to accelerate capability development. These included both acquisitions in services and applications, as well as the strategic alliance with Microsoft for the Windows operating system.

As an outcome, although industry convergence and the arrival of new industry entrants generated a shift in the capability configurations and prerequisites within the industry, the firm continued to rely on its core business logic that was based on continuous product renewals, world-class operations and mainly on internal capabilities. Nokia's internal selection environment, including its resource allocation, had become optimized for this core strategy execution. Having put in place the capabilities and processes to support a variation-categorization strategy, the internal selection environment also became aligned to this type of approach, hampering it from embracing potentially competency-destroying variations and innovations. Moreover, it can be contested that the Nokia's organizational culture registered a high level of internal orientation that led it to overestimate the value of its extant capabilities and to neglect potential competitors, as well as preventing it from acknowledging the augmented role of the external selection environment relative to the internal selection environment. Nokia had been able to drive the development of the mobile telephone market for nearly two decades that had generated a conviction that it could maintain this position based on internal capabilities despite radical changes in the external environment. Moreover, the company had opted for a capability development process that was based on incremental changes, optimizing the exploitation of existing capabilities and shifting the focus on leveraging and protecting its capabilities globally, rather than on building capabilities that challenged its existing business logic or extant selection criteria. Consequently, Nokia's capability development became increasingly determined by its current position within its product and geographic markets.⁶³

It can be concluded that the strategy to support a large product portfolio on a global basis and the mechanisms put in place had set the company on a path that enabled fast responses to evolving market needs that were in line with its extant capabilities. If the mobile telephony market had continued to develop in an evolutionary manner based on incremental changes, Nokia's ability to introduce new variations to address the emerging opportunities with a large product portfolio, affordable prices and rapid time to market

capabilities was estimated at 6-10 years (Häikiö, 2009:131, Doz and Kosonen, 2008:103).

⁶³ See Burgelman's (1996) similar findings on how Intel's strategy making became tied to its existing product market position

would probably have enabled it to stay ahead of its competitors. However, this capability logic hampered its ability to respond to radical changes in the environment, reinforcing its strategic focus and lock-in to basic phones. Finally, the Nokia case points to the difficulties of aligning internal selection environment with strategy within the multinational firm. Even when Nokia recognized the need for strategic renewal, the complexity and coexistence of diversified selection criteria within the MNC context made realignment difficult to accomplish.

5.2 Kone: From Engineering- to Customer- and User-Focused Capabilities

5.2.1 Background and Context

Kone operates globally in the business of designing, manufacturing, installing, maintaining and modernizing elevators and escalators, and had annual net sales of 5,225 M€ in 2011. In addition, it provides services for automatic doors. Kone has been transforming itself from a Finnish, family-owned conglomerate to a globally aligned corporation with subsidiaries in some 50 countries, and at the same time, from an engineering-driven into a customer-focused elevator and escalator company, and has recently repositioned itself in the field of ‘people flow’. Despite its global presence, some 50% of its turnover still comes from its home continent, although this figure has been decreasing in favor of a stronger share of Asia.

Established in 1910, the history of Kone is closely related to the Herlin family⁶⁴. Having been involved in various industries including textiles, clinical chemistry analyzers (Kone Instrument), hydraulic piping systems (GS-Hydro Group), marine cargo handling (MacGregor-Navire), industrial and dockside material handling (Kone Cranes), wood handling in pulp and paper mills (Kone Wood), and a steel foundry, Kone decided to divest its other divisions at the beginning of 1990s and focus exclusively on the elevator and escalator business starting in 1994. Amongst Finnish companies, the Kone Corporation has been an icon for internationalization:

⁶⁴ The Harald Herlin family purchased Kone from its parent company Strömberg in 1924, and it was headed first by Harald and then his son Heikki. Heikki Herlin's son Pekka Herlin served Kone as president (1964-1986) and as board chairman (1987-2003), and initiated Kone's strong international development that took Kone to its position as the world's 4th biggest elevator and escalator company. In 1997 Antti Herlin was nominated deputy chairman of the board and CEO, and in 2003 he became the chairman of the board after his father. In 2000, the authority over Kone shares was transferred from Pekka to his son Antti Herlin that resulted in a severe conflict within the Herlin family. The clash led Kone to acquire Partek in 2002 and divesting it soon thereafter to resolve ownership and authority arrangements.

it was the first Finnish company to internationalize in the late 1960s, a process it aggressively pursued mainly by acquiring foreign companies, sometimes larger than itself, such as the acquisition of the Swedish Asea-Graham in 1968 that tripled Kone's volumes. Other significant acquisitions include the purchase of the European subsidiaries of Westinghouse in 1975, as well as Montgomery Elevator Company, the 4th biggest elevator company in the US in 1994, with an objective to strengthen its elevator operations and market position in North America and to increase the share of North American operations from 10% to 30% of total sales. However, the acquired companies were only loosely integrated to the headquarters. This international expansion based on an aggressive acquisitions strategy, atypical of Finnish companies at that time, gave Kone the status of the first Finnish multinational and fueled the firm's development into a global corporation with operations in some 800 locations globally.

The beginning of the case time was set at 1994 when Kone divested its material handling divisions to focus exclusively on the elevator and escalator business. The elevator and escalator business is divided between new equipment, on the one hand, and maintenance and modernization, on the other. The approximate shares of the turnover are 45% and 55%, respectively. The focus of this study is on the new elevators and escalators side, although service activities will be considered to the extent that they have an influence on the new equipment business.

During the case time the fairly traditional and moderately dynamic elevator and escalator industry went through fundamental changes. The converging global megatrends, such as urbanization, ageing of the population, increasing safety norms, environmental issues, and the ageing of buildings were reshaping the industry, further stimulated by the rise of the Asian markets, notably China. Asia, with its urbanization and the subsequent high level of construction, grew to represent the greatest market and with the most growth potential, the Chinese market on its own representing approximately 30% of the global elevator and escalator business. Therefore Asia, and particularly the market environment in China had a significant impact on Kone's business operations.

The elevator and escalator industry used to be characterized by a large number of locally operating companies because products are closely linked to the highly local and regulated construction industry. However, four companies including the US-based Otis, and the European Schindler, Thyssen, and Kone had been driving the consolidation of the industry, dominating some 60% of the global market. In addition to these European and US-based corporations, Japanese companies, such as Hitachi and Mitsubishi had gained a foothold in the global market as an outcome of the

increasing share of Asia in the elevator and escalator business. In addition, new Chinese companies started to emerge benefiting from the size of the home market. Consequently, competition seemed to be intensifying both between the incumbents as well as from the part of Asian competitors, and the company representatives firmly believed in a further consolidation of the industry, which they considered to lead in a 'survival game' if the market growth was to slow down. While the new equipment business had become increasingly global, the maintenance business continued to be more favorable to local service providers. Like industry consolidation, the high level of industry globalization can be regarded as an outcome of co-evolution between the incumbents' actions and the growth of markets in Asian countries, China in particular.

The shift from a multi-local to a global industry, and the related firm globalization processes put first emphasis on the incumbents' acquisition capability and then on the ability to integrate and reconfigure these companies' operations globally. The consolidation of the industry has led the main companies to pursue similar strategies and business models, putting emphasis on implementation capabilities and operational efficiencies. Furthermore, the maturation of technology has led to technological innovations becoming less frequent. Having access to the same component manufacturers, differentiation based on technical attributes has become more difficult and easier to replicate, forcing companies to look for new sources of value creation, and to build up new capabilities.

5.2.2 Capability Development at Kone (Analytical Chronology)

During the case time (1994-2010), Kone continued to pursue growth both through acquisitions and organic growth, and sought to transform itself from a traditional engineering-driven elevator and escalator company into a more customer-focused and solutions-oriented company. Consequently, during the case time capability development related to the reorientation of the company and was supported by corporate wide programs and processes. While maintaining its role as the technology leader, the objective was to find new sources of value creation and differentiation as well as to attain significantly better profitability rates as theirs were well below the industry leader's.

1994-1997: Innovation and reorganization mark a turning point: Kone becomes the technology leader in the industry

At the beginning of the case time, the firm's operations were largely centered in Europe, which represented 60% of its turnover. Internationalization had been driven by acquisitions and characterized by market and efficiency-seeking operations, as expressed by Kone's managing director:

When I think of the Kone case, we internationalized by buying markets, or we sought to cut costs. Then there were a few very specific cases, where we really bought capabilities, consciously bought new capabilities.

However, at the beginning of 1990s Kone found itself in a difficult market situation as Europe had registered a 40% decline in the demand for new elevators. Despite its strengthened position in the US with the acquisition of Montgomery Elevators Ltd, the US market was traditional, based on hydraulic elevators, with little growth potential. Asia, in contrast, with large infrastructure projects and economic growth in southern China was registering substantial growth. Consequently, the focal point of elevator and escalator demand was increasingly shifting from Europe and North America to Asia, which represented already 50% of new escalator and elevator demand. Kone did not have a strong position in China, so to respond to the rising demand there, the company reinforced its customer service network and established maintenance branches in major Chinese cities, and acknowledged the need to further strengthen its market position through acquisition of companies and expansion of operations in Asian regions, including a decision to enter the Chinese local market with a greenfield investment. The shift of the focal point to Asia with high-volumes but at the same time customers who demanded the highest possible quality forced Kone to further strengthen its capabilities in quality management as well as to introduce new mid-range elevators to the market.

At the same time, Kone realized that its cost structure had become too heavy for the new market context and had resulted in weakened profitability. Starting from 1994, becoming effective in 1996, it performed a major reorganization to cut down costs by harmonizing and streamlining its production and supply processes, enabled by the establishment of the European Union and the removal of trade barriers. Having had manufacturing in several countries in Europe, North and South America and Asia, Kone started concentrating manufacturing in fewer production centers capable of attaining higher volumes and economies of scale. In parallel, a number of existing product families were being reduced first in

Europe and then on global basis. As an example of streamlining on a global basis, the North American and European escalator operations were integrated and provided with global product lines.

Despite its quality improvement process and the initiatives to strengthen its product development output, these efforts were targeted mainly at standard, hydraulic elevators. At this stage, Kone's products were not competitive and the company acknowledged the need to renew its product range and to strengthen its R&D resources. In 1996, the firm managed to introduce a major innovation that transformed the market, Kone EcoDisc, a flat disc-shaped hoisting machine located at the top of the elevator shaft that enabled the development of a machineroomless elevator, MonoSpace, as the control and drive cabinet could be situated on the top floor landing near the elevators entrance. This permanent magnet gearless motor innovation allowed for both space and energy savings and affected the entire industry by creating a completely new elevator segment of machineroomless elevators (MRL) and by becoming the new industry standard in many markets⁶⁵. This almost accidentally born innovation revolutionized the industry, as described by Kone vice-presidents:

If you take this traditional rope elevator, it used to be pretty much the same for 30 years or something like that. Then it was Kone who actually shook the boat. Invented this MonoSpace, new kind of hoisting machines.

In a way it was an accident, but not fully an accident, but enabled us then to create the machineroomless concepts. Nobody came to Kone and asked to develop a machineroomless elevator, but to package it [the hoisting machinery] in a small space and then when installing everything in the elevator shaft we were able to eliminate the machine room and so in a way use this kind of disruptive invention.

In line with the on-going rationalization efforts in Europe, the objective was to create a standardized concept, which was challenging as the main countries all had their own product ranges, local designs and production units. To respond to this requirement of a pan-European product with a standardized visual outlook, Kone used an external design office, as described a senior vice-present in technology and R&D:

It was quite a challenge at Kone because traditionally all the big countries had their own products, their own factories and local designs. It was like a Christmas tree with this and that. And then we wanted to create an entirely new concept that

⁶⁵ The Kone EcoDisc was assessed as the most significant technology in decades and was rewarded as the most innovative product of the year award at a construction exposition in Paris in 1997.

would meet the visual requirements. So in the background was the need to have a good standardized concept that met the European requirements. A Finnish engineer was not able to say what kind of design France should have... So the starting point was to create a European-wide product concept and process, with a well thought-out design.

This innovation marked a turning point for Kone by positioning it as the technology and innovation leader within the industry, with an approximately four-year advance vis-à-vis its competitors in machineroomless elevators. The future product development involved extending the product range incorporating this hoisting machinery to mid- and high-rise buildings as well as developing a 2nd generation machineroomless elevator with a more streamlined supply chain. The MonoSpace elevator, with a streamlined sales-order-delivery and an installation time of only two weeks represented not only a product innovation but also a process innovation. This was also the time when Kone took the first steps in design, as recalled by the senior vice-president in technology and R&D:

It was this MonoSpace machineroomless elevator that forced us to understand design a little bit differently then, at the end of 1990s. But it was an individual thing and then it was in the background again.

Since the 'turning point' in 1997, owing to new products and reorganization, Kone's profit started to develop favorably, in an industry where profitability, however, remained poor due to fierce price and market share competition. By the end of the period Kone became the third biggest company in the elevator and escalator business⁶⁶.

1997-2001: Entry into China and harmonization of processes pave the way for global capability development

Despite the intense market share and price competition between the incumbents in the pursuit of enhanced market position, industry evolution until this date had been fairly linear and predictable. However, at the end of 1990s globalization of the business environment and customers had led to significant changes in the external environment, as stated in Kone's 1998 Annual Report:

⁶⁶ In 1996, with the acquisition of the full ownership the O&K Rolltroppen, a German escalator company, Kone became the global leader in escalators.

Companies in the world are experiencing a period of tremendous change. The pace of globalization of the world's economies is accelerating, with the result that competitive conditions are becoming increasingly open. This development is affecting not only us but also our customer base. Through continuous renewal, we must find to respond innovatively to our customers' changing requirements.

Having built extensive geographic coverage through acquiring independently operating country units, Kone started aligning its global operations for increased efficiency, building its strategy and competitiveness mainly on home-based capabilities, technological leadership and innovativeness. Customers in the construction and property development and management businesses were operating increasingly cross continental boundaries and seeking alliances with global partners. To respond to this trend Kone sought to transform itself into a global organization with uniform business practices and processes. In order to harmonize business practices and processes both internally and externally, Kone put in place the Kone Model, a business process model aimed at the standardization of systems, processes, tools and business practices throughout the organization. As part of this process and as an outward reflection of the harmonization process, the companies within the group adopted the Kone brand name.

Concurrently, Kone strove to balance its resources geographically and defined growth in Asia as its key target. In 1997, Kone established a Chinese subsidiary, opened new regional offices and opened a new elevator and escalator factory in Kunshan to signal its entry into China's domestic market that had become the world's largest elevator and escalator market representing 30 000 units yearly and with high potential for growth. The greenfield manufacturing facility began production in 1998 with plans to supply products to all Asian markets from the Kunshan factory. Kone believed that the strongly developing preconsolidation markets, such as China, offered both high potential for growth and enabled it to achieve substantial economies of scale. At the same time, Kone found its customers in China to be very demanding in product quality and decided to introduce the latest technology to the Chinese market. While reinforcing its presence in Asia, Kone estimated growth potential in South America to be limited and sold its South-American operations, accounting for approximately 1% of the total turnover, to its competitor Thyssen during the autumn of 2001. This enabled Kone to channel resources into other growing markets.

In order to further strengthen its global coverage and to improve its offering Kone entered into global alliances with other companies in the elevator and escalator industry, but also with suppliers and partners from other fields. The most important alliance was made with Japanese Toshiba

in 1998⁶⁷. In 2000, the strategic alliance was further deepened with close cooperation in R&D including a joint development of a global standard escalator and high-speed elevators. In December 2001, the two companies agreed to cross-ownership and an extension of Toshiba's license⁶⁸. The partners' market shares combined, the alliance was the global leader in escalator sales and services, and occupied the third position in the elevator industry worldwide. Another alliance was with MacGregor on elevators suited for marine conditions and handling passenger traffic on modern cruise ships, allowing for a leading position in the highly specialized marine elevator market. In addition, Kone and Nokia agreed on a cooperation to develop a wireless voice and data transmission system based on GSM technology, to support elevator remote monitoring and emergency voice communication systems.

As the elevator and escalator markets in many industrial countries had reached maturity, Kone decided to exploit its existing resources and capabilities through diversification and global expansion to automatic door service. At the same time, it continued a strategy of rationalization and outsourcing production, especially component manufacturing and products based on old technology, and sold several production units to external partners. Strategic component manufacturing was kept as an in-house priority. To maintain its position as the innovation and technology leader in the new industry, Kone's R&D investments shifted increasingly from product development to research in order to develop the next generation of products and services, and to explore emerging technologies from other industries and disciplines in addressing changing markets and customer needs. These included development of computer software to be exploited in elevator and escalator control systems and remote monitoring. In 2000, the firm opened a global software development center in Chennai, India, as part of the global R&D organization. The company also aimed at gaining a stronger foothold in major construction projects.

2002-2004: Strategy in flux

In terms of industry development, the market and growth potential continued to shift even more clearly to Asia, especially China. As markets were stagnant in many industrialized countries, exploiting the growth and the economies of scale achievable in rapidly growing markets such as China offered the most interesting opportunity for the elevator companies. The

⁶⁷ The alliance allowed Toshiba to sell products based on Kone's MonoSpace and EcoDisc technology under its own Spacel brand in Japan, the sales of which amounted up to 10% of Japan's total elevator market.

⁶⁸ License to manufacture and market elevators based on Kone's MonoSpace technology in China for the Chinese market.

Kunshan factory in China was expanded in order to meet the rapidly growing local demand as well as to increase exports to other Asian countries and to Europe. As price competition within the escalator business accelerated, partly because of increasing imports from China, Kone concentrated its standard escalator production for the European and Asian markets in Kunshan and shifted its elevator production to more cost-efficient locations. In addition to China, Kone expanded operations in other rapidly growing markets, India, Russia and the Middle East. In addition, Kone decided to re-insource part of the formerly outsourced capabilities to ensure production capacity in key product development areas.

As part of the harmonization process, Kone put in place Kone Model II, a business-process model, as well as several structural changes. First, it combined the new elevator and escalator business into a single organization, and the service business to another. Second, it integrated all major new equipment production and supply units into a single unit, and service support production and supply facilities into another, with an objective to optimize synergies among the manufacturing units. Third, all R&D units were unified into a global R&D organization. Finally, to coordinate and build up marketing capabilities, Kone established a global marketing unit.

During this period, in 2003, a group of R&D and marketing people started looking at how to improve the visual outlook of Kone products and to integrate design into R&D processes. The launch of MonoSpace with a standardized concept and outlook had provided the company with a positive experience and after a couple years, a meeting was held to discuss the possibility of integrating design into R&D operations to a larger extent, as recalled by the senior vice-president in R&D who organized the meeting:

It was in 2003, when we had this group of marketers and R&D people that started thinking how to implement design on a larger scale. It was not strategic but we started to think how to take better control over it. So it was by no means a top-down but a need-based process. Marketing and R&D started thinking whom it belongs to in order to make it more dynamic and to get more know-how.

At this stage, R&D management defined short-term actions, such as design requirements for each product, including the operating panel, car designs and platform products, as well as long-term objectives, road maps, and the integration of design into the R&D processes. Within the organizational structure, design was planned as part of the R&D department. This process involved determining in-house capability requirements and ownership issues. Within the elevator and escalator industry or among Kone's traditional competitors, Otis, Thyssen, and Schindler, design was not a key

competence or strategic focus, and the Kone managers identified an opportunity to develop and build design into a competitive advantage, as the following quote by the senior vice-president in R&D indicates:

None of our competitors had invested in it, not Otis or the Japanese. They had these kind of individual products, done by individual designers. But they did not have this kind of holistic design and nobody had understood the value of design. So we saw the opportunity to change it [design] into a competitive advantage.

The period under analysis was also strongly influenced by ownership and authority arrangements within the Herlin family and a consequent family conflict, which led to the acquisition, reorganization and divestiture of Partek Corporation. After the resignation of Pekka Herlin from the board and operational activities, and after the demerger of the company into the Kone Corporation and Cargotec Corporation had been announced, Kone moved into a transitional period. In 2004, Matti Alahuhta, an executive vice-president of Nokia Corporation, and the future CEO of Kone joined the board. At that time Kone estimated that the growth in Asia's rapidly growing markets had not been sufficient and this led to several major acquisitions in the area including a joint venture in China (Giant-Kone) to expand the company's sales network and to increase its production capacity, with an objective to target high-volume Asian markets. Acquisitions were also made in India, South Korea and Thailand. The firm also set out to develop its product range to better respond to the needs of different market areas and to access wider markets. During this period the company also faced difficulties in major projects and in 2004 Kone and Toshiba agreed to strengthen their alliance through long-term collaboration in the promotion of high-rise elevator technology, as well as in the bidding for and carrying out mega-projects around the globe on a case-by-case basis. The following year, 2005, can be considered a turning point that marked the beginning of a new era for Kone Corporation and initiated several change activities in order to generate faster growth and better profitability.

2005-2007: Transition period: setting a new course for the company through 'must-win battles'

Matti Alahuhta, a former vice-president of Nokia, became president of Kone Corporation in 2005 and CEO in 2006, which marked the end of the Herlin family reign in daily operations. Although Kone occupied the number four position in the global elevator market, with a 10% market share, it had

witnessed weakened growth and profit development, as stated in the following extract from the 2005 Annual report:

Matti Alahuhta took over as President of KONE at a very challenging time, when pressure for change was created by both the global competitive environment and certain internal forces that had weakened our growth and profit development.

The company headed for a new course with a development and restructuring program to transform Kone into a more global and customer-driven company, adapted to the requirements of global competition. The strategy, revised in the spring of 2005, included increasing customer focus, broadening and improving the product and service portfolio, improving business processes and productivity, reinforcing sourcing power, and strengthening market position in Asia; these were defined as the five change programs or ‘must-win battles’ for the corporation. At the end of 2005, the company reported that the main actions of the development and restructuring program had been undertaken while the implementation continued during the ongoing three-year period.

Kone estimated that an improved customer focus and understanding would enable it to drive structural changes within the industry, as expressed by a company vice-president in marketing and quality:

We can serve our customers better if we understand their needs and requirements. And then we can actually change the structure of the business. So I think that’s really what’s going to be very core.

In order to build up customer capabilities, a greater weight was given to regional customer requirements in the global decision-making processes. Other activities to build up customer capabilities included new customer processes, re-segmentation of the customer base, a new customer relationship management program (CRM), new e-business tools, as well as training for sales people and managers.

At the same time, measures were taken to broaden and improve the company’s product and service portfolio to better respond to local customer requirements in Asia and North America, as well as to strengthen its competitiveness in both volume and high-rise sectors. Consequently, the objective was to address local market opportunities, and at the same time to enhance its economies of scale by deploying global product platforms, which entailed, however, adding more flexibility and adaptability to the global platforms. This objective was attained by putting in place ‘Preferred Offerings’ applied to the new release of the MonoSpace elevators. They consisted of a set of harmonized, predefined packages, which, at the same

time offered customers added value by providing more flexibility, variety in terms of visual outlook, improved performance features (e.g. a destination control system and more space) and shorter delivery times. The following quote indicates how the firm sought to combine adaptation and standardization as explained by the senior vice-president in R&D:

So I think that's sort of changing our thinking also, we are talking more about Preferred Offering but from the customer point of view, not from the supply point of view. But there behind you have to have this kind of global modular technology so you can in an intelligent way combine the elements that make it look very flexible from the customer point of view.

Global competition in the new equipment business, combined with a shift of production to low-cost countries, had intensified price competition in the industry. In order to make its products more cost-competitive and to improve profitability, Kone completed the restructuring of the production network as well as continued to optimize logistics and centralize sourcing, and improve productivity in its installation and maintenance operations through industrialized modernization solutions and module-based maintenance methods.

The Chinese market had grown to represent one third of the global elevator market, corresponding to 140 000 units annually, as opposed to 30 000 units in 1997, and the Indian market was growing rapidly to representing 5% of global sales. The management of Kone realized that market position in China had significant implication on the global market position, as the managing director and the director of R&D in China put it:

The one that wins here wins globally. So we have to beat the main competitors here.

It's kind of like either you are competitive in China, or you're not competitive globally.

In order to improve its position in Asia and to accelerate growth in China, Kone strengthened its local management team in China and transferred the management of major projects from Finland to China. Instead of just replicating existing capabilities, the company realized the need to upgrade its capabilities to succeed in the highly competitive environment, as expressed by the subsidiary managing director:

As you extend in China I believe you have to expand your global capability. [...] It's not a zero sum. [...] it has to be an extension, expansion, sort of win-win, kind of like expanding on both sides to keep up with the capability.

Related to the firm's new strategy was the objective to broaden its capability and competence base geographically and in scope by building competence centers in different locations, as well as to identify the company's 'best practices' and make use of them globally, as the following quote by a Kone vice-president explained in the focus group discussion:

We have this "Kone way" which means that we are now bringing this process architecture and we are really looking at the best business practices. And then strongly pushing those to all the units... There is a drive to build competence centers that would be more [geographically] balanced than the current ones.

Recent innovations included Kone MaxiSpace, a counterweightless elevator, a modernization solution that enabled to install a larger cabin in the same hoistway space, as well as a flat autowalk technology, InnoTrack. However, the maturation of technology and the fact that the incumbents had access to the comparable technology had led to commoditization of end products making product innovation harder to effectuate and easier to replicate, as depicted by the vice-president in R&D and technology:

The competition is coming up with the new technologies, and I think technologies are becoming more and more similar. So having these big differences or big leaps is difficult. I think it's easier and easier to imitate, there's easier access to information and patents, and information is easily available today. And also the life cycle times are getting shorter.

Kone intensified technological cooperation with its strategic partner, Toshiba, especially in double-deck elevators and new escalator products. Moreover, it strengthened its R&D operations in both China and India, in order achieve more input from these markets and to utilize local brainpower, as the senior vice-president in R&D and technology framed it:

But this [R&D] is one of those areas where we cannot totally rely on one location and one team. So it has to be more global. This innovation is something that we are now trying to push, and get more input also from these emerging markets like China and also India. And sort of starting to gain also something from there because they have huge brain power potential and we have been pushing earlier because of it's lower cost and cheaper labor. But now also the brainpower is a very important issue for us.

During the same time period, design entered the top management agenda. A vice-president responsible for design was hired at the end of 2005. When integrating design at the strategic level Kone aimed at building the

capability mainly organically, by establishing superior internal processes, while, at the same time exploiting external networks to enhance its design leadership in the industry. Although design was at first a relatively small function in terms of resource investment, its position at the top of the company hierarchy put it into a position to contribute to the strategic transformation of the company. Design became an integral of the company vision, as the following quote from a Kone vice-president indicates:

We are in a transition period. We are coming from a fully technology-driven company to a point that it doesn't make sense anymore to be that kind of a company and we are now heading to a new direction. And part of that is this design thing.

In 2006, a broad range of visual options for elevator car interiors, ranging from wall decoration to lighting, were launched in Europe. Related to this launch, Kone and the Finnish design company, Marimekko, signed an agreement to start cooperation under license, concerning the decoration of elevator car interiors. Building a design capability in an engineer-driven culture was challenging but the launch received large media coverage and large in-house acceptance, and consequently paved the way for the future development of design, as conveyed by the vice-president for design:

It was a breakthrough in a way, and a driver and an opportunity window to show what design can do in a traditional business like this.

Design capability was built through three dimensions: the traditional industrial design, design management and design leadership. Building up the design capability involved establishing key design processes in a short period of time and with limited resources and personnel. The vice-president in design recalled:

So we have built up our strategy and capabilities at the same time. And processes. So it's been quite an effort to do everything from scratch. Without models or manuals. Design leadership is still kind of inexistent as a field or profession.

Design contributed significantly to the harmonization of the product portfolio. It was soon recognized that design creates value through optimized market adaptation that is likely to improve product acceptance in different markets without compromising the harmonization of technology, global efficiencies or speed to market. The harmonized product offerings, labeled Preferred Offerings, were built on a global design concept, the Four Seasons, that was then adapted to the local market context through a

limited number of local designs that take into account cultural differences, needs and preferences identified through a culture scan and a trend analysis.

The rise of the Asian market had enhanced the global position of the Japanese companies and the presence of the Japanese companies in the Chinese market had contributed to the rise of high quality into an important purchase criterion within the industry. Kone responded to this trend by rapidly introducing new interior designs to the Chinese market and by adapting the Four Seasons concept to the Chinese context as the Four Festivals. Second, the global concept was adapted to the Indian context, with 24 different car interiors that reflected India's four seasons – spring, summer, monsoon, and winter. The adaptation to these contexts entailed defining a global design process, as depicted by the vice-president in design:

How we ended up with this was that we did first a kind of culture scan, going back to the roots of the Chinese culture and also the Chinese architecture, historically, but also understanding how the year runs in the Chinese culture. They have their festivals and they have their highlights, like we have, but they are different. And according to those, we created a sort of idea how to reflect the differences in China. And the next step is that we are going to develop that further and do the same exercise in India.

However, shifting the focus from a technology-driven company to a customer-focused company required both a capacity of the firm to modify its resources and capability base as well as both cultural change and organizational learning to take place. The executive vice-president reflected upon the change in 2006:

It will take a painful change. You need to train your people to think differently and that is always painful. You need to have a new way of doing and new skills and new blood, new people and this kind of things.

The objective was to build the new capabilities on superior internal processes, supported by shared corporate values. Consequently, the end of 2005 also saw the initiation of a process aimed at defining corporate values in order to support the strategy revision and to promote the more customer-oriented operating methods. Moreover, steps were taken to actively support communication of the strategy in the various countries and business units, including internal material and a facilitator's network. Strategy discussions were organized during the year at unit, department, and working group levels to promote adoption of the corporate goals and understanding of how they affect the work of each employee. Strategic renewal was also supported

by large-scale human resources programs, e.g., in 2005, approximately 300 managers from different countries were trained to upgrade their customer relationships and to identify Kone's strategic customers.

2008-2010: Embracing the megatrends through repositioning the company

While the aforementioned corporate development programs were accomplished or well underway, with significant and positive impact on performance, Kone redefined its vision and development programs at the end of 2007 to better address the new business opportunities generated by the global megatrends. A vice-president estimated that in a constantly changing business environment, organizational changes were bound to be recurrent:

Once you grasp something and for example now we have found a model that has taken us past two or three years. We're entering a new phase now; we'll get a new one. And once we start feeling a little bit comfortable with that one, we'll notice that something else has changed again.

An analysis of global megatrends indicated an estimated rise in the urban population from 3 to 5 billion on global basis and an increase of megacities (>10 million inhabitants) to 29 by 2025. The rapid urbanization was expected to put more emphasis on efficient people flow management requiring higher vertical travel, higher speeds, improved space-efficiency as well as enhanced capacity and services to run equipment without interruption. At the same time, increasing demands for energy efficiency, services and tighter safety standards and regulations were directed towards the industry. New equipment sales continued to be heavily concentrated in Asia, while the European market was driven by safety and accessibility upgrades of existing elevators and escalators due to changing demographics and regulations, as well as by increasing requirements for energy-efficient technologies resulting from climate change.

To reflect the aforementioned megatrends and to reinforce its competitiveness, Kone refined its vision and repositioned the company in the field of people flow, with an objective to have a competitive advantage in user experience while having an equivalent performance with its competitors in other key areas. At this time, customer focus, including user experience, people flow solutions, environmental excellence, operational excellence and people leadership were defined as new development areas for 2008-2010, supported by corporate programs and committees, as explained by a company vice-president:

So we have long-term objectives, and these five battles. [...] And then those are divided into practical actions. For example, environmental excellence is divided into five subdivisions, we have project teams and once a month we report to the committee our accomplishments. So how the different actions are taken forward, we have long- and short-term objectives that support the corporate strategy.

The objective was to develop such customer-focused solutions that would optimize the life cycle use of the building and be distinctive in usability. Having already globally harmonized logistics, manufacturing, installation and maintenance methods, the next effort was to create more uniform structures to ensure operational efficiencies. In the field of environmental action and sustainability, the firm continued the development of eco-efficient solutions, with an objective to reduce the energy consumption of its elevators by 50% in four years, and at the same time maximize the eco-efficiency of its own operations.

Kone monitored the legislative and standardization developments related to safety and energy consumption requirements, and sought to influence the development of codes and standards through its active participation in professional associations and standardization committees both nationally and internationally, including ISO and various councils promoting sustainable development. Kone also scanned local product and service requirements to create improved solutions for local needs. In China, the demand for energy efficiency was growing alongside the requirement for space efficiency, e.g., in China the State Construction Commission issued a 'Construction Energy-saving Management Rule', requiring real estate developers to disclose their 'residential energy-savings index' in all future projects. A Kone vice-president in R&D and technology commented:

So really influencing these decision-makers early on when we are working on a new code. We want to drive the code to harmonize it, and make it more global. So we are actively working at the code committees, also together with the competitors.

Kone was able to maintain its position as the technological leader, a position backed up by some 3,000 elevator- and escalator-related patents. As technological innovations became less frequent, the firm's new offering development was directed towards the areas of visual design and user experience focusing on ride comfort and car ambiance through the use of light, color, patterns, materials and sounds, as well as in space and energy efficiency, as reckoned by the vice-presidents in R&D and design:

It's also becoming more and more difficult to come up with this kind of breakthrough innovation [...].

I think that when you notice that we have reached this maturity level in this technology, that it really needs an extra gear to make a breakthrough. [...] But we have other type of innovations too, not just technological. And then, design could be an innovator, if it's used in the right way.

The positioning of Kone in the field of people flow provided the company with an option to expand its core business beyond elevators and escalators in the future. They also strengthened their offering of complementary products and services to create further growth opportunities. An example of this extended offering included a control system solution enabling integration between building door access, elevator performance, and lighting control. At the same time, the company acknowledged the need to extend beyond the boundaries of the firm and rely more on partners for innovation. Kone started looking for new technologies that would enhance the user interface and enable the building up of customer-driven solutions, explained by the R&D vice-president as follows:

I think there are different technologies entering. If you look at elevators 50 years ago, it was more this kind of mechanical component, hoisting functions, ropes, steel structure and less electrical components. Now we go more into this kind of user interface integrating into other building systems, security, safety, artificial intelligence, more options in how elevators work in groups and how elevators are used for different types of businesses. [...] Now we have more and more partners that share the innovations, and how we come up with innovations is typically in this kind of joint project. [...] When you start dealing more with user interface and new technologies, then you have to rely more on partners. And how to apply something where maybe the initial idea has been developed somewhere else and how to integrate that into the elevator and escalator environment and our technology.

At this time, design was recognized as a key differentiator both internally and externally⁶⁹. Moreover, the scope of design had extended well beyond visual outlook, the initial motivation for Kone to start building up design capability. The repositioning of the company in the field of people flow that entailed a focus on user experience further reinforced design with the firm's capability base and gave design capability a key role in the company's future

⁶⁹ Kone Corporation was awarded Good Design awards in 2008 and 2009 for its innovative designs for new elevator design concepts and for its new design signalization series, and is up to date the only elevator and escalator company to have ever received this award

development, as the following quote by a senior vice-president in R&D substantiates:

So [the vice-president for design] took a very strong grip, she was visionary and applied design in a larger extent, so that design was not simply a visual outlook but much more. [...] And now that we talk about the people flow experience, design is even more clearly integrated into this second phase strategy.

In addition to adding value to Kone products, design as a forward-looking capability contributed to the overall capacity of the company to react to external changes, as an indication of how the level of dynamic capabilities may vary between different business units. The vice-president for design makes a case:

If I think of design, I think that our capability has grown faster vis-à-vis external changes. We have been able to react faster to external changes than Kone on average.

However, as the role of design expanded, it became more difficult to manage and control, both geographically and in relation to other business functions as a reflection of the complexity and inertia of the MNC internal selection environment. As Kone vice-presidents reasoned during the focus group discussion:

The top management understands, and design is built into the R&D process. But how to make the significance and the value-added of design to become more concrete at the customer interface, there is still a lot of work to do. [...] We are a house of thirty-five thousand people, and we are used to selling products with the technical specifications

How do you make someone who has 30 years experience in selling screws, nuts and bolts talk about flowers, pictures and emotions?

Consequently, there were large geographical differences on how design was perceived and exploited within different subsidiaries, depending on the prevailing internal environment and top management support. Yet other difficulties arose from determining the ownership of design capability as it was extended within the multinational firm. A company senior vice-president reflects upon the geographical differences:

Then we went to India, and somehow [the vice-president for design] got a really good link to the Indian top management. They understood the concepts and design got the support from the country manager. So [the vice-president for

design] and [the managing director for India] have had a really good collaboration and mutual understanding. [The managing director for India] has given recognition to the design teams, and they have been actively marketing design and made it visible at the frontline. [...] So India is a country that has taken design as a key thing and according to them, it has had a significant impact on upgrading the Kone profile in India. [...] But China has been very reluctant; it's not mature yet. And in the US we are taking the first steps and I think that it's going to work out there, at least the first feedback from customers is very positive.

At the end of the case time, in 2010, Kone's operating margin had reached the level of 14%, and its global market share had increased for four consecutive years, up to 12%. Kone was one of the fastest growing elevator companies in China and became the second largest elevator and escalator company there in 2011 having acquired an 80% share of Giant Kone, a joint venture established in 2005.

5.2.3 Summary of the Focused CMO-Configurations and Within-Case Analysis (Diagnostic Case)

Table 7 summarizes the case periods and CMO-configurations by highlighting key factors in context (internal and external) and capability development.

As the case evidence illustrates, during the case time the main events, or sequences of events, that had an impact on the elevator and escalator industry included: 1) the consolidation of the industry; 2) maturation of the market in Europe and the simultaneous establishment of the EU promoting the standardization of products; 3) ageing of buildings in Europe putting emphasis on maintenance and modernization, further reinforced by the accessibility requirements of the ageing population, and the increasing safety norms; 4) urbanization of Asian countries and the consequent high-volume residential construction and high-level office building construction; 5) environmental consciousness and actions promoting more energy-efficient solutions. Moreover, certain innovations shaped the market, especially Kone's hoisting machinery that enabled the development of a machineroomless elevator (MRL) in 1996, thereby creating a new segment and making it a new market standard.

The high level of consolidation of the elevator industry can be considered a joint outcome of the firms' actions and changes in the institutional environment. Similarly, the high level of industry globalization can be regarded as an outcome of co-evolution between the incumbents' actions and the growth of markets in Asian countries, China in particular. The main external drivers in the industry were, first, institutional, as the removal of

	1994-96	1997-2001	2002-04	2005-07	2008-10
External context (C)	Highly consolidated elevator and escalator industry. Slowdown of the European market, growing role of Asia. The establishment of the EU and the removal of trade barriers enable harmonization and standardization. Low market potential in the US.	Globalization: customers operate increasingly across borders and seek global partners. Intense market share and price competition. Maturation of the elevator and escalator market. The growth of the Chinese market.	Market stagnant in industrialized countries, emphasis on maintenance and modernization. Market growth and potential shifting to Asia, especially China. Other growth markets :India, Russia, and the Middle East.	Rise of the Asian markets: China to represent 30% of the global market. Market growth in China driven by urbanization: high-volume residential building and high-rise office building. Intensified competition from incumbents and Asian competitors.	Global megatrends create new technology and service requirements. Asian market driven by new equipment. European market driven by new requirements related to safety, accessibility and eco-efficiency. Intensifying competition because of economic slow-down.
Internal context (C)	Focusing on elevators and escalators. Internationalization through acquisitions. Subsidiaries loosely integrated to the headquarters. Reorganizing and harmonizing European operations. Reinforcement of the customer service network in China and decision to enter China with a greenfield investment. Acquisition of the Montgomery Elevator Company in the US. Gaining technological leadership with the invention of the machineromless elevator in 1996.	Need to transform into a global organization with uniform practices and processes. Companies within the Group adopt the Kone name. Rationalization of production and improving the efficiency of operations. Diversification into automatic doors. Growth in Asian set as the key target: Establishment of the Chinese subsidiary, manufacturing facility and new regional offices in China. Strategic alliance with Toshiba of Japan and MacGregor. Divesture of South American operations.	Global alignment of operations and business processes. Expansion of the Kunshan factory in China. Decision to set up a joint venture with Giant to expand the sales network and production capacity. Strengthening the Toshiba alliance: co-operation on major projects. Corporate restructuring: New elevators and escalators into a single division. Production and supply into a single unit. Global R&D and marketing units. Changes in corporate governance.	Change of top management. Kone to go through strategic transformation 5 development programs: 1) Customer focus 2) Product portfolio to meet customer requirements in Asia and North America 3) Business processes and productivity 4) Sourcing power 5) Market position in Asia Management of major projects to China. Cooperation with Toshiba on double-deck elevators and escalators. Preferred offerings: global product platforms and modular technology Kone-Giant joint-venture	Kone positions itself in the field of 'people flow'. Five development programs: 1) Customer focus and user experience 2) People Flow solutions 3) Environmental excellence 4) Operational excellence 5) People leadership Kone to acquire 80% of the Giant-Kone joint venture.
Capability development mechanisms (M)	Capability trimming, focus on the core business accelerates capability development. Focus on R&D. Capability reconfiguration and rationalization in Europe.	Putting in place global processes and practices, and balancing resources geographically. Capability trimming: outsourcing of component manufacturing and old technology. Exploiting existing capabilities in automatic doors, extending R&D.	Capability reconfiguration and transfer. Putting in place global business processes and practices. Structural changes to promote capability development, e.g., marketing capability. Re-insourcing component manufacturing to ensure production capacity in key areas.	Active internal capability development and renewal in line with business strategy. Broadening the capability base geographically. Identifying best practices and spreading them globally. Building up capabilities in customer management and design. Transfer of major projects to China.	Active internal capability development to support differentiation based on end-user experience, solutions and eco-efficiency. Capability renewal through partnerships. Development programs divided into sub-programs and supported by project teams and committees. Influencing decision-makers in various committees and associations.
Capability outcomes (O)	Mainly local capabilities, not exploited globally. A global R&D process. The invention of the machineromless elevator. Harmonized and streamlined production and supply processes, improved economies of scale. Material handling capabilities divested.	Kone Model: Global alignment of operations and business processes Investments from product development to R&D and emerging technologies, e.g., global software development center in India. Joint R&D with Toshiba, marine elevators with MacGregor	Kone Model II to harmonize global business processes and practices. Improved capability to meet the local demand in China. Enhanced capabilities in major projects and high-rise technology (str.alliance with Toshiba).	Kone way: global process architecture and diffusion of best practices. Redefinition of corporate values. HRM: internal training and communication, facilitators network. New customer processes. Global product platforms and modular technology. Strengthened R&D in China and India.	Differentiation based on user experience, eco-efficiency and customer-driven solutions. More open source innovations with partners, complementary products and services, extended offerings. More eco-efficient solutions.

Period	1994-96	1997-2001	2002-04	2005-07	2008-10
Capability mechanisms (M) relating to design	Harmonization creates a need and opportunity for design. Capability upgrading: exploiting external design capability.		Identification the potential in product design.	A new vice-president in design, integrating design into R&D processes, building up a design process and strategy.	Design to have a central role in the new strategy in conjunction with R&D. Focus on user experience.
Capability outcomes (O) relating to design	Design used in the development of the MonoSpace, machineroomless elevator to create a harmonized pan-European product.	Limited internal design capability, no design process.	Short-and long term road-maps and actions, a job description for a design manager.	Design process and strategy. Global design concepts, adapted to local contexts (China, India). Harmonized product offerings.	Building up design in the US.

Table 7. Summary of the Case Periods and Focused CMO-Configurations at Kone

trade barriers and the harmonization of codes enabled standardizing product offerings and their underlying technologies, and endorsed global alignment of sourcing, manufacturing and logistics. The second external driver was the growth of the Chinese market and the shift of focus to Asia that had a significant impact on business operations. The third key driver was the globalization of customers and other stakeholders that has advanced the harmonization of business practices and marketing.

While the consolidation of the industry promoted an aggressive acquisition strategy in the race for market presence and position, the subsequent globalization required an ability to integrate and reconfigure the acquired companies' operations globally. As the European and other Western markets became mature and saturated, the focus shifted to Asia, requiring new capabilities from the incumbents. On the one hand, the incumbents needed to address the high-volume residential markets and to cope with cost-based competition from Chinese companies forcing them to improve their cost structures and look for operational efficiencies. On the other hand, to address the high-level office construction and to combat Japanese companies that had a strong position in the Chinese market and that had set new market standards in terms of quality and ride comfort, the incumbents needed to upgrade their capabilities in technology and quality.

In parallel, the consolidation of the industry and the maturation of technology had standardized interfaces and led to an increasing amount of transactions being performed across rather than within organizational boundaries. With access to the same technology and component manufacturers, innovations and differentiation based on technical

attributes became more difficult to achieve. This forced the incumbents to look for new sources of value creation, and to build up new capabilities.

Capability development mechanisms and logics within the case firm

As indicated by the case analysis, both the shift of markets to Asia, as well as the related business strategy changes induced intensive capability development within Kone. During the case time Kone transformed itself from a family-owned conglomerate to a globally aligned corporation and at the same time, from an engineering-driven elevator and escalator company into a customer-focused company. Capability development within Kone was driven by corporate development programs related to the reorganization of the company, and was supported by the establishment of new corporate wide programs and processes.

The consolidation of the escalator and elevator industry since the 1960s had relied heavily on an aggressive acquisition strategy to attain market presence and position. Despite its relatively small size, Kone had been able to pursue an aggressive acquisition strategy, like the other main players in the industry. Instead of internationalizing by replicating its home-based capabilities, Kone internationalized through acquisitions and resulted with a number of independently operating firms. Enabled by the removal of barriers to standardization and motivated by improved efficiencies, Kone's main challenge vis-à-vis its capability development was first, to harmonize business processes and practices, and second, to reconfigure its capabilities globally, build geographically balanced competence centers, as well as transfer capabilities and 'best practices' to and from various geographical units as an example of retention.

At the same time, Kone strove to maintain and develop technological capabilities that were superior to its competitors, and subsequently to drive the industry evolution. Although the company had a lead in technological capabilities vis-à-vis its competitors, the maturation of technology had led to competitors developing and gaining access to technological capabilities comparable with those possessed by Kone. As industry evolution resulted in elevators becoming increasingly built on external modules and components, the ability to access external technology and component manufacturers became key.

Faced with radical changes in its external environment and hampered by internal forces, Kone changed its CEO in order to reinvigorate the company into new growth and profitability. An aggressive acquisition strategy had led to a large amount of local variation in terms of capabilities, products and business processes. These, however, were not exploited on a large scale, but instead led to inefficiencies that prevented the firm from meeting the

requirements of global competition. The company headed for a new course with a development and restructuring program to transform it into a customer-driven and globally aligned company, with global capabilities, business processes and products. The strategy, revised in the spring of 2005, included focusing on a select number of key capabilities, labeled as five 'must-win battles', including customer focus, broadening and improving product and service portfolio, improving business processes and productivity, reinforcing sourcing power, and strengthening market position in Asia.

The growth of new equipment sales to China also had a significant impact on Kone's capability development requiring the firm to both extend and upgrade its capabilities in order to succeed in the highly competitive environment. On the one hand, it demanded the highest technology, quality and execution speed to be able to address the requirements of high-rise buildings. On the other hand, it required the ability to address the high volume mid-range markets forcing Kone to reassess its high technology positioning and to extend its sales and service network. To achieve this goal, it opted for a joint venture with Giant Ltd. in 2005, followed by an increase in its ownership up to 80% in 2011. Like other elevator and escalator companies, Kone used Giant-Kone as its second brand in order to address the lower segments. The ability to access and complement Kone's internal capabilities with those of local actors improved not only the firm's geographical spread within China, but also its capability to address the volume markets and the lower-cost sectors of the market.

At the same time, measures were taken in order to limit the amount of local variation in products and services. The objective was to respond to local market opportunities with global product platforms, which entailed, however, adding more flexibility and adaptability to the global platforms. This was attained by putting in place 'Preferred Offerings' applied to the new release of the MonoSpace elevators. They consisted of a set of harmonized, internally selected and predefined packages, which, at the same time offered customers improved performance features (e.g. a destination control system and more space) and shorter delivery times.

Having set the company on a new course starting in 2005 based on a select number of key capabilities, the objective of Kone was to build new capabilities to support further value creation and differentiation. In the search for more variation and differentiating capabilities, the firm focused on capabilities that it considered to provide the most value-added at the customer and user-interface, such as customer processes, design and eco-efficiency. Kone refined its vision and repositioned the company in the field of people flow, with an objective to build distinctive capabilities in user

experience while having an equivalent performance to its competitors in other capabilities. At this time the company estimated that enhanced customer focus, including user experience, people flow solutions as well as environmental excellence would provide ideal platforms for further capability development. The objective was to develop such customer-focused solutions that would optimize the life cycle use of the building and be distinctive in the user experience. They also scanned local requirements in products and services to be able to offer better solution for local needs.

As technological innovations became less frequent, Kone's new offering development was directed towards the areas of visual design and user experience focusing on ride comfort and car ambiance through the use of light, color, patterns, materials and sounds, promoting the development of design capability. During the case time, the development of design capability went through the processes of establishment and consolidation as a strategic capability. Although design was at first a relatively small function in terms of resource investment, its position at the top of the company hierarchy put it into a position to contribute to the strategic transformation of the company. Although the design capability development was supported by firm strategy, it did not receive unanimous support from various geographical units because of differences in internal and external selection environments.

The positioning of Kone in the field of people flow also provided the company with an option to create more variation and to expand its capabilities beyond elevators and escalators, and to find new application domains for its extant capabilities. As an outcome, the firm strengthened its offering of complementary products and services to address different external selection criteria in new market segments or application domains. At the same time, it acknowledged the need to rely more on partners on innovation, and established partnerships with an objective to gain access to new capabilities and technologies that would enhance the user interface. An example of its extended offering included a control system solution enabling integration between building door access, elevator performance, and lighting control.

During the case time, Kone's capability development was first mainly an outcome of reacting and adapting to the external environment, but became later characterized by proactive internal capability development. Moreover, it was able to manage the diversification of external selection criteria and to develop capabilities adapted to changes in the external environment, such as the market growth and the shift of focus to Asia, while at the same time, retaining capabilities required in other markets. The repositioning of the firm in the field of people flow reflected an opportunity-seeking approach to

capability development: on the one hand, it enabled Kone to use its existing resources and capabilities to address new business opportunities, on the other hand, it motivated the firm to extend its capability base. Although the role of external innovation was not as prominent within the elevator business as in other high-technology industries, the move to solutions and the integration of software into elevators raised the need to rely more on partners on innovation and new technologies underlining a heightened need to complement the internal capability development with access to complementary capabilities.

Internal and external selection environments

The Kone case provides an illustration of a company that was able to build dynamic capabilities to address changes its operating environment and to do it during a relatively short period of time. However, it also illustrates how the internal selection environment affects both strategic renewal and capability development as illustrated by the development of design capability, for example. The objective of this section is to put forward those conditions and contextual factors within the external and internal environments of the case firm that have had an impact on capability outcomes and the evolutionary fitness between firm capabilities and the prevalent selection criteria. While the main drivers have traditionally been associated with the complexity and velocity of the external environment, data analysis indicates that a number of factors can be attributed to the internal selection environment and originate from the alignment between internal selection criteria and strategy.

It can be contested that capability development within Kone was influenced by both serendipity, as illustrated by the invention of machineromless elevator, but also by corporate strategy directed to address market opportunities in China and to reposition the company to ensure future growth. The analysis reveals that Kone's proactive capability development was enabled, first and foremost, by a careful alignment of its internal environment with its strategy. By defining key organizational processes, labeled as 'must-win battles' it was able to ensure that internal selection, including resource allocation, was harnessed to support corporate strategy. Moreover, the establishment of new corporate-wide programs and processes, redefinition of corporate values, as well as intensive training and communication, including internal material and a facilitator network, supported both the alignment of the internal selection environment with strategy and retention.

At the same time, Kone was able to manage the diversification of external selection criteria. Consequently, it was able to develop capabilities in new

equipment sales adapted to changes in the external environment, such as the shift of markets to Asia, while at the same time, retaining capabilities required in other markets, such as modernization and maintenance capabilities. Within the elevator and escalator industry, market growth and technological development were both concentrated to Asia that facilitated the challenges associated with identifying and addressing divergent external selection criteria. Moreover, when identifying gaps within its capability base, Kone was able to complement and combine its capabilities with those of various partners, as illustrated by the Toshiba alliance and the joint venture with the Chinese Giant elevator company.

However, despite the ability of Kone to pursue a strategic transformation as a demonstration of its dynamic capabilities, the organizational change was demanding in the context of the multinational firm. First, there were significant differences as to how well capability development was supported by various geographical units as illustrated for example by the development of design capability. As the role of design expanded, it became more difficult to manage and control, both geographically and in relation to other business functions that pointed to the difficulties in determining the ownership of a particular capability as it is diffused within the multinational firm. Also, as indicated by the data, there were large geographical differences on how design was perceived and exploited within different subsidiaries, depending on the prevailing internal selection environment and top management support. In addition, the study of design capability at Kone also provided an illustration on how the level of dynamic capabilities may differ between different business and geographical units. Second, the Kone data pointed to the difficulties in performing a strategic renewal because of the size and complexity of the multinational firm, as expressed by Kone the executive vice-president in the middle of the organizational change:

This picture is very simple, but execution is very difficult, how to make it happen in the whole company. If you do it just in one part of the company, that will not help. Normally what happens when implementing strategy is that some part of the chain is not exactly understanding it and able to pull in the same direction.

I think that the biggest barrier to change is the slowness of organizational learning.

In summary it can be concluded that during the case time, Kone was able to capitalize on external changes and to build the required capabilities to address changes and opportunities in the external environment. These included the participation in the consolidation of the industry, building up

capabilities required to take advantage of market growth in Asia, especially in the Chinese market, and the recent technological and design solutions to address the management of people flow. As an outcome, Kone was able to influence future selection criteria in line with its resources and capabilities and to benefit from its lead vis-à-vis its competitors. The firm's capability development was supported by the establishment of adequate selection criteria and resource allocation, as well as by an ability to complement its internal capabilities with those of external partners through alliances and acquisitions. At the same time, the Kone case also points to challenges in performing strategic renewal and building a shared vision within the context of the multinational firm because of differences in internal selection environments.

5.3 Iittala: Capabilities to Support Reorientation and International Development⁷⁰

5.3.1 Background and Context

The Iittala Group, which is at present part of Fiskars Corporation, operates in the field of homeware and interior design and includes brands such as Iittala, Hackman, Arabia and Rörstrand with a long history in Scandinavian design⁷¹. In 2009⁷², Iittala's net sales amounted to 143.9 M€, out of which some 80% came from the home markets, Finland, Sweden and Norway. Iittala has had a very strong market position within its home markets, notably Finland, with an approximately 50% market share. During the case time the strategy of Iittala involved leveraging its home market position and at the same time seeking growth through international expansion, and it operated a dual business model with a multi-brand, multi-channel approach in its home markets, and a single-brand, single-channel strategy based on the Iittala brand and its own retail concept in international markets.

The homeware industry is mature and stagnant, characterized by low demand and overcapacity. Confronting a number of locally operating and historically rooted companies, the objective of Iittala has been to outpace market growth and outperform the traditional companies by capitalizing on

⁷⁰ Iittala will be used to refer to the business unit under analysis despite changes in its name and ownership arrangements during the period under analysis.

⁷¹ Rörstrand factory was founded in 1726, Hackman in 1790, Arabia in 1873 and Iittala in 1881

⁷² Since the integration of Iittala as part of the Fiskars Group Home Division in 2009, its turnover has not been separately reported

evolving user trends and by effectively managing the entire value chain, from design, product development, sourcing, production and distribution, to retail sales. The poor quality of distribution and lack of dynamic channels in many countries has prompted Iittala to establish a retail store concept, applied to its own stores as well as to department stores as 'shop-in-shops'. Iittala has also put in place a franchise model in order to be able to expand internationally in a faster and less capital-intensive way. The objective has been to build the Iittala brand internationally and, at the same time, to gain direct access to consumers. The increasing consumer focus has served as a basis for its ambition to establish a product leadership position within the industry.

Partly resulting from the globalization impact, the homeware consumer market has become more polarized, with demand for premium brands and luxury products on the one hand, and low-cost private label and mass-market products on the other. Although differences in country costs have promoted further globalization of the industry, unfavorable logistics and differences in quality have, to some extent, slowed down the process. However, Asia, and especially China, has become an important supply-base for the homeware industry, and low-cost imports from Asia have generated cost pressures to the incumbents. In order to respond to these cost pressures, traditional companies have increased automation, closed European-based factories and shifted their production to Asia, and at the same time increased the extent of outsourcing to adjust their capacities. Iittala has also undertaken some significant industrial reorganization, closing four factories in its home markets during a period of 7 years, and has put in place processes to improve its operational efficiency and use of capital. At the same time, it has rationalized its product offering and cut down the number of its product variants from 17 000 to 3000, and increased outsourcing from 0% to 30% of net sales.

The Iittala Group has also undergone major changes in its ownership structure during the same period. First it was a business division within the Hackman Group. The Hackman Group, established in 1790, was formerly a conglomerate involved in a variety of businesses⁷³, but in early 1990s it started divesting its non-core businesses and starting in 2000 it focused on its two main divisions, Designor, the homeware product division, and Metos, the professional kitchen equipment and systems division. However, the internationalization process of the two divisions was hampered by the company's limited resources, which led the company to look for rearrangements in its ownership structure. In 2003, the Hackman Group

⁷³ Including, e.g., tools for wood processing industry (Hackman TTT), water treatment systems (Hadwawo), and milk cooling products (Eurotanks).

sold its operations to the Italian Ali Group, and in 2004 Iittala Group became independent with an ownership arrangement between a venture capital company⁷⁴, private investors and the operating management. The company targeted listing at the Helsinki Stock Exchange in March of 2007 but was acquired by the Fiskars Group in June 2007 and integrated as part of the Fiskars Home division in 2009. The ownership changes, among others, promoted intensive capability development within the company with an objective to augment the value of the company.

The beginning of the case time was set at 2000, when the strategy for the company was revised. Following a new strategy that became effective in 2002, Iittala started transforming itself from a traditional industrial company to a consumer focused company with retail expertise, and put in place several processes to upgrade and build up new capabilities. The company was acquired by the Fiskars Group in 2007 but was only loosely integrated to this group until 2009, which marks the end of the case time. Capability dynamics within the case firm will be discussed at an aggregate level and at the level of design capability.

5.3.2 Capability Development at Iittala (Analytical Chronology)

During the case time, Iittala's capability development was related to two fundamental and simultaneous developments. First, the firm underwent a strategic transformation from a traditional industrial company to a consumer-driven retail company. Following this strategic shift, Iittala had to build new capabilities and put in place new processes. The firm's core capabilities had historically included superior design, brand management and certain core competences in manufacturing, such as color glazed porcelain, colored pressed glass and glassblowing (mouth-blown glass birds and Aalto vases). Following the strategic reorientation, capability development was directed towards retail expertise and product development, as well as to improve its operations and use of capital. Being a relatively small company with limited resources Iittala had to prioritize internal capability development, as stated by the CEO:

We assess it every year as we go forward; what is our success rate, how much resources we need to put into internal development and how much we can put into expansion.

The second development relates to its international expansion. The shift from an internationalization process based on a limited number of sales and

⁷⁴ ABN Amro Capital

marketing offices to presence in international markets with its own retail stores also had implications on its capability development. The relatively low pace of market expansion and the lack of global head-on competition enabled Iittala to expand gradually and to incrementally develop the required capabilities. However, many of the firm's capabilities resided in Finland and it encountered difficulties in transferring its home-based capabilities to new locations, even to other Scandinavian countries, as acknowledged by the CEO during the focus group discussion:

We have been constantly raising this question of why we are not able of to replicate this [home market] business model. That is just something that we are not capable of.

2000-2003: The revised strategy sets the course for capability development

Accompanied by a change of CEO, Iittala revised its strategy in 2000. The strategy became effective in 2002 and involved seeking strong growth internationally while reinforcing its position in the home markets. It assessed that the poor quality of traditional distribution in many countries did not provide an ideal platform for international expansion or brand building, and consequently, developing a new retail concept was determined as a cornerstone of its international strategy. The objective of the revised strategy was to base the international expansion on the Iittala brand, narrower target group, premium product positioning, and an own retail concept in select focus markets, while maintaining a broad range of brands in the home markets enabled by its strong market position.

Prior to the case time all the different brands within the division had their own production units and organizational structures, and the brands pursued internationalization independently, which had led to a dispersal of resources and mediocre results, as recalled by the CEO:

And they [business units] all had ambition to be successful in home markets and also build international business with these four brands in all the markets [...]. At least for me it was so totally clear that there is absolutely no chance we were going to build four brands with our resources. [...] Internally it was a lengthy and heated discussion and debate, because we had all of these business areas and business heads that had been running their own businesses and own factories. They each had a very strong opinion that their brand was the one that should be chosen.

Other brands were withdrawn from international markets and a number of internationally potential products were consolidated into the Iittala concept

brand extending it beyond traditional homeware products to solutions ranging from cooking to interior decoration.

The company had opted for using external rather than internal designers in the 1990s as they assessed that the use of external designers would enable the company to obtain fresh ideas and exploit capabilities of external actors. Iittala products had been designed to carry a significant amount of both social and cultural capital in line with the design philosophy of each brand and they carefully controlled the design process. Despite the lack of internal designers, Iittala maintained a high level of design capability embedded in the organization, as expressed by the CEO:

When it comes to sort of modern design or Scandinavian design, that's where we are one of the leading companies by any standard, by any measurement [...]. We have always been here and we have a track record and credibility and probably some sort of in-built capabilities and those. Latent knowledge in the company is spread around a lot of people so that we can develop, create, and maintain modern design in our portfolio.

2004-2006: International expansion and building up retail capability

Following the buy-out in 2004, the company continued to aggressively pursue its revised strategy by expanding internationally through direct retail operations and the Iittala brand while leveraging its market leader position in the home markets. The home market business model involved a multi-channel, multi-brand market leader strategy with a large target group and distribution, including mass-market distribution, whereas the international strategy relied on a tightly focused and narrower target group addressed with a single brand and with a tightly controlled retail concept.

Iittala sought to establish a strong retail presence in markets where there was appeal for Scandinavian design and that provided the best application for its capabilities. The objective of Iittala was to target clusters with a 10-15 million population within Scandinavia and Northern Europe⁷⁵ with a 10-20-store coverage, regarded as ideal in terms of purchase potential and for brand building. The objective of the company was to first establish a strong position within these select markets before further expansion to other markets. The retail concept was honed to a franchise model, enabling the firm to expand at a faster pace and with lower capital expenditure. Iittala brand was withdrawn from a large number of sales points to pave the way for their own stores or franchise stores with a considerable impact on turnover. Japan and the US continued to be served as main export markets.

⁷⁵ The specific countries are not indicated due to confidentiality reasons.

The Netherlands was chosen as the pilot market with significant resource investment to build a successful business model and to enable organizational learning to take place. The Dutch market was assessed as having sufficient demand for modern design and the local sales unit was very committed to the new strategy. The lack of historical companies in the market provided a favorable ground for international brands, while, at the same time, the market was competitive as most of the international brands were present. A success in the Netherlands was assessed to pave the way for further expansion.

As Iittala's strategy was increasingly linked to its retail concept, building up the retail capability became a priority for the company, as the CEO reckoned in 2006:

It is this big commitment to retail, own retail concept. [...] For an industrial company with 125 years of history with several factories and lot of history in traditional production industry to suddenly say that we are going to be a retail-oriented company that is going to make this brand internationally available through an own retail concept, was and still is a big bold statement.

Rather than looking at ways of operating within the industry, the company sought benchmarks and best practices from other industries, such as the clothing industry. The company considered itself to be in direct competition with retail stores in the quest for consumers' shopping time and 'share of wallet'. They used external consultants to gain expertise in retail but refrained from recruiting from other industries. Instead, Iittala opted for building up the retail capability internally to enable organizational learning to take place, as expressed by a company director, and member of the executive board:

There has been a lot of discussion on whether we should have recruited external experts, instead of creating the competence [retail capability] internally. The decision that was taken in 2003 was to develop it in house so that it gradually builds into our corporate DNA.

Design capability, deeply embedded in the company, also served as a platform that enabled Iittala to extend the scope of its core business to retailing and consequently, the use of design was extended from product development to shop and service design, as described by a company director:

The role of design, well, it's in our corporate DNA, present in everything, so we don't just design a product but the whole offering [...]. The company has been

changing, we have traditionally been a product and production-driven company and design has been a strong factor. And now that the company has evolved and integrated forward, design has been involved in all these stages. [...] All the way to the customer contact. In fact design is even involved in how the sales people approach the consumer, the way they look and how they talk. So it is not only the product but also the service.

Related to the new strategy Iittala also sought to improve its productivity and render its operations more efficient. These arrangements entailed streamlining internal processes, simplifying structures and optimizing resources between production and sourcing, and included setting up a demand-driven way of operating, more efficient production capacity utilization, industrial restructurings, procurement and increasing the outsourcing from none to 30% of net sales. Iittala closed production plants and established a strategic alliance for cutlery production. The objective was to maintain core capabilities in production to ensure competitiveness and flexibility, but to constantly look for outsourcing possibilities. Moreover, to optimize production capacity Iittala decided to reject investing in more production units or production technology but instead to cooperate with suppliers who could either offer latest innovations in production or provide lower production cost. At the same time the firm started to significantly cut down the number of product variants⁷⁶. A key process, demand-driven Iittala (DDI), was set in place to utilize demand-based information for the forecasting of sales, optimal planning of production and inventory management, in order to improve the performance of the order-delivery chain and the use of net working capital.

2007-2009: Augmenting capabilities underpinning product leadership

In order to optimize home and international operations, the dual operating model was reinforced and became explicit in the organizational structure. The home market operating model involved efficient management of the entire value chain including production, while the international business model relied on the retail concepts used in own stores as well as in selected departments stores as shop-in-shop. The Fiskars Group acquired Iittala in June 2007 to be integrated into the Fiskars Home Division. By the end of the case time⁷⁷ Iittala brands had been only loosely integrated into the company, and Iittala pursued its own strategy and capability development.

⁷⁶ Between 2001-2006 the number of SKU's [stock keeping units] was reduced from 17 000 to 3000.

⁷⁷ September 2009

However, the influence of the parent group started to gradually influence Iittala's operations and capability development.

In terms of capability development, due to limited resources, the management had to be content on strengthening key organizational processes, while accepting to be at good industry average in most corporate processes. The management defined the product development process as a key priority considering it to have the most leverage in both home and international markets. Despite the relatively low renewal rate compared to other industries, 300 new product variants were introduced to the market on a yearly basis providing scope for both enhanced effectiveness and efficiency. Moreover, it was contested that success in retail was increasingly dependent on the product assortment and renewal, as the CEO asserted:

Two key processes, one is the product process, from the creation to selling the product to the consumers and that's where we put most of our energy in and that's where we say that we want to beat everybody. It's our ability to create Scandinavian design and products, and to offer them attractively to our consumers. Then we have operations, inbound logistics, all that what we call DDI, this demand-driven Iittala. How we manage the business, the operations of the company, there we say, okay we want to be at a good industry average, we don't think that we can beat everybody there, but we have to be at a good level, so it doesn't hinder our performance. But the core is in creating that kind of assortment that delivers that turnover per square meter. At the end of the day, no matter how nice the concept is or how nice the experience is, if the products are not satisfying it won't last for very long.

To become the leading company in the product process, Iittala put in place the undisputed product leadership (UPL)-process, a tightly defined product management process. The UPL-process involved refining the entire product management process, from conception and technical product development to the management of the entire product life cycle. The objective was to enhance internal efficiency and to halve the time to market while, at the same time, enhancing the amount and quality of the output. Related to this process the company started shifting from a brand-driven product process to a more consumer-driven process, taking advantage of the customer and 'shopper' data accessible through direct consumer sales.

The retail capability had been built up separately disconnected from wholesale and the brands, and had not become embedded in the organization, as concluded by a company director and executive board member in 2009:

Retail has never been our core competence, Traditionally we have been a production –driven company and I think that the objective of the organizational change was to make it [retail] a priority, an area that we would learn. To be honest, we have not gotten very far with it.

Retail was integrated to the same organizational unit with the Iittala brand to continue to build the capability in conjunction with other capabilities. The objective was to leverage the retail concept and expertise on a larger scale by transferring retail know-how gained from its own point of sales to wholesale operations. At the same time, the retail operations were more closely related to the country organizations. The head of the Iittala operations reflected upon the change in 2009:

And that is a first step towards not having a key capability to reside in Finland. And I am assessing all the time how far to take it. But they have the consumer interface and they see the real need. And we are in a kind of an ivory tower here in Finland, not in the middle of action, so they have the best vision.

While continuing to build the retail expertise, the focus increasingly shifted to a direct consumer strategy with the MyIittala concept. The objective was to manage the consumer contact through multiple channels, including own retail stores, partner stores and the Internet. Following changes in technology, the arrival of the Internet and the rise of social media, the consumer interface had increasingly moved to the Internet. As to design, Iittala managers realized that they had externalized too much of design capability. A director commented:

We realized that we were lacking people with design education now that we use external designers and don't have internal designers anymore. We have a lot of tacit knowledge, gained over the years. [...] But I think that we externalized too much of the design capability.

To reintegrate design, Iittala hired a design director to strengthen design in the company and to make it an integral part of the product development (UPL) process.

These changes were, in part, an outcome of the Fiskars acquisition. With an objective to unify the strategies and structures of the two companies, the Iittala organization structure was modified to be more product- and wholesales-driven. Retail capability became divided between sales and marketing, which in part affected the implementation of the retail strategy and the development of retail capability.

5.3.3 Summary of the Focused CMO-Configurations and Within-Case Analysis (Diagnostic Case)

The following table summarizes the case periods and CMO-configurations by highlighting key factors in context (internal and external) and capability development.

Period	2000-03	2004-06	2007-2009
External Context (C)	The homeware industry mature and stagnant with overcapacity and strong seasonality. Geographic diversity with locally operating companies. Industrial restructurings to exempt overcapacity within the industry because of low demand.	Evolving user trends and buying habits. Polarization of the consumer market between premium and mass-market brands. Traditional companies to close European-based factories, increase automation and shift production to Asia. Increasing outsourcing within the industry to adjust capacity. Asia becomes an important supply base: the rise of private label brands and low cost imports from Asia.	Acquisition by the Fiskars Group. Enhanced competition from other brands in Scandinavian design. Changes in technology, the Internet and social media move the consumer interface increasingly to the web. Need to manage the consumer contact through multiple channels. Financial crisis in 2008.
Internal Context (C)	Strong home market position. Low level of international operations, mainly exports. New strategy to become effective in 2002. Strong international growth while leveraging the home market position. Focus on the Iittala brand in international markets and withdrawal of other brands from international markets. Own retail concept to upgrade distribution and build the Iittala brand.	Iittala to become an independent company with an ownership arrangement between a venture capital company and operational management. Pursuing a strategy of incremental international expansion through own retail presence. Management undertakes industrial reorganization and sets up a process to improve operational efficiency and the use of working capital. Industrial restructurings and increasing the amount of outsourcing to 30% of net sales. Rationalization of the product range.	Integration into the Fiskars Home Division. Seeking for synergies between the Iittala and Fiskars brands. Strategy to establish a product leadership position within the industry and to reduce time to market by 50%. Maintaining the dual operating model: international/ home-market. Process of international expansion slowed by financial crisis. Focus on direct consumer strategy and multichannel approach: retail/ wholesale/ web-based selling.
Capability development mechanisms (M)	Capability variation in home markets: control of the entire value chain from design to retail. Focus on select capabilities in international markets. Building up retail capability.	Intensive capability development. Building up retail capability and extending it through franchising, using the Netherlands as a pilot market to generate organizational learning. Capability renewal in operations management: streamlining processes, simplifying structures and optimizing resources between production and sourcing (DDI).	Consolidating Iittala and Fiskars capabilities. Upgrading capabilities underpinning product development and management (UPL). Developing and leveraging retail capability in key markets and country organizations, retail capability driven by the Netherlands subsidiary. Scaling retail capability to other channels. Maintaining capabilities and processes related to operations management (DDI). Building up consumer understanding.
Capability outcomes (O)	Focus on product development, retail, brand management and some specific capabilities in production (color-glazed porcelain, colored glass, glassblowing). Internal retail capability and a franchise model in retail.	DDI-process to improve capabilities related to the order-delivery chain, increasing outsourcing. Reducing the number of product variants from 17000 to 3000. Strategic alliance for cutlery production. Focus on key capabilities in production while looking for external capabilities in other production technologies.	Capability transfer to and from the Fiskars Group, e.g. operations and product development. New product development and management process (UPL): a refined product development process from conception to the management of the entire product life cycle. Transferring a key capability to a country organization: locating retail capability in the Netherlands. Applying retail capability to partner stores as shop-in-shop. Processes to gather consumer and shopper data.
Capability mechanisms (M) relating to design	Design capability renewal through externalization	Redeployment to retailing.	Integrating design into the product development process (UPL). Hiring a design director in 2008.
Capability outcomes (O) relating to design	Focus from internal to external designers to take advantage of external design capabilities.	From product to service and shop design. Design of the Iittala concept brand.	Reinforced internal design capability.

Table 8. Summary of the Case Periods and Focused CMO-Configurations at Iittala

As discussed above, the homeware industry was mature and stagnant and the most significant changes within the industry during the past years related to structural changes caused by globalization. The rise of Asia and other low cost locations as important supply bases, enabled by lack of government restrictions and motivated by differences in country costs, had increased the number of private label brands and generated cost pressures for the homeware companies. Affected by low demand, the traditional industry actors were obliged to reorganize their industrial structures, close European-based factories, rationalize product ranges and increase the amount of automation and sourcing to improve their cost base and to adjust their industrial capacity. As economies of scale had become relatively important for certain products, some lower-end industry actors focused on one category, such as glass, metal or porcelain with automated production. Although differences in country costs had promoted globalization of the industry, unfavorable logistics and differences in quality had, to some extent, slowed down the process. Moreover, apart from the increase in global sourcing, the industry remained relatively intact to other globalization effects, and can therefore be characterized as multi-local with a large number of local and historically rooted companies.

At the same time, and partly as a consequence of the globalization impact, the consumer market became polarized. On the one hand, the rise of private label brands and increased automation had promoted the commoditization of the industry. On the other hand, there was increased demand for premium brands and luxury products. These evolving user and buying habits motivated Iittala to capitalize on its capabilities in modern Scandinavian design, and to seek growth through international expansion. The objective of Iittala was to outpace market growth and outperform the traditional companies by effectively managing the entire value chain, from design, product development, sourcing, production and distribution to retail sales.

Capability mechanisms and logics within the case firm

As the data indicates, the case time corresponds to a time of active internal capability development within the case firm driven by its business strategy change. Prior to Iittala's strategic change, the company's different brands had their own production units and organizational structures, and had pursued internationalization independently, which had led to a dispersal of resources and mediocre results. However, in 2002, the firm started executing a revised strategy to seek growth by expanding internationally through direct retail operations and the Iittala brand. Other brands were

withdrawn from international markets and a number of products from these brands were consolidated into the Iittala brand. While industrial restructurings can be considered as a reaction to stagnant demand and low-cost imports from Asia, the strategy to address market opportunities internationally was primarily driven by the firm's objective to generate growth by taking advantage of its unique capabilities within Scandinavian design. Active capability development was further motivated by the arrangements where the operating management shared the ownership with a venture capital firm with an objective to maximize the corporate value for future listing.

During the case time Iittala aimed at transforming itself from a traditional industrial company to a demand-driven product and retail expert and reinforced its international presence with the Iittala brand and with its retail concept. In order to achieve the objectives set out by its new strategy, Iittala executed a dual business model with implications on its capability development. The home market business model involved a multi-channel, multi-brand market leader strategy with large target group and distribution, including mass-market distribution, whereas the international strategy relied on a focused and narrow target group addressed with a single brand and with a tightly controlled retail concept and channels. Backed up by a very strong market position in home markets, the objective of Iittala was to leverage its home market position with variation-generating mechanisms, while building its international expansion of selected variants. As an outcome of the variation-generating activities, Iittala put into the market some 300 product variants on a yearly basis with the largest possible distribution channels, with the objective to outpace their competitors in this established and mature market. Moreover, the home market business model involved retention of key capabilities related to the efficient management of the entire value chain from design, product development, sourcing, production and distribution to retail sales. The international business model, in contrast, relied on internal selection, involving a focused and narrower target group addressed with a single brand and on direct retail channels. Moreover, in international markets, to promote organizational learning and because of limited resources, Iittala decided to target a select number of markets that it estimated to have sufficient appeal for Scandinavian design and that provided the best application for its internal and home-based capabilities.

In order to support its capability development, Iittala undertook three substantial development programs. The first was related to the industrial reorganization of the company and involved establishing a process (DDI) to improve the order-delivery chain as well as to rationalize the product range.

At the same time managers decided to prioritize key capabilities in production while increasing the amount of outsourcing both to access external innovation in production technologies as well as attain enhanced efficiencies. The second development program involved transforming the company into a retail expert and building up internal retail capability. Iittala's integration downstream was driven by the need to build retail capabilities that were not sufficiently distributed within the homeware industry. Finally, the third development program (UPL) entailed establishing a product leadership position within the industry.

Iittala's core capabilities had historically included superior design and certain core competences in manufacturing, such as color glazed porcelain, colored pressed glass and glassblowing. In order to pursue its business strategy change, the company set out to build and reinforce its capabilities in supply-chain management, product development and retailing. Building retail expertise was a significant commitment in Iittala's strategy, which motivated the company to look for business models and best practices from companies in other industries. When repositioning the firm as a retail expert, Iittala extended the use of design from product development to designing the shops, services, and customer encounters.

Iittala also started to seek complementary capabilities outside its own boundaries. Consequently, it undertook major industrial restructurings as it closed four factories and increased the share of outsourcing from 0% to 30% of net sales in five years. The objective was not to invest in more production facilities or technology, but to constantly look for outsourcing possibilities in order to access the latest technologies in production, while keeping the production of those items that could be priced high enough to carry the cost of labor in Finland. Moreover, Iittala extensively exploited external capability networks to support its core capability, design.

In summary, pro-active capability development to address new business opportunities characterized the behavior of the case firm during the case time. Being a relatively small company with limited resources Iittala had to prioritize the development of those capabilities and organizational processes that it assessed to have most leverage in home and international markets. Consequently, whereas Iittala's capability logic in the home market relied on variation and retention enabled by its dominant position in the market, its strategy in international strategy was based on selected capabilities, products and distribution channels.

The internal and external selection environments of Iittala

Iittala's capability development efforts generated both satisfactory and unsatisfactory capability outcomes. While the development programs

related to supply-chain management (DDI) and product development processes (UPL) were assessed as successful, the firm did not manage to build up a satisfactory level of retail capability during the case time. The objective of the present study is to discuss the underlying reasons as well as to put forward those conditions and contextual factors that had an impact on capability outcomes. In the Iittala case, the data analysis indicates that the majority of factors originated from its internal selection environment.

First, the data suggests that the capability development was affected by a lack of unity within the organization. Whereas the DDI- and UPL-processes attained uncontested support throughout the organization, the internal selection environment, affected by the underlying power distribution, was divided and equivocal towards retail capability development. Consequently the home vs. international markets, as well as the retail vs. wholesale dichotomy hampered the development of the retail capability. As an outcome, there was an attempt to build the retail capability disconnected from wholesale and the brands, deterring it from becoming embedded in the organization. An Iittala director commented in 2009, five years after the new strategy was put in place:

It was like a huge ski race, the home market versus international strategy, and the vision how to manage it was very polarized. And I don't think that we managed to get a shared vision until last year.

Second, whereas substantial organizational resources were directed towards the DDI-and UPL-processes, the establishment of point of sales absorbed most of the corporate resources and insufficient resources were directed towards building internal retail capability. Moreover, the retail capability proved to be dependent on other supporting capabilities, especially product development capability. However, product development at Iittala was traditionally driven by design and product concepts rather than by retail requirements that did not result in an optimal product range and renewal from the retail perspective. Therefore, insufficient support from other capabilities, product development in particular, also affected the development of retail capability and as an outcome the implementation of retail strategy was hampered. The data also indicates that adhering to internal development slowed down the development of retail capability and that acquiring external expertise could have accelerated the process. The data analysis also hints that building up retail capability was insufficient to support the international expansion of the company resulting from the limited amount of resources. Instead, combining its capabilities with those of external partners, e.g., within the distribution network would have

facilitated and accelerated the international expansion of Iittala. An Iittala director reasoned:

The retail has been a painful process, because we did not have the capability. And we tried to build it ourselves and it takes time. [...] The learning process is so slow and you make so many mistakes. I would have invested [in the capability]. If you decide to do something, then you should be ready to invest.

At the end, the acquisition by Fiskars also had an impact on the retail capability development and the implementation of the retail strategy had to yield to other priorities. As an outcome, the focus shifted from retail to wholesales, and to the UPL-process. At the same time retail capability was transferred and retained in wholesales.

Third, it seems that Iittala perceived international markets as opportunities to leverage its home-based capabilities and chose markets that provided the best application for these capabilities. Consequently, capability development within the Iittala case was, to a large extent, headquarters-driven, and combining local capabilities with its home-based capabilities or locating key capabilities to country organizations was not prioritized until later in the development process. Moreover, the data indicates that Iittala did not pay sufficient attention to adapting capabilities to the local context, e.g., it approached Scandinavian countries as a home market but failed due to significant differences in the market context and its position within these markets. Finally, compared with the two former cases, Iittala, despite its unique capabilities, was not in the position to shape the markets or modify external selection criteria because of its limited resources outside its primary home market, Finland.

Next, these within-case analyses will be followed by a cross-case analysis.

5.4 Cross-case Analysis

5.4.1 Capability Development Mechanisms and Processes

The data analyses put forward illustrated how changes in the business environments or strategies generated intensive capability development within the case firms. As pointed out, there were a variety of mechanisms available to and employed by the case firms. These mechanisms were either internal to the firm, or as demonstrated by case evidence, they increasingly related to the external network of the MNC. The mechanisms that were mainly undertaken by the headquarters organization involved the establishment and development of new capabilities, as well as strategies to

redeploy existing capabilities to new product or service markets, or decisions to divest capabilities. The attempts to renew or transform the firm's capability base were also directed by the headquarters organization. Although the headquarters exercised high command on capability development within each case firm, the detailed case analyses also illustrate that the majority of the multinational firms' capability-related actions explicitly involved its subsidiary network. These capability mechanisms did not simply include replication and adaptation of capabilities to various contexts, but rather, these mechanisms increasingly included integration and reconfiguration of geographically dispersed capabilities, as well as accessing local capabilities and combining local capabilities with those transferred from the headquarters, to form 'global capabilities'.

The case evidence indicates that although the firms may have succeeded in expanding internationally by replicating their home-based capabilities, this mechanism became challenged along with changes in the external environment. Both the globalization of the industry, including mounting competitive pressures and the shift of markets to Asia, as well as dialectical forces from Western economies compelled the case companies to revise their capability strategies and to undertake development programs to build new capabilities. These developments required putting in place business processes aimed at the standardization of systems, processes, tools and business practices throughout the global organizations. At the same time, to further reinforce the value creation potential of the subsidiary network, activities were directed towards building up geographically balanced competence centers as well as organizing for the transfer of capabilities and 'best practices' between various geographical units.

Capability management related to the subsidiary network also involved balancing between global and local capabilities. While aiming at establishing 'global' capabilities independent of the home base and applicable to multiple contexts, the case firms encountered difficulties in responding to specific local market conditions. Consequently, in order to optimize market growth, they were often obliged to give greater weight to regional market requirements in the global decision-making processes as well as to adapt or build new capabilities in order to better respond to local requirements. For example, the geographical shift of new elevator and escalator markets to China had a significant impact of Kone's capability development requiring it to both extend and upgrade capabilities in order to succeed in the demanding environment. Moreover, it established a joint venture with a local company capable of providing complementary capabilities to succeed in the highly competitive volume market.

Moreover, some of the case firms realized the need to increasingly use subsidiaries as a ‘competence-creating’ force, e.g., the fact that China served as a lead market in the elevator and escalator market enabled Kone to build and upgrade its global capabilities in this specific market and take advantage of these capabilities in other markets. Especially in R&D capabilities, both Nokia and Kone aimed at getting greater input from the emerging, high volume markets, such as China and India. Moreover, as part of the global reorganization of activities, the management of major projects and the development and production of escalators in the Kone case and the development and production of entry phones in the Nokia case were moved to China⁷⁸. Likewise, the Dutch subsidiary played a key role in Iittala’s capability development processes related to its retail capability.

The case evidence also reveals that the firms were obliged to increasingly extend beyond the boundaries of the firm to access complementary capabilities. The mechanisms related to the external networks and targeted at gaining access to new capabilities included licensing, outsourcing, acquisitions as well as various forms of cooperative arrangements (e.g. alliances). Other mechanisms that were increasingly gaining ground and some of which challenge conventional business logic include co-opetition, as well as mechanisms aimed at extracting value from competitors through patent and IPR management as exemplified by the Nokia case. The activities to reach outside the firm boundaries to access key or complementary capabilities were motivated by both enhanced speed as well as the possibility to access external innovations. Especially when faced with radical changes in the external environment, and because of the long development time of internal capabilities, the case firms increasingly sought external capabilities to accelerate capability development. At the same time, exploiting external capability networks enabled these firms to access external innovation as well as to explore emerging technologies from other industries and disciplines without heavy internal investments. Likewise, the increased focus on solutions led the case firms to seek complementary capabilities within the eco-system and prompted them to look for new collaborative and co-opetitive arrangements. Finally, the activities directed towards the external environment included monitoring the legislative and standardization developments and seeking to influence the development of codes and standards through active participation in professional associations and standardization committees on a global basis as illustrated by both the Kone and Nokia cases. Although the primary motivation

⁷⁸ Of the complementary cases involved in the project but not included in the final case sample, Wärtsilä, shifted the entire ship building division to China because of the concentration of shipyards in Asia, and Perlos, following the acquisition by Lite-On, moved its headquarters to China to be closer to the customers.

underlying these mechanisms dealt with enhanced value creation or speed, some of the mechanisms, such as outsourcing, licensing or effective IPR management, also enabled case firms to extract value from their extant capabilities or to optimize their capability investments.

As the above analysis and the focused CMO-configurations indicated, when considering the firm's entire capability base rather than taking individual capabilities in isolation, mechanisms and outcomes did not occur sequentially, but instead multiple mechanisms were simultaneously present in most cases. Consequently, in addition to the capability life-cycle model (Helfat and Peteraf, 2003) that suggests fairly linear stages of founding, development and branching of individual capabilities when influenced by internal and external selection events, at the level of the capability base the development proceeded in multiple overlapping sequences involving actions such as renewal, reconfiguration, reorientation or trimming of the capability base in line with the firm's strategic orientation, or as a response to external changes. The changes in the external environment included both long-term changes, such as the maturation of the industry or a geographical shift of major markets that forced the company to look for new strategies and capabilities, or competitive moves that prompted more immediate action. Consequently, both active internal capability development as well as reacting to the external environment, characterized the behavior of the case firms. However, in all the cases, capability development was subject to various conditions and contextual factors internal and external to the multinational firm. Next, this cross-case analysis will highlight various factors or conditions that had an impact on capability outcomes and point to the necessary and contingent conditions related to the various mechanisms and capability outcomes.

5.4.2 Internal and External Contexts and Conditions

As illustrated by the case analyses, the complexity of the context internal and external to the MNC gave rise to various mechanisms that neutralized or counteracted the capability development mechanisms put forward by the firm. The internal factors or conditions related to managerial cognition, the selection criteria alignment and internal, structural 'fit' as well as the scope of capability development mechanisms, including access to external capability networks that emerged as the internal and necessary conditions underlying capability development. The external, contingent conditions, instead, related to the dynamism, complexity and maturity of the external environment, as well as to its level of globalization, competition and market disparities.

First, the analysis across the case firms indicated that because of the long lead-times, capability development was dependent on the firm's ability to identify key capabilities for future development and to build the required capabilities that address changes and opportunities in the external environment prior to its competitors thereby emphasizing the role of managerial cognition. Within the present study, the case periods included both periods of proactive capability development, driven by strategic foresight, as well as periods of more reactive behavior influenced by the external environment and firm's current performance. As indicated by the case analyses, when the companies were able to anticipate, and consequently to capitalize on major changes related to the transformation of the industry they were in a position to internally develop the required capabilities prior to their competitors. A Nokia strategy director commented on the changing competitive landscape:

The question is how much vision and foresight can be considered, and in the long term, that is possibly the only thing that matters. Everything can be imitated, it is just a question of time. Whether you can keep on running faster and evaluating directions.

At the same time, the data also provided examples where firms had demonstrated a high level of strategic foresight or dynamic capabilities during certain case periods, but failed to recognize the speed and magnitude of the changes at other case periods with an impact on capability development and performance as well demonstrated by the Nokia case. On the one hand, the case analyses provide evidence of how insufficient attention to specific geographic or product markets hindered capability development with global implications, while, on the other hand, managerial attention and sensitivity to lead markets such as China potentially contributed to capability development on a global basis. Moreover, the data showed how the positive corporate performance at a given time affected managerial cognition and led managers to overestimate or misjudge the value of their extant capabilities. Related to managerial cognition are the strategic beliefs within the firm, for example, in the Nokia case, the management strongly believed that the global mobile phone device business had reached maturity and opted for a capability development process that was based on incremental changes, optimizing the exploitation of existing capabilities and shifting the focus on leveraging and protecting its capabilities globally, rather than on building capabilities that challenged its existing business logic or extant selection criteria.

Secondly, this study indicated that capability development within the case firms was also dependent on the scope of development mechanisms available to the firms, including access to external ecosystems or capability networks, as the industries were undergoing major changes. Especially within high-velocity environments, the required capabilities were increasingly outside the boundaries of the firm, calling for various forms of partnerships to access the required capabilities or external innovation. An adherence to internal development created lags in the development process and impeded the firms from attaining a fit with a changing environment. The case evidence showed how the lack of resources or negative experiences from former acquisitions refrained firms from proceeding with acquisitions to obtain the required capabilities and locked them into the slower internal capability development path, e.g., the risk aversion affected Nokia's capability development processes and created a lock-in to internal capability development. At the same time, these findings also point to the stickiness of organizational resources and capabilities and the long-term consequences of internal selection as the development processes of various capabilities were largely superior to the length of product life cycles or the visibility within the industry⁷⁹. Therefore, as the data illustrates, when the firms were able to complement and combine their capabilities with those of external partners the development processes were significantly accelerated. Consequently, despite the fact that competitive advantage and superior performance were associated with the internal and idiosyncratic capabilities, due to the long development times of internal capabilities, the firms increasingly sought capabilities outside their boundaries to speed up capability development.

Thirdly, the cross-case analysis also demonstrated that capability development outcomes were dependent on how well the selection criteria was aligned with strategy. Within some case periods, an obstacle to capability development proved to be internal selection criteria that continued to reflect prevalent external criteria instead of being aligned with future external selection criteria. The data from this analysis revealed that even when companies acknowledged the upcoming changes within the industry they continued to apply extant selection criteria to future projects, e.g., within Nokia smart phone projects were affected by selection criteria that related to the basic phones, such as cost. In contrast, when the case firms managed to determine key organizational processes, or tightly couple

⁷⁹ For example, the operating systems and technological platforms were slow to build and rigid, making radical changes difficult as indicated by the Nokia example, in general, the visibility within the industry was estimated at 18 months while the development of new capabilities could take 6-10 years (Häikiö, 2001c, Doz and Kosonen, 2008).

capability development with the business strategy the case firms were able to ensure that internal selection, including resource allocation, supported corporate strategy and the future development of the company. Moreover, positive capability outcomes were attained when the alignment of the internal selection environment with strategy was further reinforced by the establishment of corporate wide programs, definition of corporate values as well as by intensive training and communication programs, as is well illustrated by the Kone case.

However, the findings also indicated that there were different selection criteria operational within different business and geographical units. Therefore, the case firms were faced with diversification of both internal and external selection criteria because of operating in different contexts (e.g. developed vs. emerging markets). The coexistence of diversified selection criteria within the MNC context amplified the difficulty in aligning internal selection criteria with strategy. Moreover, as illustrated by case evidence, various geographical units did not uniformly support the development of specific capabilities. As a consequence, there were significant differences on how a capability was perceived and exploited within different subsidiaries, depending on the prevailing internal selection environment and country management support, as indicated by design capability development in the Kone case for example. Furthermore, capability development was often headquarters-driven, and building local capabilities or locating key capabilities in country organizations was not systematically on the corporate agenda. In some cases this resulted in a low adaptability to the local context and a poor external fit within a specific market.

The data also pointed to the importance of structural and cultural fit, which proved to be influential to capability outcomes when performing a radical change or transformation that required a disruption in the extant resources and capabilities of the firm. However, the case evidence also indicated that structural changes were overemphasized and frequently undertaken by top management to support changes in strategy. Therefore, findings were somewhat contradictory as to the role of structural changes in supporting capability development. On the one hand, the data suggested that if new business or capability development was structurally separated from the core business, on some occasions it protected the capability development from internal competition for resources⁸⁰. On the other hand, the isolation of a specific capability to a separate unit also hindered its development if the capability was dependent on other surrounding or supporting capabilities within the firm. Data also hints that the impact of

⁸⁰ See also Burgelman (1996; 1983b) for findings on Intel.

the structural changes were not always positive, but instead deterred capability development at some occasions mainly because of the period of turmoil it generated. As opposed to structural changes, process congruence seemed to be imperative to capability development, especially when integrating new capabilities to the firm's capability base. Moreover, as changes in the resource and capability base of the firm implied both cultural change and organizational learning, the findings highlighted the necessity to undertake programs to define corporate values and to set up extensive communication and human resources programs. This case research also highlighted the significance of process specificity and ownership designation to support capability development. As the role of different capabilities diffused within the multinational firms, they became more difficult to manage and control, both geographically and in relation to other business functions without a clear process or ownership designation. Moreover, capability development was subject to conflicts originating from the power distribution that led to a divided and equivocal internal selection environment in some cases.

Finally, the findings indicated that the observed capability outcomes were contingent on selection events originating from the external environment of the firm, including the institutional-, technological-, competitive or market environment of the firm. The external environment has commonly been described in terms of its dynamism (Eisenhardt and Martin, 2000), uncertainty (e.g. Cantwell *et al.*, 2010) or maturity (industry life-cycle theories such as Abernathy and Utterback, 1978; Utterback and Suarez, 1993; Klepper, 1997). This study found that the external, contingent conditions also relate to its level of globalization and market disparities. First, these findings indicate that globalization of markets has both increased the number and impact of selection events because of the increasing amount of external stimuli as well as the interdependencies of markets and competition, e.g., environmental shocks seem to have gained in magnitude because of interrelationships between markets and actors. Moreover, in addition to complex technological and institutional change, the Internet proved to be emerging as an undercurrent to complex changes involving changing user trends and behavioral patterns and generating uncertainty. Consequently, relatively minor changes in technology or behavioral patterns led to important changes and speciation events (Adner and Levinthal, 2002), as they diffused globally. As a result, external selection criteria proved to be constantly evolving and shifting making capability outcomes difficult to predict. As an outcome, the case firms experienced selection events frequently and repeatedly leading to both capability gaps as well as capabilities becoming obsolete.

Moreover, the analyses indicate that the external selection criteria started diversifying in the 2000s when the growth of the emerging markets, such as China and India, put emphasis on different capabilities than the industry evolution in the Western economies, further amplifying the complexity and uncertainty of the environment. Consequently, the case firms needed to address different external selection criteria and the capability outcomes became dependent on the appropriate mechanisms-context relationship. Moreover, the market disparities also gave rise to dialectical forces. For example, the emergence of the smart phones, which addressed a new application domain and combined capabilities from new industry entrants with those of their extended networks, generated a dialectical force and an antithesis to the ultra-low cost phones in the mobile phones industry. As the smart phones will enter the volume markets requiring lower costs and rapid time to market, the two dialectical forces are likely to merge into a synthesis, making use for the retained capabilities that relate to global supply-chain management and manufacturing systems in order to attain economies of scale and operational efficiencies.

5.4.3 Capability Logics Adopted by the Case Firms

Finally, this part will put forward various higher-level mechanisms, or logics that provide more abstract accounts of MNC capability dynamics, identified through both within-and cross-case analyses. These analyses indicated that the various patterns or 'logics' by which the MNCs build capabilities represented patterned links between the firms' internal evolutionary processes, dynamic capabilities and capability development, and can broadly be categorized into four different logics: variation-based, selection-based, retention-based, and access-based logic. These various logics acted as 'higher-order' mechanisms and produced complex capability outcomes or patterns as they involved and operated at the level of multiple capabilities. Next, these logics will be presented in conjunction with the related conditions and potential outcomes. Moreover, the different logics put emphasis on the different types of dynamic capabilities as will be discussed. As the following discussion will indicate, these logics do not represent organizational processes *per se*, but are rather more aggregate level and abstract accounts of mechanisms.

Capability mechanism based on variation

Variation-generating capability mechanisms aimed to disrupt existing capabilities and practices. As the case evidence indicates, variation in

capabilities originated from various sources and through multiple mechanisms, such as corporate strategy and the related processes, or by action undertaken by distinct units, or through cooperative arrangements. Although attempts to introduce variation seem to have been relatively programmed in the case firms, variation also originated from the more 'ad hoc' problem-solving to external changes or customer requirements, or even serendipity. This logic became manifest in new product or service variants, and supported both value creation and differentiation, as the following quote by the Nokia head of strategy substantiates:

Variation of known concepts is what you do all the time, identifying purchase motivations and ways to meet them and categorize them [...]. In practice we aimed at having a 2-3 year advance on what was going to happen in the market as the market volume and penetration grew. [...] A big part of the time was spent on finding parallels [from other domains], understanding how other consumer goods, for example writing instruments or watches, what kind of evolution they had gone through in a hundred years. And then figuring out how we could generate a similar evolution in ten years by differentiating in an interesting and meaningful way, in order to get us into the position where we could create variation and find new purchase motives.

As illustrated by case evidence, the rationale for the variety-seeking logic was to ensure the presence in both existing and future markets that provide new opportunities for growth, and thereby to maximize the growth potential of the firm. Within the MNC context the sources of variation are multiple as the multinational firm is able to draw on several environments to generate variation. With an objective to generate a maximum amount of variation, the multinational firm may utilize variety-generating mechanisms both at the headquarters-level and within subsidiaries. Moreover, it is likely to establish a number of cooperative arrangements with external partners with an objective to gain access to emerging technologies and complementary assets.

In terms of internal necessary conditions, this variation-generating logic relies on a large scope of capability mechanisms. Moreover, this logic builds as much on internal selection to select the best variants as on external selection mechanisms, such as market feedback mechanisms. When relying on external feedback mechanisms, it is less dependent on managerial foresight but builds more on instrumental cognition to be able to develop operational capabilities, as well as on managerial attention directed towards new emerging capabilities. Likewise, as it seeks to address different external selection criteria in various market segments or application domains, the ability to diversify the internal selection criteria when evaluating initiatives

or capabilities for future development is a prerequisite for this logic to thrive. However, as pointed out by Adner and Levinthal (2002), firms, governed by a hierarchical structure, have difficulties in reflecting the diversity of the external selection environments in their internal selection processes. Moreover, they note that firms tend to overlook potential application domains for an existing capability, and therefore the key challenge relating to this logic involves recognizing the emergent selection criteria in addition to identifying the diversity of existing selection criteria.

The findings from this research also suggest that a business model that aims at generating an extensive amount of variation may lead to ambiguity in internal selection, such as resource allocation. If the company needs to address existing product needs with multiple product lines and variants, insufficient resources may be available for future developments. Consequently, instead of supporting developments with high albeit uncertain potential, resources may be dispersed between a large number of product variants corresponding to the current business and jeopardizing the future development of the company. Therefore, the prerequisite for this logic is that the resource allocation processes ensure sufficient resources for each development process, and are flexible to reallocate resources when markets provide positive feedback for certain capabilities. The drawback of this logic is that it is resource-demanding and consequently, not adapted to firms where each individual capability development project requires significant investments, or to firms with scarce resources.

In terms of external contingencies and subsequent capability outcomes, this variation-generating logic enables firms to respond to environments where market disparities and multiple selection criteria are present. This approach may enable firms to outpace their competitors and provide a co-evolutionary advantage both in established and emerging markets. However, this logic runs the risk of dispersed corporate resources that may inhibit the firm from making sufficient investments in a future capability and consequently deteriorate the firm's possibilities to respond to radical changes in high-velocity environments. Therefore, an ability to build 'robust' strategies and resource combinations that provide "potential of success under varying future circumstances or scenarios" (Bettis and Hitt, 1995:16) in a changing environment underlies this logic. However, limited resources or lack of managerial foresight may lead to insufficient resource investments in a specific capability or application domain that may become dominant.

Capability logic based on internal selection

The selection-based logic, in contrast, relies on internal selection of organizational variation and a focus on select capabilities for future development. Instead of relying on external forces, such as market forces or institutional environment to select organizational variation, as suggested by models that emphasize external selection (e.g. the population ecology model, Hannan and Freeman, 1977), this logic relies on internal selection based on superior managerial foresight and decisions. The rationale for this logic is to have internal selection outperform external selection, as well as to direct the external selection criteria to suit the firm's resources and capabilities. Whereas the variation-maximizing logic builds on a large variety of capability development mechanisms, this logic relies on select capability development mechanisms that are mainly top management and headquarters driven, and often internal to the firm.

In terms of internal, necessary conditions, the selection-based logic is primarily dependent on managerial foresight to recognize the key resources and capabilities for future development, and on the ability to develop these capabilities prior to competitors. Moreover, this logic is dependent on a careful alignment of internal selection criteria with strategy and focused resource allocation. This logic often relates to centralized decision-making and puts the role of top management and their managerial capabilities at center stage. The selection logic involves 'big bets' and high risk, as it requires investments before actual demand. This logic also aims at influencing 'speciation events', enabling firms to cope with or take advantage of the uncertainty involved in market development (Adner and Levinthal, 2002). The following quote by a Nokia's head of strategy gives an example of internal selection choices:

Relating to the dominant design, e.g., choosing between candy bar or flip or slide models, it is about setting the bets. And then a new product paradigm would be, e.g., the communicator that Nokia launched in '96.

As to the external contingencies and the subsequent capability development, the selection-based logic is well adapted to emergent or high-velocity industries, or industries characterized by high complexity. Within these types of environments, this logic offers a possibility to build a co-evolutionary advantage, which competitors may have difficulties to attain. On the other hand, this logic involves high risk if the firm's future scenarios are not realized. The logic also applies to firms with limited resources, in which case the firm chooses to compete with select capabilities in a select target market. In this case, this logic also applies to established markets

resulting from lack of or limited amount of competition in a particular 'niche'.

Capability logic based on retention

As opposed to the two former capability logics, the retention-based logic maintains a status quo in the capability base but provides the mechanisms by which the benefits of the firm's former variety-generating activities and extant capabilities are collected, e.g., by extending to new product or geographic markets through the replication of existing routines and capabilities. Moreover, the retention processes underlie a firm's ability to transfer some of its key capabilities or distinctive competencies to a new business or application domain when external changes prompt firms to perform an exit from a specific business⁸¹. This retention-based logic relies primarily on replication and redeployment as capability development mechanisms or at 'scaling' capabilities on a global basis, and aims at value capture rather than at value creation.

In terms of internal necessary conditions the retention-based capability logic requires that the operations are carefully coordinated and configured to allow for an efficient transfer of knowledge and capabilities. As the firm's global operations rely on the same capabilities, this approach builds on a high structural fit between the organizational elements, such as its control systems and on high inter-unit alignment of internal selection criteria. As to the external contingencies and the subsequent capability outcomes, this logic is well suited to stable environments. The retention-based logic is unlikely to provide the firm with a co-evolutionary advantage, but may enable them to achieve an optimal fit in fairly stable environments. The advantage of this logic relates to the low level of investment and subsequent risk. At the same time, the potential rents are lower. Moreover, the reliance on the logic may also create a 'co-evolutionary lock-in', as indicated by prior research (Burgelman, 1996).

Capability logic based on access to external capabilities

This logic is based on a superior access to external resources or capabilities and is thus related to the evolutionary process of struggle that reflects the competition for resources among firms (Aldrich and Ruef, 2006). The approach relies heavily on access to external networks and complementary, co-specialized assets. They include both equity- and non-equity-arrangements, such as joint ventures, acquisitions as well as cooperation within a network of ecosystem partners or competitors. Underlying this

⁸¹ See e.g. Burgelman's (1994, 1996) findings on Intel's strategic exit from DRAM

logic is the increasing horizontalization and specialization within many industries that have increased outsourcing opportunities. The fact that many critical capabilities are increasingly outside the boundaries of the firms has entailed both formal and informal partnerships and alliances to access the required capabilities. Consequently, firm capabilities increasingly depend on ecosystem accessibility and the advantages of the MNC on its access to global ecosystems. As opposed to the other logics, this logic is more of a complementary mechanism, although it may in some cases be the primary approach applied by a firm as was demonstrated by case evidence.

The logic relies on superior access to the external network, which constitutes the necessary and internal condition for this logic. It is also dependent on attention as managerial cognition as well as on the ability to integrate and configure the acquired capabilities to the firm's capability base. Related to the external contingencies and capability outcomes, this logic is applicable to emergent industries to gain access to the critical resources and capabilities before the competitors, e.g., to achieve first-mover advantages, or in mature industries to strengthen market position, e.g., during industry consolidation. Superior access to the external network may also provide the firm with value capturing opportunities, such as the opportunity to license a particular technology or to extract value from the firms' patent portfolio.

Summary

The following Figure 15 illustrates the capability logics employed by the case firms during the case periods. Although the evolutionary processes of variation, selection and retention are recurrent, i.e., there are multiple evolutionary processes and multiple competing logics operating simultaneously within each case firm and case period, this illustration relates each case period to the most prevailing logic. Moreover, as Figure 15 seeks to illustrate, these logics enabled both adapting to external changes, but also underlie shaping of the external environment. Consequently, based on case evidence, each period was placed either in the upper part of the table corresponding to shaping or the lower part of the table corresponding to adaptation.

As Figure 15 illustrates, Nokia first utilized primarily selection-based capability logic when focusing on the telecommunications, by internally selecting and building up the capabilities for a consumer-focused positioning that then generated a substantial variation in the environment. Second, as the mobile phone penetration grew and the industry became more established, Nokia moved into a variation-retention based capability logic with an objective to maximize its variation-generating activities and

capabilities, and retaining these on a global basis. However, when Nokia utilized the variation-retention capability logic between 2002-2010, first its emphasis was on variation (2002-2005), and then on retention (2006-2010) as illustrated in Figure 15. Moreover, when relying primarily on retention, it first continued to shape the market (2006-2007), while during the latter period (2008-10) it was obliged to adapt to external changes, forcing it to complement its capability development with a access-based logic in order to obtain the required capabilities.

In contrast, Kone's capability development was first dominated by access-based logic as it built its international expansion on acquisitions. At the same time its machineromless elevator, MonoSpace, a product- and process-innovation represented a significant variation in the market. However, when responding to the globalization phenomenon with a need to build uniform practices and processes on a global basis, the retention-based capability logic became dominant, while Kone still sought to access complementary capabilities via acquisitions and strategic alliances (e.g. Toshiba). Related to the strategic renewal of the company and the case period of 2005-07, Kone internally selected the key capabilities and processes to develop, expressed as 'must-win battles'. During the last case period, the firm adopted an increasingly proactive role in capability development and started moving towards variation-based capability logic as it positioned itself in the field of people flow but also took an active role in environmental issues to influence the external selection criteria.

Iittala, alternatively, used a selection-based logic in international markets while using variation- and retention-based logics in its home market. These capability logics enabled it to shape the external selection criteria within its home market while adapting to external selection criteria in international markets.

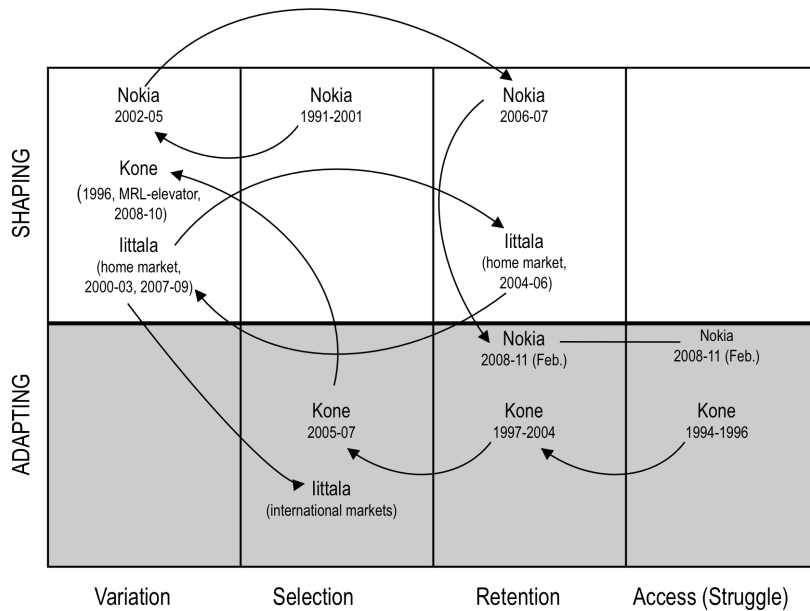


Figure 15. Capability Logics adopted by the Case Firms During Case Periods

As Figure 15 illustrates, the case firms applied different capability logics at different times or to cope with different contexts. Although these logics correspond to relatively persistent patterns of behavior, this study found, however, that the logics are not mutually exclusive. Consequently, there were multiple competing logics present in these firms. These logics were also utilized simultaneously to address different types of selection environments and as an outcome, two logics could be equally prevailing as illustrated by the Iittala case. The case firms also demonstrated relatively different patterns on how they shifted from one logic to another, for example when comparing Kone with Nokia.

Finally, the study suggests that dynamic capabilities occupy a different role in the various logics. As discussed earlier and suggested by Teece, dynamic capabilities can be disaggregated into a “capacity to 1) to sense and shape opportunities and threats, 2) to seize opportunities, 3) to maintain competitiveness through enhancing, combining, protecting, and when necessary reconfiguring, the firm’s intangible and tangible assets” (2009: 4). While both the selection-based and variation-based logics put emphasis on sensing and seizing opportunities prior to competitors and subsequently shaping the selection environments, the retention-based logic put emphasis on maintaining competitiveness through leveraging, protecting, and reconfiguring the firm’s assets on global basis.

6. Discussion: Integrating the Dynamic Capabilities View (DCV) and the Evolutionary Perspective within the MNC Context

The main research question of the study was, *How are capabilities developed within MNCs?* This main research question was addressed through the following sub questions: First, *What are the processes and mechanisms underlying capability development within MNCs?* and second, *How does the MNC context, including globalization, impact capability dynamics?* The key findings presented in the previous chapter demonstrated how in multinational firms capabilities are managed in a systematic way, in line with the dynamic capabilities perspective but also in patterned ways that relate to and are consistent with the evolutionary processes and the variation-selection-retention paradigm. The findings also indicated that the complexity originating from addressing both heterogeneous, geographically dispersed and temporally asymmetric environments may generate various forms of inertia, or counteracting mechanisms within multinational firms. This discussion part will argue that the integration of the dynamic capabilities view (DCV) and evolutionary perspective will provide a more holistic view on capability development in the MNC context. In what follows and in order to answer the sub questions that this study set out to investigate, I will demonstrate, first, how a closer integration of these two perspectives enables a better understanding of the mechanisms by which firms develop capabilities but also the internal and external selection mechanisms that constrain these development processes within MNCs. Secondly, I will discuss the MNC context and relate the findings to research on multinational firms. In the final part I seek to elucidate how the scientific paradigm adopted in this study enables extending research on capability dynamics. Figure 16 illustrates the key findings of the study. In this discussion part I will iterate between theory

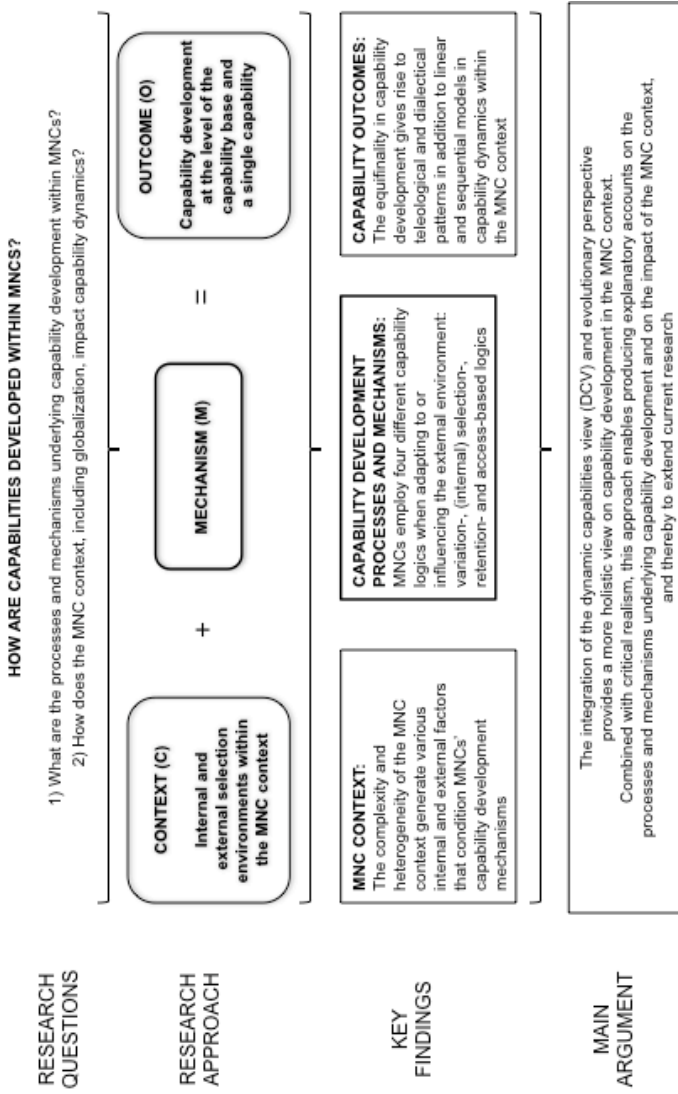


Figure 16. The Key Findings of the Study

and data, and relate the findings of the study to extant research on organizational capabilities and the multinational firm.

6.1 Processes and Mechanisms Underlying Capability Development

The purpose of this study was to 'deepen, specify and focus' the understanding of the mechanisms, contexts and outcome patterns (Pawson and Tilley, 1997) related to capability development within MNCs. The study sought to identify the underlying mechanisms that relate to capability development and occur within MNCs subject to a globalizing business environment of complexity and uncertainty. The objective was to understand how MNC strategies and activities, in different contexts, trigger various mechanisms and generate complex outcome patterns in capabilities.

As discussed earlier, literature on organizational capabilities has offered different perspectives on the pace and mechanisms of capability development. On the one hand, the evolutionary perspective has argued for a gradual, incremental nature of capability development (Aldrich, 1979; Aldrich and Ruef, 2006; Dosi *et al.*, 2002) In contrast, the dynamic capabilities view (Teece *et al.*, 1997; Teece, 2009; Helfat *et al.*, 2007) has offered a perspective that firm capabilities can be managed and modified in a purposeful manner to achieve congruence with the rapidly changing external environment. Consequently, the former perspective has focused on firm adaptation to the environment while the latter has emphasized the role of the firm in shaping the environment. Similar to the differences on the nature of capability development, there are also underlying differences on sources of organizational development and change between these two perspectives. According to the dynamic capabilities view, organizational change is managed by the means of dynamic capabilities that reside within top management (e.g. Teece, 2009). From the evolutionary perspective, such a view disregards the forces internal and external to the firm, and the fact that development and change in large organizations involves multiple levels of management. Therefore, while the dynamic capabilities view emphasizes top management action in sensing environmental change and in crafting responses to such changes, the evolutionary perspective and especially the research conducted by Burgelman (1991; 1994) underlines the role of the internal selection environment and suggests that adaptation and co-evolution may occur, without top management having 'extraordinary foresight' or a 'grand strategy' in place.

The findings from this study indicate that integrating these two perspectives enables a better understanding of the capability development phenomenon in multinational firms. On the one hand, the findings indicate that multinational firms manage capabilities in a purposeful and systematic manner. These findings also confirm that multinational firms do act as key mechanisms that create and diffuse capabilities and have the capacity to alter the external selection environment with their products, services and business models. The case evidence provides an illustration of how the case firms were able to build capabilities superior to the prevalent 'fit', and consequently to drive changes within their respective industries by influencing the external selection criteria to their own benefit. On the other hand, the findings indicate that this capacity was constrained by the complexity of the external and internal selection environments of the multinational firm, and by the existence of diversified selection criteria within different geographical and business units. And therefore, the complexity emerging from multinationality proved to be an important source of strategic inertia. As an outcome, both shaping and active internal capability development as well as adaptation and reacting to the external environment characterized the behavior of the case firms.

The findings from this study suggest that the evolutionary perspective does not fully account for firm action in influencing the internal and external evolutionary processes, or the firm's ability to shape the external environment in line with their strategies and capabilities. At the same time, the findings suggest that the dynamic capability view does not sufficiently take into account the internal and external forces that impact or counteract the firm's ability to do so. In this discussion, part I will argue that although these perspectives display substantial differences as indicated by the literature review, they also have the potential of informing each other for a more holistic view on capability development, as will be demonstrated.

Capability logics

First, by integrating the dynamic capabilities view and evolutionary perspectives within the MNC context the study was able to put forward various logics by which multinational firms develop capabilities. The within- and cross-case analyses indicated that the various patterns or 'logics' by which the case MNCs built capabilities can be regrouped into four main logics: variation-based, (internal) selection-based, retention-based and access-based logics, which represent patterned links between the intra-firm evolutionary processes, dynamic capabilities and capability development. As discussed, they do not represent organizational processes

per se, but are rather more aggregate level and abstract accounts of mechanisms operative in organizational processes.

As they involve and operate at the level of multiple capabilities, these various logics act as 'higher-order' mechanisms and produce complex capability outcomes or patterns. This perspective is consistent with Laamanen and Wallin's findings that while individual capabilities may evolve continuously at their own pace, capability development at the portfolio level resembles a "race in which different co-specialized capabilities are evolving in parallel" (2009: 977) as well as with their argument that when subject to discontinuous environmental changes, evolutionary progress is insufficient and instead, capability constellations of co-specialized assets need to be fundamentally changed and revised. Consequently, this research enhances understanding of capability development at the level of capability base or capability constellation, and therefore extends research that has looked at individual capabilities that may proceed in a life cycle manner when influenced by internal and external selection events (Helfat and Peteraf, 2003).

This study also suggests that multinational firms apply various logics not only to cope with the uncertainty and complexity in the environment or to address the changes within, but also exploit these changes to their advantage. So in addition to prior research that has demonstrated how the intra-firm evolutionary processes in complex organizations enable various forms of adaptation (Burgelman, 1991), the present study suggests that by careful maneuvering of these processes, the managers can also make various forms of shaping possible. They may, for example, aim at influencing the speciation events and take advantage of the uncertainty involved (Adner and Levinthal, 2002).

Moreover, the findings suggested that dynamic capabilities occupy a different role in the various logics. While both the selection-based and variation-based logics put emphasis on sensing and seizing opportunities prior to competitors and subsequently on shaping the selection environments, the retention-based logic places emphasis on maintaining competitiveness through replicating, leveraging, protecting and reconfiguring the firm's intangible assets. The approach put forward in the study therefore recognizes the possibility of alternative developmental paths or equifinality, but also the possibility of different combinations of dynamic capabilities to the same performance outcome.

The role of the internal and external selection environments within MNCs

Based on the findings of the study, I argue that a closer integration of the evolutionary and dynamic capabilities perspectives enables not only a better

understanding of the mechanisms by which managers may maneuver the intra-organizational, evolutionary processes of variation, selection and retention, but also enables taking better into account the internal and external forces that condition (and may either promote or counter) the firm's capability development mechanisms. The findings revealed that within the context of the multinational firm, it is the complexity of the context internal and external to the MNC that gives rise to various mechanisms that neutralize or counteract the firm's capability development mechanisms. The findings in general, and the discrepancy between the strategy and the capability outcomes within the case firms in particular, provided support for the claim that the quality of the firm's internal selection environment is vital to its ability to cope with changes in its external selection environment (Burgelman, 1991; Burgelman and Siegel, 2008; Adner and Levinthal, 2002; Henderson and Stern, 2004). The multinational firm is also likely to encounter a greater diversity of external, often opposing forces because of operating in multiple contexts (e.g. developed vs. emerging markets) in comparison to local firms.

First, the findings from this research point to managerial cognition as a key determinant to capability development consistent with the growing amount of research in that domain (Tripsas and Gavetti, 2000; Adner and Helfat, 2003; Gavetti, 2005; Laamanen and Wallin, 2009; Danneels, 2010). The findings indicate that managerial cognition in recognizing new opportunities or in understanding how external changes may impact the firm is influential to identifying the key resources and capabilities for future development. However, the findings from this research reveal how a lack of sufficient managerial attention to specific regions, or to some lead countries that do not represent significant weight in terms of turnover may obstruct firms from identifying early signals that lead to significant changes in the external environment and to proactively develop the required capabilities. This finding confirms Gavetti's (2005) argument that the actor's distance from action is determinant to the actor's ability to interpret the action-outcome relationship, suggesting that higher-level managers may not devote sufficient attention to signals that are ambiguous from its prevalent setting or commitments, or may pay insufficient attention to early signals or to those that emerge from outside the main divisions, or in the case of the multinational firm, from outside the key markets or subsidiaries.

Second, the findings from this study point to the existence of diversified selection criteria within different geographical units that may impede firms from acknowledging that certain selection criteria, capabilities or business models are becoming obsolete if there are geographical markets where these capabilities and the corresponding business models are still applicable.

These findings provide support for Tripsas and Gavetti's (2000) argument that management's cognitive inertia and strategic beliefs may prevent it from applying its capabilities to specific products or activities required to embrace the radical changes in the environment and from adopting a new business model, especially if the capabilities and the business model are supported by another business area. This study also sheds further light to their argument as it indicates that such strategic beliefs or inertia may originate from the presence of divergent geographic markets and the need to address multiple selection criteria simultaneously. Moreover, the findings from this research highlight the need to address the various market contexts with the appropriate capabilities and timing. These findings are therefore consistent with Adner and Levinthal's (2002) proposition that the development of a particular technology (or capability) may be mistakenly discontinued if it is too early transplanted to the market that is still premature for it.

Third, reflecting on research put forward by Burgelman (e.g. 1991; 2002), the findings from this study point to the difficulties in aligning the strategic and structural contexts within multinational firms. These findings also suggest that due to the very size and complexity of the multinational firms, the 'structural context' becomes predominant, and therefore, the 'strategic context' determination has difficulties in selecting variations different from those selected through the structural context. These findings are also consistent with Adner and Levinthal's (2002) findings on how new initiatives have difficulties in developing within established firms if they do not match the existing strategic context or if their magnitude is insufficient to draw managerial interest, and may subsequently not be given sufficient managerial attention or resources. These findings also hinted at the difficulties relating to power distribution, and in determining the ownership of a specific capability as it is diffused within the multinational corporation, and revealed difficulties in building a shared vision within the multinational firm, as there may be contrasting views on the corporate development or on the importance of a specific capability within that vision. The findings from this study also indicated that different units display different levels of dynamic capabilities, and that the dynamic capabilities of one unit may be counteracted by inertial forces originating from another unit.

Moreover, Burgelman (1991) has suggested that the firm's internal selection processes may be more important for adaptation than its official corporate strategy or top management action that may be hampered by inertial forces, such as rational justification, emotional attachment, or bounded rationality, including a willingness to protect the firm's core technology, or difficulties in divorcing from the strategy that made the

company successful in the past. Different from Burgelman’s (1991; 1994; 1996) findings this study illustrated a case (Nokia) where the official corporate strategy was aligned with future changes in the external environment but where the internal selection processes continued to support extant selection criteria instead of being aligned with the future selection criteria, and as an outcome, the development of certain capabilities was inert despite the official strategy. The coexistence of diversified selection criteria within the MNC context further underlines the difficulty in aligning internal selection criteria with corporate strategy. Consequently, the internal selection environment may impact corporate development either positively, when the internal selection environments adjusts action to better reflect the external selection environment than the official corporate strategy (Burgelman, 1991; 1994; 1996), or negatively, when it hampers corporate development by applying extant selection criteria for future development as identified in this study.

The evidence from the study therefore suggests that a close alignment of internal selection criteria with the current external selection environment may decelerate capability development in high-velocity environments where capability development needs to anticipate future shifts. The difficulties to align the internal selection environment with future shifts is even more pronounced in the context of the multinational firm as it needs to address divergent selection environments as evidenced, e.g., by the Nokia case and illustrated by Figure 17. Therefore, I suggest that the efficiency of the internal selection environment should not only be assessed by how well it reflects extant external selection criteria (α) but also by how well it is able to transform itself to address future selection criteria (β) in a changing environment and across multiple markets, as indicated in Figure 17.

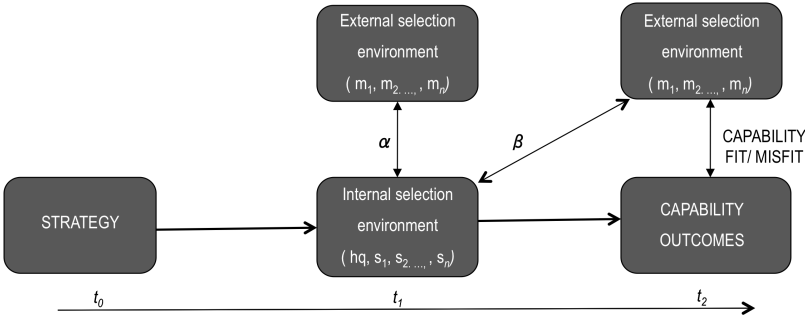


Figure 17. The Complexity of the MNC Environment Resulting from Divergent and Temporally Asymmetric Selection Environments

Finally, these findings also provided support for Laamanen and Wallin's (2009) argument that capability development not only requires managerial attention to accurately allocate resources at the portfolio level but also requires foresight to be able to change business models and revise entire capability constellations of co-specialized assets when subject to discontinuous environmental changes. However, the findings from this study were also consistent with Burgelman (2002) in that a company's ability to dominate a specific market may create a 'co-evolutionary lock-in' in its current product-market environment, making it difficult to change strategic direction, and with Teece (2007; 2009) in that a co-specialization may create a lock-in when technologies and other capabilities form a tightly integrated system. The findings from this research suggest that this type of co-evolutionary, or co-specialization, lock-in is even more likely within the context of the multinational firm when assets are organized on a global basis to form highly integrated and complex systems.

In brief, this study pointed to inertia or mechanisms that emerge from the fact that multinational corporations possess complex internal and external selection environments and need to respond to divergent external and internal pressures. The findings from this study also emphasize difficulties in assessing different and potentially contrasting context-mechanism-outcome relationships, requiring ambidexterity, or the ability to address contradictory and ambiguous elements, such as temporal and spatial asymmetries within the context of the multinational firm.

Next, I will relate the research findings to extant research on the multinational firms.

6.2 The Impact of the MNC Context and Globalization

As the above discussion substantiated, integrating the dynamic capabilities view and the evolutionary perspectives enables putting forward various mechanisms and outcome patterns related to capability development. In this part, I will argue that this approach also enables identifying the impact of the MNC context on capability outcomes and mechanisms.

The findings provided evidence on the capacity of the multinational firms to alter the external environment by means of the different capability logics. As the data demonstrates, the case firms not only reacted to the external environment but also actively sought to and were able to modify the external environment supported by active, internal capability development or by building ecosystems of co-specialized assets or 'capability constellations'. These findings therefore, provide further evidence on the

multinational firms ability to alter the external selection criteria (Dunning and Lundan, 2010; Cantwell *et al.*, 2010) and to co-create markets (Pitelis and Teece, 2010).

The findings from this study also indicate that the advantages of the MNC are increasingly enabled by its network of subsidiaries and its network at the 'extended enterprise' level that provide the MNC with a larger scope of capabilities and mechanisms vis-à-vis domestic firms or those operating in a specific region. The various internal and external mechanisms undertaken by the MNCs enable them to generate more variation in the environment, and to engage in selection, retention and cross-border diffusion of their routines and capabilities. The capacity for the multinational firm to shape the external environment was especially pronounced in less-developed host country environments where the multinational firm transferred capabilities developed at the headquarters or at other affiliates.

Moreover, the study demonstrated how capability development within MNCs was increasingly an inter-firm, rather than an intra-firm phenomenon. The findings from this research indicate that as a result of the increasing horizontalization and specialization within many industries, the required capabilities increasingly originate from outside the firm boundaries and therefore the advantages of the MNC are increasingly enabled by the capabilities that reside within its ecosystem. At the same time the horizontalization has provided the competing firms with access to the same complementary capabilities and consequently put more emphasis on partnership management to access the required capabilities. Therefore, I argue that what has become to be called as the 'dynamic capabilities' increasingly operate at the level of the extended enterprise and emerge from, and are activated through, interaction with other firms. However, it seems that this dimension of the dynamic capabilities construct has not been fully acknowledged within IB literature (for an exception, see Teece, 2009). Therefore these findings extend organizational capabilities research within IB that has tended to look at capability development as an intra-firm phenomenon (see Forsgren, 2008 for a review).

Furthermore, the key findings of the study pointed to the need to consider the complexity of the selection environments internal and external to the multinational firm that may give rise to factors or mechanisms that counteract the capability development mechanisms. The internal factors and mechanisms included, e.g., lack of sufficient managerial attention to key regions, difficulty in acknowledging that certain internal selection criteria or capabilities are becoming obsolete if there are regions where these capabilities are still applicable, the existence of diversified selection criteria within different regional units, difficulties relating to power

distribution and building a shared vision within the multinational firm, while external mechanisms related to forces that MNC encounters as a consequence of operating in multiple contexts as opposed to local firms. Therefore, it seems that the liabilities of the MNC do not relate merely to its liability of foreignness (Zaheer, 1995) or newness (Cuervo-Cazurra, Maloney and Manrakhan, 2007) but can also be associated with the complexity of the context internal and external to the MNC that may generate various mechanisms that neutralize or counteract the advantages or 'powers' of the multinational firm. However, when these powers are superior to the counteracting mechanism, the MNC is not only able to adapt to changes in the environment but also able to direct the capability development in the desired direction. Therefore, the multinational firm needs to be able to overcome the counteracting mechanism and to activate the competence-creating powers of the MNC in the intended direction. As a consequence, this study suggests that it is up to the multinational firm to overcome the inherent heterogeneity of the internal selection environments and to construct such internal selection processes that enable the desired capability outcomes to be realized. The findings therefore provide further support the suggestion of Kostova *et al.* (2008), that in order to cope with the heterogeneous, ambiguous and complex external environment the MNCs are likely to establish a strong intraorganizational field for the purpose of transferring and leveraging capabilities on a global basis. Therefore, the intraorganizational field, analogous with the concept of internal selection environment utilized in this study, may be more influential to capability development than the external selection environment in the case of the multinational firm. When internal selection processes outpace external selection, the firm is in the position to modify the external selection environment in line with its strategies and resources, confirming the suggestions put forward by Madhok and Liu (2006).

However, the findings also point to the impact of the external environment on the firms' internal processes, including its capability development. As suggested by Forsgren (2008) prior research on MNCs from the organizational capability perspective has tended to neglect the role of the external environment, whereas contingency theory has granted it a dominant role, looking at the external environment as given and suggesting that the main focus of MNCs is to adapt their strategies and structure to attain a 'strategic fit' with the environment external to the firm. Although institutional theory explicitly incorporates the external environment into the analysis suggesting that MNCs are able to modify the external environment in line with their needs (Dunning and Lundan, 2010), these theories have mainly focused on the MNC as a 'political actor' and

emphasized their ability to impact the institutional environment of the firm (see Forsgren, 2008 for a review). The findings indicate that firms do not only adapt to their environment in search for a strategic fit as suggested by contingency theory, but also modify the environment and the selection environment with their resources and capabilities. In doing so, this thesis complements the work of Cantwell *et al.* (2010) and Dunning and Lundan (2010) on the institutional environment.

With regards to the various process models of development and change (Van de Ven and Poole, 1995) the literature review presented earlier pointed out that many international business theories are implicitly based on a lifecycle model, adopting a developmental view assuming that organizations change gradually or in stages, and resulting in an evolutionary process at industry level. This research, in contrast, indicates that within multinational firms, capability development increasingly relates to the teleological processes of strategy formulation, evaluation and reformulation that may result in capability patterns that are recurrent or discontinuous instead of linear and sequential. Both the external environment and the firm action, including its capabilities, proved to influence the development process and direct or redirect the entities towards various developmental paths and result in multiple, equifinal ways to achieve the end state, as opposed to a single predetermined way regulated by given rules or programs (Van de Ven and Poole, 1995). These findings therefore confirmed the need to replace the 'unilinear evolutionary models' by 'multi-level, empirically based research' to challenge the idea of a limited number of evolutionary paths within MNC research (Westney and Zaheer, 2009). This equifinality, when combined with external forces such as globalization, then proved to produce system-level changes that were also dialectical, and not just evolutionary by nature, as indicated by the telecommunications industry for example. The findings from this study therefore, in line with the arguments put forward by Aldrich and Ruef (2006), suggest that the traditional international business theories be complemented with models that do not assume a predetermined order of developmental sequences but instead assume that external events interact with firm action to produce firm-level changes that are characterized by non-linearity and equifinality, and result in industry- or system level changes that are rather dialectical than evolutionary, as indicated by Figure 18.

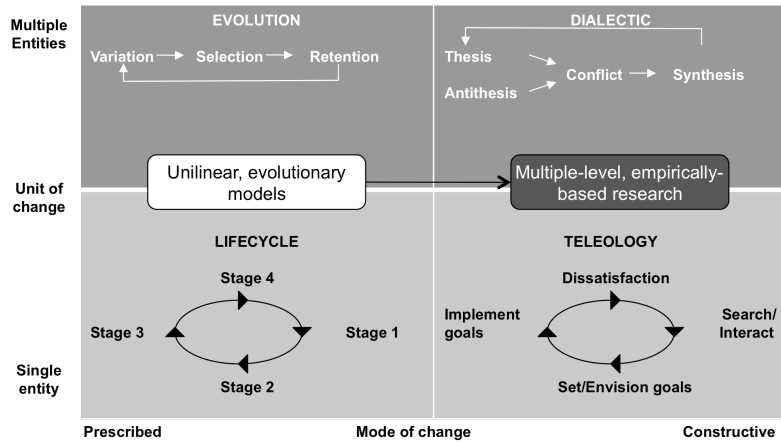


Figure 18. The MNC and Process Theories of Organizational Development and Change (Adapted from Van de Ven and Poole, 1995)

6.3 Extending the Understanding of Capability Dynamics through Critical Realism

In this part, I discuss how the scientific paradigm adopted in this study enabled extending research on capability development. Various scholars have suggested that both critical realism as a philosophy of science and a focus on mechanisms provide an explanatory foundation for process research and processual analysis (Pajunen, 2008; Morais, 2011), adapted to the study of phenomenon that incorporate characteristics of the open, dynamic and complex nature of the social world (Pawson and Tilley, 1997). As I discussed in the methods section, the rationale for adopting a critical realist paradigm in the present study was that as it focuses on combinations of entities with causal ‘powers’ and contextual factors that may activate these powers, it enables to unravel the various mechanisms-context-outcome combinations underlying the phenomenon under study. Combined with appropriate research methods it enables a better access to the processes and mechanisms underlying the researched phenomenon (capability development), as well as to the context (the MNC environment and globalization) than a positivist paradigm commonly adopted in research within international business (Piekkari *et al.*, 2009). The critical realist perspective and especially the approach put forward by Pawson and Tilley (1997) enabled extending the understanding of capability dynamics in many ways.

First, the present study affirmed the critical realist assumption (Pawson and Tilley, 1997) that firms are able to produce the intended capabilities as outcomes (O), only if they are able to introduce the appropriate mechanisms (M) in the right conditions (C) internal and external to the firm. Moreover, according to these assumptions, it is not 'programs' or 'strategies' that work, but rather the actors that make them work, and therefore, the causal potential of a strategic initiative is dependent on providing the reasons and resources as mechanisms to enable the actors to change and to produce change. Moreover, firms, just like other communities, also have characteristics that cannot be reduced to individual actors including the culture and structure or the organization as well as the sets of social rules, norms and values as part of the internal selection environment. Just like social programs work if they change the reasoning and the subsequent actions of individuals or groups (Pawson and Tilley, 1997), strategic initiatives work only if the internal selection environment is aligned to produce the desired capability outcomes. It is these internal attributes that determine whether the organization accepts or resists change and consequently, the pre-existing structures either enable or disable the intended mechanisms of change. Following this reasoning, within the context of the firm, although the actors do not have the free choice of whether they commit to capability development or an organizational change or not, the degree of change is impacted by the internal selection environment, or there may be other influencing factors, such as the availability of resources.

Second, the critical realist perspective enables access to the embeddedness of capability development within a wider set of macro and micro forces (Pawson and Tilley, 1997). The findings from this study are consistent with the critical realist supposition that the capacity to change is only triggered in the appropriate conditions. Therefore, the spatial or institutional location into which capability development mechanisms are embedded sets limits to these mechanisms, and contextual changes may either promote or counter the functioning of these mechanisms. Thus, capability development, just like social programs, is considered to involve an interplay of 'individual and institution', and, of 'structure and agency' (Pawson and Tilley, 1997: xiii). Therefore, in order to understand capability dynamics the critical realist approach enables taking into account both macro and micro processes, individual and institutional influences as well as causal powers that originate from both 'reasoning and resources' (Pawson and Tilley, 1997:160).

Third, the critical realist paradigm acknowledges that because the social world is in continuous flux and change is endemic, causal impacts are not

fixed but contingent (Pawson and Tilley, 1997). Therefore, as these authors explain, social systems undergo change both from the reflexive behavior of actors within them and from external impacts. Agents, such as firms or managers, may be aware of the patterns, regularities and underlying forces involved and of the opportunities available to them. This awareness, as these authors point out, may result in an attempt and ability to change the pattern that needs to be accounted for when building explanations. As an outcome, because of the open and transformative nature of social systems (Bhaskar, 1979) the mechanisms, contexts and outcomes are inclined to shaping and reshaping and therefore, the contexts cannot be controlled and actors' decisions are likely to be irregular and unstable (Pawson and Tilley, 1997). The following Figure 19 indicates how contexts may impact change mechanisms and how an inappropriate contextualization may lead to a malfunction of an intended capability development mechanism. In the first case, no change is sought and as the context (C2) continues to support the mechanism M1, there is no change in outcome or regularity R1. In the second case, a new mechanism is induced to a context C3 to produce another outcome or regularity. The new mechanism supersedes the former mechanism and produces a new outcome or regularity R2. A similar configuration results when no change is sought and a mechanism M1 is introduced to a context C3 that has changed. However, this changed context has given rise to a new counteracting mechanism M2 that then results in a new regularity R2 in place of the intended regularity R1. In the last case the change mechanism M2 fails to fire because it is introduced to an inappropriate context C4 that continues to sustain the former, 'problem' mechanism M1, producing again, the regularity R1 instead of an intended outcome or regularity R4.

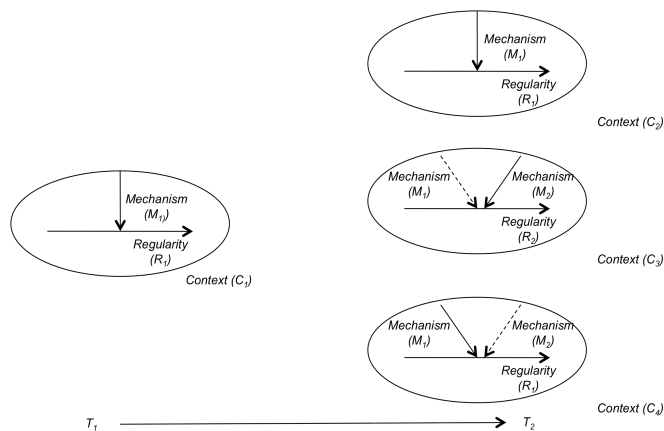


Figure 19. The Interplay between Mechanisms –Contexts- Outcomes, Adapted from Pawson and Tilley, 1997

Moreover, the critical realist paradigm enables to take into account that some of the contextual factors have an influence (present) while others do not (absent), and that the influence may vary in degree (Pawson and Tilley, 1997). Furthermore, following Pawson and Tilley (1997), it enables to take into consideration that the context into which initiatives are embedded may set limits to the mechanisms, either promoting or counteracting the intended mechanisms. Therefore, the impact of both internal (such as organizational changes) and external changes (such as globalization) is also dependent on how they interact with the corresponding context within each case, and consequently, although the same external context (e.g. globalization) is present in each case during the case time under investigation, it may operate in different way because of a set of internal relations.

Another benefit in a critical realist perspective is that it builds on an assumption that collectivities (such as social groupings, organizations or ecosystems) have attributes, such as capabilities that emerge from interaction (Ackroyd, 2004) and may have emergent causal powers above and beyond those of simple aggregation (Easton, 2000). This provides ground for the study of networks of firms or capability constellations, or to understand the power or superiority of 'ecosystems'. It also provides justification why a study on the MNC as part of an ecosystem requires treating the entities in the ecosystem as part of the internal, necessary conditions and not as part of the external, contingent conditions.

Finally, this approach may also elucidate the concept of dynamic capabilities. Because, if we accept that the reality is stratified (Bhaskar, 1979; Sayer, 1992), the notion of dynamic capabilities as a 'higher-order capability' (e.g. Collis, 1994) becomes more justified as it can be related to the powers, potentialities or liabilities of an organization. From this perspective, the fact the dynamic capabilities then originate from real domain of reality unobservable to the firm's managers or researchers helps us to better understand the obscurity of the dynamic capabilities concept and the difficulties in operationalizing it. Therefore, this also explains why any attempts to reduce the dynamic capabilities to a set of independent variables is highly unlikely to capture the complexity, interdependencies and dynamism inherent in the construct.

Table 9 summarizes the key findings of the study.

<p>Different Capability Logics within MNCs (Figure 15)</p>	<p>-In multinational firms capabilities are managed in a systematic way, in line with the dynamic capabilities perspective but also in patterned ways that are consistent with the evolutionary processes and the variation-selection-retention paradigm</p> <p>-The different logics by which firms develop capabilities can be regrouped into variation-, (internal) selection-, retention- and access-based logics</p> <p>-These logics build on different mechanisms, relate to different necessary and contingent conditions, and provide the firms with different kind of advantages</p> <p>-The dynamic capabilities of the firm occupy a different role in the different logics</p>
<p>Internal and External Selection Environments within MNCs (Figure 17)</p>	<p>-The heterogeneity and complexity within the MNC context may generate various forms of inertia, e.g.,</p> <p><i>Insufficient managerial attention to key regions</i></p> <p><i>Inability to acknowledge that certain internal selection criteria or capabilities are becoming obsolete if there are regions where these capabilities are still applicable</i></p> <p><i>Reluctance to address diversified selection criteria originating from different regional units</i></p> <p><i>Difficulties relating to power distribution, building a shared vision or ownership designation as the capability is diffused within the multinational firm</i></p> <p>-The heterogeneity of the MNC context requires an ability to address contradictory and ambiguous elements, such as temporal and spatial asymmetries</p> <p>-The 'structural context' is likely to become predominant over the 'strategic context'</p>
<p>Impact of the MNC Context and Globalization (Figure 18)</p>	<p>-Capability development within MNCs is increasingly an inter-firm, rather than an intra-firm phenomenon</p> <p>-The advantages/powers of the MNC are increasingly enabled by its network of subsidiaries and its network at the 'extended enterprise' level</p> <p>-The liabilities of the MNC can be associated with the complexity of the context internal and external to the MNC that may generate various mechanisms that neutralize or counteract the advantages/'powers' of the multinational firm</p> <p>-Within MNCs capability development increasingly relates to the teleological processes of strategy formulation, evaluation and reformulation that may result in recurrent or discontinuous rather than linear and sequential patterns (Figure 18)</p> <p>-This equifinality when combined with external forces such as globalization then proved to produce dialectical, in addition to evolutionary, system-level changes (Figure 18)</p>
<p>Extending the Understanding of Capability Dynamics through Critical Realism (Figure 19)</p>	<p>CMO-analysis (Pawson and Tilley, 1997) provides a structured way to approach capability outcomes (O), that relate to certain mechanisms (M) or internal and external conditions (C), as well as</p> <p>-enables access to the embeddedness of capability development within a wider set of macro and micro forces</p> <p>-acknowledges that because the social world is in continuous flux and change in endemic, causal impacts are contingent</p> <p>-provides an explanation on how an inappropriate contextualization may lead to a malfunction of an intended capability development mechanism (Figure 19)</p> <p>-recognizes that collectivities (such as social groupings, organizations or ecosystems) have capabilities that emerge from interaction</p> <p>suggests that the dynamic capabilities concept can be related to the powers, potentialities or liabilities of an organization</p>

Table 9. Summary of the Key Findings

7. Contribution and Implications

By taking capabilities as the focus of analysis and drawing on organizational capabilities-, evolutionary-, and MNC literatures, and supported by a multiple case study and process research, this monograph-based dissertation investigated capability dynamics within MNCs and the interactions between strategy and the environments internal and external to the firm in order to understand how capabilities are developed within MNCs. The longitudinal case study was performed during a period of time when the external environment was undergoing fundamental changes with implications on firm activities and capabilities. On the one hand, changes in the external environment such as the rise of the emerging markets and related cost pressures, as well as intensifying competition required firms to adapt to changes in the environment, on the other hand, the arising opportunities promoted new innovative and value-creating strategies and activities. This changing global landscape provided a fascinating context to enhance our understanding of the mechanism, contexts and outcome patterns (Pawson and Tilley, 1997) related to capability development within MNCs, with an objective to produce middle-range theory that provides relatively abstract configurations for further specification within different contexts. The contributions of the study are the following.

First, this study extends current research by explicitly integrating the dynamic capabilities view (DCV) and the evolutionary perspectives. I argue that a closer integration of these two perspectives provides a more holistic picture of capability development as it enables a better access to the multiple, equifinal mechanisms by which firms develop capabilities as well as the internal and external selection mechanisms that constrain these development processes. An integration of these two perspectives within the MNC context enables putting forward different capability logics as the firms respond to and aim at influencing changes in the globalizing business environment, as well as the taking into consideration the factors that condition MNCs' capability development mechanisms, such as the challenges associated with addressing temporally asymmetric,

geographically dispersed and heterogeneous selection environments. By revealing factors that originate from multinationality, it enriches the discussion on path dependencies, inertial forces and managerial cognition.

Second, this study contributes to international business literature by demonstrating that the power and advantages of the multinational firm increasingly relate to and are augmented by its capacity to use not only the subsidiary network but also its global network of partner firms to complement its internal capability base with co-specialized assets. The study demonstrates how this purposeful management of firm capabilities across borders, including the extension of firm boundaries, not only enables adaptation but also underlies shaping of the external environment, and gives rise to teleological and dialectical models of capability development in addition to the linear and sequential models common in international business research. By providing 'multi-level, empirically based research' it puts forward an alternative to the 'unilinear evolutionary models' that have been dominating research in international business (Westney and Zaheer, 2009).

Third, the study broadens the empirical research of organizational capabilities research with a longitudinal case study and process research founded on a critical realist paradigm that enables a deep access to the processes and mechanisms underlying capability development and to the impact of the context. By doing so it responds to a call for more longitudinal field research and case-based methods (Helfat *et al.*, 2007) and contextualized explanation (Welch *et al.*, 2011). Moreover, this study provides empirical evidence of the dynamic process of capability development when subject to a globalizing external environment. As the study provides insights on the impact of the interplay between the internal and external environment on capability development within MNCs, it is likely to make an empirical contribution to the literature on co-evolution.

Finally, the managerial implications relate to the various capability logics that managers may employ to cope with and to influence the external environment. I also aim at contributing to practitioners by highlighting the temporal and spatial asymmetries in the selection environments within the MNC context, and the importance of aligning the internal selection environment with strategy that involves, in part, overcoming the inherent heterogeneity within the multinational firm.

These intended contributions are illustrated in Table 10 below. Next, each of the aforementioned contributions will be elaborated on and related to the literature to which this study aims at contributing.

Theoretical Contribution	Research stream, key authors	Contribution of this Study
Organizational Capabilities Literature:	Dynamic and organizational capabilities literature (Helfat et al., 2007; Helfat and Peteraf, 2003; Teece et al., 1997; Teece, 2009; Eisenhardt and Martin, 2000; Dosi et al., 2002)	-Integrates the DCV and the evolutionary models for a more holistic approach and puts forward four different capability logics by which MNC develop capabilities -Identifies factors that condition MNCs' capability development mechanisms -Provides context-rich research by linking capability development to temporal and spatial contexts -Illustrates how different business or geographical units display different levels of dynamic capabilities, and that the dynamic capabilities of one unit may be counteracted or neutralized by inertial forces originating from another unit within the MNC context
	Evolutionary perspective (Burgelman, 1991; 1994; 1996; 2002; Burgelman and Siegel, 2008; Dosi et al., 2002)	-Illustrates how MNCs manage the internal evolutionary processes in capability development in a systematic manner -Provides evidence on how a close alignment of the internal selection environment with current external selection environment may encumber capability development -Suggests that within the MNC the structural context is likely to be predominant over the strategic context
	Capability dynamics/ Managerial cognition (Laamanen and Wallin, 2009; Gavetti and Tripsas, 2000; Gavetti, 2005; Danneels, 2010)	-Enriches discussion on managerial cognition by pointing to the cognitive challenges associated with addressing divergent and temporally asymmetric selection environments within the MNC context
International Business Literature:	Evolutionary perspective on the MNC (Kogut and Zander, 1993; Zander and Kogut, 1995; Kogut, 1997; Westney, 2009; Westney and Zaheer, 2009)	-Illustrates how the evolutionary models can be applied to the study of capability development within MNCs -Provides insights on capability dynamics under the conditions of globalization -Provides evidence of teleological and dialectical models of capability development in addition to the linear and sequential models common in IB research
	MNC co-evolution (Cantwell et al., 2010; Madhok and Liu, 2006)	-Demonstrates how capability development is increasingly an inter-firm, instead of an intra-firm phenomenon -Demonstrates how multinational firms modify the business environment and the external selection criteria with their products, services and business models and thereby complements prior research on the institutional environment
	MNC and Dynamic Capabilities (Dunning and Lundan, 2010; Teece, 2009; Tallman and Fladmoe-Lindqvist, 2002; Luo, 2000; 2002)	-Demonstrates how the advantages of the MNC increasingly relate to its ability to use both the subsidiary network and external network to complement its internal capability base -Provides an illustration of how the liabilities of the MNC can be associated with the complexity of the context internal and external to the MNC that may generate various mechanisms that neutralize or counteract the advantages of the multinational firm

Empirical Contribution:	Dynamic capabilities research (Helfat et al., 2007; Eisenhardt and Martin, 2000)	-Broadens the empirical research on organizational capabilities with a longitudinal case study and process research founded on critical realism -Provides empirical evidence of how firms create market change by means of the capabilities manifest in products, services or business models
	International business research (Welch et al., 2011; Piekkari et al. 2009)	-Responds to the call made for more methodological pluralism and contextualized research within international business studies -Puts forward a 'contextualized explanation' on the research phenomenon
	Co-evolution research (Lewin and Volberda, 1999; Cantwell et al., 2010; Pitelis and Teece, 2010)	-Provides empirical findings on co-evolution in a global context of complexity and uncertainty -Provides empirical findings on how multinational firms co-create markets
Managerial Implications:	-Puts forward four different capability logics based on variation, (internal) selection, retention and access that managers may employ in order to adapt to external changes but also to shape the external environment -Highlights the temporal and spatial asymmetries in the selection environments within the MNC context -Emphasizes the alignment of internal selection environment with strategy as well as the role of appropriate timing	

Table 10. The Contributions and Implications of the Study

7.1 Theoretical Contribution and Implications

7.1.1 Organizational Capabilities Literature

The findings from this study indicated that in multinational firms capabilities are managed in a systematic way, in line with the dynamic capabilities perspective but also in patterned ways that are consistent with the evolutionary processes and the variation-selection-retention paradigm. As the findings indicated, these different logics can be regrouped into variation-, (internal) selection-, retention- and access-based logics, and they build on different mechanisms, relate to different necessary and contingent conditions, and provide the firms with different kind of advantages. Therefore, the findings from this research provide justification for a closer integration of the dynamic capabilities view (DCV) and the evolutionary perspective.

The findings from this study also indicated that the MNC provides a specific type of a context that should be better accounted for in current perspectives. This study suggests that the evolutionary perspective ought to

pay more attention to the powers of the MNC to generate new capabilities or to shape the external environment by means of its products, services or business models, while the dynamic capabilities ought to better account for the internal or external forces that may limit or neutralize the multinational firm's ability to do so. The findings from this study pointed in particular to the difficulties in allocating managerial attention to all the regions as well as to the difficulties in acknowledging that certain internal selection criteria or capabilities are becoming obsolete if there are regions where these capabilities are still applicable. The findings also demonstrated the existence of diversified criteria within different regional units as well as to the challenges relating to power distribution, building a shared vision, as well as to designating the ownership of a capability as it is diffused within the multinational firm. Moreover, the findings indicated that due to the size and complexity of the multinational firm, the structural context tends to become predominant over the strategic context (Burgelman, 1991; 2002). Therefore, I argue that a closer integration of the evolutionary and dynamic capabilities perspectives enables not only to better understand the mechanisms by which managers may maneuver the intra-organizational, evolutionary processes, but also to better account for the internal and external forces that condition these mechanisms.

The findings also demonstrated that the dynamic capabilities of the firm occupy a different role in the various logics. Moreover, as the dynamic capabilities are mainly considered to be located at the top management level (e.g. Teece, 2009), a closer integration of the two streams enables taking into consideration the organizational context more holistically, including different business units, geographic locations and multiple levels of management. The findings from this study also indicated that different units display different levels of dynamic capabilities, and that the dynamic capabilities of one business or geographic unit may be counteracted or neutralized by inertial forces originating from another unit. Because of the heterogeneity of the internal selection environments, I claim that the concept of dynamic capabilities within multinational firms should not be investigated as a corporate level construct. Rather, the findings from this study suggest that the business unit or regional/geographical unit provides a more meaningful level of analysis for the study of dynamic capabilities in the case of the multinational firm, or large firms in general.

The study also contributes to the organizational capabilities research field by providing context-rich research. The detailed analysis put forward in the study illustrates that the majority of the firms' actions related to its capabilities involve various spatial and temporal contexts, whereas this dimension, outside the field of international business has not been

recognized to its full extent. Likewise, within research on organizational development and change, Pettigrew *et al.* (2001) have claimed that there has been ignorance of temporal and spatial contextual factors that shape episodes of change, and have called for international comparative research in order to complement current understanding of organizational change across national boundaries. This study demonstrates how linking capability development to particular temporal or spatial contexts that affect patterning in this phenomenon may advance research within organizational capabilities and organizational change.

Finally, I argue that an international business approach has a potential to enrich the organizational capabilities research through research that explains phenomena in context (Welch *et al.*, 2011) and may therefore have important value to refining strategy theories (Tallman, 1991). Kostova *et al.* (2008), among others, have pointed to MNCs having “complex internal environments, with spatial, cultural, and organizational distance; language barriers; inter-unit power struggles; and possible inconsistencies and conflict among interests, values, practices, and routines used in the various parts of the organization” (2008:997). Similarly, Forsgren has claimed that “the management problems related to the geographically and operationally dispersed structures should not be underestimated” (2008:7). By emphasizing the need to consider the mechanisms that originate from multinationality or from having operations in multiple dispersed locations, the present study provides further insight into the discussion on inertial forces that may impact capability development.

7.1.2 International Business Literature

By integrating the dynamic capabilities view (DCV) with the evolutionary perspective and the variation-selection-retention paradigm this study also contributes to international business and MNC literature as it demonstrates how MNC strategies and activities, in different contexts, trigger various mechanisms and complex outcome patterns related to capability development. By putting forward dynamic processes by which MNC capabilities shape or are shaped by the external environment the study extends the traditional IB literature that has mainly looked at firm resources and capabilities as prerequisites for internationalization or as relatively static firm-specific advantages, and thereby offered only limited insights on capability dynamics under the conditions of globalization. Moreover, this study demonstrates how capability development is increasingly an inter-firm, instead of an intra-firm phenomenon, and suggests that the MNC advantages increasingly relate to, and are

augmented by, its capacity to use not only the subsidiary network, but also its external network to develop capabilities. At the same time, it provides an illustration of how the liabilities of the MNC can be associated with the complexity of the context internal and external to the MNC that may generate various mechanisms that neutralize or counteract the advantages or 'powers' of the multinational firm.

By demonstrating how multinational firms modify the business environment and the external selection environment with their products, services and business models, the study complements the work by Cantwell *et al.* (2010) and Dunning and Lundan (2010) on the institutional environment. By incorporating the external environment into the analysis and recognizing the interplay between the external environment and the firms' internal processes, this study contributes not only to international business research but to research more generally as it responds to the call for "synthesis of the resource- and environment based perspectives" (Priem and Butler, 2001:31) including the "ways in which capabilities and environmental conditions shape each other" (Henderson and Mitchell, 1997:12).

Finally, the study illustrates how external events interact with firm action to produce change in firms that is characterized by non-linearity and equifinality, and may result in industry level changes that are revolutionary rather than evolutionary by nature. In doing so it provides evidence of teleological and dialectical models of development and change (Van de Ven and Poole, 1995) in addition to the linear and sequential models that have dominated international business research.

This dissertation follows Westney in her argument that evolutionary models are ideal for studying processes and that are 'multi-level, complex and emergent' and that "making the evolutionary model of the MNE more explicit, examining the assumptions on which it is grounded, and drawing more systematically on recent developments in organization theory can provide a stronger theoretical anchor for MNE research" (2009:118). A way to take the present study forward is to investigate the presence of various logics in the different evolutionary subsystems (geography, business, function) within the MNC⁸².

⁸² See Westney, 2009, for a discussion on the evolutionary subsystems within the MNC

7.2 Empirical Contribution

This study also broadens empirical research on organizational capabilities with longitudinal case study and process research founded on a critical realist paradigm. The adoption of a critical realist approach (Pawson and Tilley, 1997) provided the following advantages. First, it provided a structured way to approach capability outcomes (O) that relate to certain mechanisms (M) or internal and external conditions (C). Secondly, it enabled access to the embeddedness of capability development within a wider set of micro and macro forces, acknowledging that causal impacts are not fixed but contingent because the social world is constantly changing. It also recognizes that collectivities have properties that emerge from interaction. The study also suggests that the dynamic capabilities concept can be related to the powers, potentialities and liabilities of an organization thereby providing a deeper understanding of the concept. This approach also responds to a call for more longitudinal field research and case-based methods within organizational capabilities research (Helfat *et al.*, 2007), process research in studying organizational change (Aldrich and Ruef, 2006; Pettigrew *et al.* 2001) as well as for ‘methodological pluralism’ and ‘contextualized explanation’ within international business research (Piekkari *et al.*, 2009; Welch *et al.*, 2011). In studying the interactions between internal and external environments, it is also likely to make an empirical contribution to the literature on co-evolution (Lewin and Volberda, 1999).

First, within organizational capabilities research, Helfat *et al.* (2007) contend that despite the conceptual link and connection between capabilities and processes, the research on dynamic capabilities has been to a large extent dominated by content research and deductive methods. They call for broadening both the disciplinary and methodological base, arguing that both longitudinal field research and “case-based approaches and other methods used to study strategy process will increase our depth of understanding of dynamic capabilities as well” (Helfat *et al.*, 2007: 36). They also contend that dynamic capabilities research “fundamentally concerns how organizations emerge, develop, grow, change, decline, and rejuvenate over time” (Helfat *et al.*, 2007: 37) and that dynamic capabilities research would therefore benefit from a more integrative approach, shifting the focus of attention from ‘what’ to ‘how’ of dynamic capabilities. Likewise, Danneels (2010) has pointed to a process gap in existing research on dynamic capabilities. Moreover, Newbert (2007) claims that in contrast to the more researched topic of resources, there are a limited amount of empirical studies on capabilities in general and dynamic capabilities in

particular. Furthermore, despite the commonly accepted claim that firms not only adapt to changes in the external environment but also create market change (Eisenhardt and Martin, 2000; Teece, 2007; 2009) there has been little empirical evidence apart from studies from the institutional perspective. This study provides ample empirical evidence of how firms attempt and do create market change by means of the capabilities manifest in new and innovative products, services or business models, as well as how multinational firms, by means of geographic expansion, create extensive market change within the host market environments by transferring new capabilities to these markets including their respective networks.

Secondly, several researchers have highlighted the need to address processes in studying organizational change or transformation in order to produce more holistic explanations that incorporate the interaction between the multiple levels of the context and action (Pettigrew, 1990; Pettigrew *et al.*, 2001). The evolutionary processes of organizational development are difficult to collect on a large scale, and consequences of different internal and external factors are not easily determined through quantitative methods. Therefore, it has been argued that qualitative research is the best situated for the study of organizational processes, including “collective organized action as it unfolds over time in context” (Doz, 2011: 583). The process method adopted in the study enabled incorporating complexity, such as multiple levels and temporal sequencing and interconnections into the analysis and a dynamic analysis of these processes revealed different patterns as the firms responded to the various internal and external factors. A process research approach also enabled to access and subsequently to respond to a call for a deeper understanding of the “complex interactions that occur over time between the firm’s resources and its competitive environment” (Priem and Butler, 2001: 35).

Thirdly, this study provides insights on the interplay between the internal and external environments on capability development within MNCs and is therefore likely to make an empirical contribution to the co-evolution literature. Lewin and Volberda suggest that in research on co-evolution dynamics and complex systems of relationships that may involve non-linear feedback paths and multidirectional causalities, the “dependent-independent variable distinction becomes less meaningful since changes in any one variable may be caused endogenously by changes in others and lead to multidirectional causalities” (1999:527). The approach adopted in this study enabled access to various internal and external drivers, or selection events that changed the capability development process, as well as their co-evolution over time.

Fourthly, the methodological approach adopted in the study responds to the call made for more methodological pluralism (Piekkari *et al.*, 2009) and contextualized research (Welch *et al.*, 2011) within international business studies. Despite the strength of longitudinal case studies in capturing dynamism and underlying mechanisms of the research phenomena, to date longitudinal case studies have been fairly scarce in international business studies (Piekkari *et al.*, 2009; Blazejewski, 2011) due to the focus within IB on spatial, rather than temporal patterns (Blazejewski, 2011), and to the complexity in capturing and conceptualizing process data (Soulsby and Clark, 2011). However, as Blazejewski (2011) suggests, there are a number of topics within IB, especially those related to processes and practices, that would benefit from longitudinal, in-depth research designs, arguing that IB field itself “has developed into a direction where an increasing number of research questions call for a longitudinal approach- although so far the call has not been heeded by large numbers of researchers” (Blazejewski, 2011:253). Likewise, Burgelman (2011) claims that longitudinal qualitative research can contribute to bridging between ‘history’ and ‘reductionism’ in international business studies, adapted to phenomena characterized by complexity and involving non-linear causation.

Finally, this approach also enabled to build a ‘contextualized explanation’ of the research phenomenon (Welch *et al.*, 2011). This method, grounded in a critical realist ontology and epistemology, seeks to “reconcile explanatory rigor and contextualization through an understanding and recognition of the contingent nature of cause-effect relationships” (Welch *et al.*, 2011: 750). It relates causal explanation to understanding the constituent nature of objects and regards causality as set of interactions treated holistically (Welch *et al.*, 2011). This study also sought to exercise a high sensitivity to context and to approach context analytically rather than descriptively called for by Welch *et al.* (2011).

7.3 Managerial Implications

The interest of this thesis was to generate theory with scope, and to provide insights that are not only relevant academically but also contain pragmatic usefulness (Corley and Gioia, 2011). I therefore hope that the managerial implications that relate to the various capability logics that managers may employ to cope with or to influence the external environment also contain some practical relevance. I also hope to contribute to practitioners by highlighting the importance of aligning the internal selection environment with strategy that involves, in part, overcoming the inherent heterogeneity within the multinational firm.

As noted by Amit and Schoemaker (1993) managers make decisions concerning resources and capabilities in a setting characterized by uncertainty about economic, industry, regulatory, social, and technological environments, including competitors' behavior, and customers' preferences; as well as complexity resulting from interrelated causes that shape the firm's environment, the competitive interactions and the intra-organizational conflicts. Moreover, recent research points to the rise in a non-ergodic type of uncertainty, referring to the type of uncertainty where prediction relying on extrapolation from past events and behavior becomes infeasible (Cantwell *et al.*, 2010). The complexity and uncertainty are even more pronounced in the context of the multinational firm.

The present study suggests that firms can manage the internal evolutionary processes in a purposeful manner to generate new capabilities, to select the capabilities that they decide to compete with, or to retain capabilities selected by external forces or aim at accessing these capabilities by reaching outside the boundaries of the firm, and put forward different 'logics' the MNCs may adopt to manage their capability base. The firms may seek to develop capabilities proactively, aiming at a high amount of variation to address multiple external selection criteria or optionally rely on a limited number of internally selected capabilities. While the former logic relies on external selection and feedback mechanisms, the latter is dependent on managerial foresight and on internal selection outperforming external selection. The more reactive capability development logic builds on retention of the firm capabilities and on collecting the maximum benefit out of the firm's core capabilities. The logic that builds on access to external capabilities is more of a complementary mechanism that can be either employed proactively to generate more variation in the environment, or reactively to gain access to the required capabilities selected by external forces. Finally, just as prior research has demonstrated how ambidextrous organizations need to be able to balance between exploration and exploitation, the present study suggests that MNCs need to be able to utilize the various logics to cope with diverse contexts and optimally apply different logics not only to the corporate evolutionary system but also to the various evolutionary subsystems (business, function, geography) within the multinational firm (Westney, 2009).

These logics also embody different options that firms may undertake vis-à-vis the changes in the external environment. The firms may either adapt to changes in the external environment, requiring high flexibility and agility, or the firms may aim at anticipating the upcoming changes in the external environment, which seems to have become increasingly difficult due the increasing uncertainty and complexity of markets related to

interdependencies and interaction between various actors. Finally, a firm strategy may be aimed at driving changes in the external environment and influencing the external selection criteria. This however, requires an ability to foresee and build the required capabilities prior to the competitors, as well as substantial resources to influence external selection criteria.

In terms of managerial implications this study also highlights the temporal and spatial asymmetries present in internal selection environments within the multinational firm, and the importance of aligning the internal selection environment with strategy. This requires an ability to address ambiguous and contradictory elements, and to overcome the inherent heterogeneity within the multinational firm. Moreover, this study emphasizes the role of timing in determining an evolutionary fit between firm capabilities and the external environment. This involves not only being responsive to external changes but also avoiding a premature release of certain capabilities that in the case of insufficient support or negative feedback may hamper the future development of the capability, as suggested by Adner and Levinthal (2002).

Finally, a key concern for managers of multinational firms is also how to ascertain the firm's ability to congruently adapt to forthcoming changes or drive such changes, or in academic terms, how to ensure the firm's dynamic capabilities *ex ante*? Although this question was not the a focus of the study, this research would suggest that the dynamic capabilities are dependent above all on the amount of variation present in a firm and on its capacity to select the best variants internally prior to external selection. Consequently, the integration of the dynamic capabilities view and the evolutionary perspective seems to be a promising avenue for illuminating the *ex ante* dimension of dynamic capabilities as it points to the evolutionary processes that occur within organization prior to more strategic changes. Moreover, the integration of the more 'top-down' view of the dynamic capabilities with the more 'bottom-up' view of the evolutionary perspective helps to take into consideration multiple levels of management and thereby to identify other sources and locations to the dynamic capabilities than the top management, or the headquarters in the case of the multinational firm.

To conclude it can be contested that the world around us is fundamentally changing. In addition to nation states (e.g. China) driving changes, there are other social, democratic drivers in place that prove to be even more profound. In addition to the internal selection/managerial agency vs. external selection dichotomy addressed in this study, other emerging causal mechanisms, as well as shifts in the deep structures with causal powers that generate change should be granted scholarly attention if academic research

is to stay on par with the transforming world. An interviewed manager commented:

That's a good question that how the world will evolve. I think that this story will have a number of different chapters. Some of the current players are somewhat stagnated in their approach and refuse to see the changing ecosystem. They have a customer base and they tend to lock on and hang on to the people, and not see that the world around is changing. [Then] there are customers and players who actively experience new business models, seek for new partnerships, and are sort of open in their thinking. Those companies are most likely going to be successful in the future.

With this quote I close this chapter and thesis, and at the same time invite many more chapters to come in order to enhance our understanding of the evolving and rapidly changing world around us, and the implications it has on organizing firm activities and on developing capabilities in the future.

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Appendices

Appendix 1: List of Interviewees

	Number of interviews
NOKIA	10
Industry expert, Former Head of Corporate Strategy and CIO	1
Senior Vice President, Head of Corporate Strategy	1
Director 1, Strategic Planning, Corporate Strategy	1
Director 2, Strategic Planning, Corporate Strategy	1
Director 3, Strategic Planning, Corporate Strategy	1
Director 4, Strategy, Customer and Market Operations	1
Head of Industry Intelligence, Corporate Strategy	1
Manager 1, Strategy and Business Development, Devices	1
Manager 2, Strategy and Business Development, Services and Software	1
Manager 3, Strategic Planning, Corporate Strategy	1
Head of Insight & Innovation – Design	1
Head of Portfolio Design Management-Design	1
Head of Design Research and Foresight -Design	1
Director, Technology Officer, Corporate Strategy, China	1
KONE	16
Executive Vice President	1
Senior Vice President, Marketing and Quality	2
Senior Vice President, Technology and R&D	2
Vice President, Sales and Product Marketing	1
Vice President, Design	3
Vice President, Global Customer Management	2
Vice President, Sales and Product Marketing	1
Head of Escalator Sales and Product Marketing	1
Assistant Vice President, Portfolio Management & Business Analysis	1
Assistant Vice President, Sales and Product Marketing	1
Assistant Vice President, Market and Strategy Development	1
Managing Director, Operations	2
Managing Director, China	1
Vice President, China	1
Director, R&D, China and Asia	1
IITTALA	9
CEO	2
Group Director 1, Corporate Development and Communications	3
Group Director 2, Operations	2
Group Director 3, International Operations and Iittala Brand	2
Group Director 4, Marketing	1
HR Director	1
HR Manager	1
CFO	1
Creative Director	1
TOTAL NUMBER OF INTERVIEWS/ INFORMANTS	35/37

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