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A Strategic Fit Perspective on the Danish Mobile Application Industry

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Contents

Abstract

This research project takes a strategic fit perspective to examine the features of firms' knowledge-intensive business services (KIBSs) and their chosen sourcing strategy. The investigation of various KIBS attributes and their potential strategic fit with certain sourcing strategies provide the foundation to hypothesize about the implications for firms' performance.

With the development of the research on enterprise sourcing performance, contingency theory has received growing attention. The main concept of contingency theory is that firms need to obtain "strategic fits" with their external environment through the implementation of a proper strategy (A. Lewin Y. & Henk, 1999). Murray et al. (2009) base their work on the conception of contingency and formulate a two-stage strategy fit model, which has been used as the main theoretical foundation of our project. This paper offers a further contribution to the research field by taking the analysis onto a more practical level. This is achieved by investigating if and how the theoretical propositions apply to small and medium-sized enterprises (SMEs) in the highly volatile Danish mobile application industry.

Besides the primary focus on the first stage of Murray et al. (2009) strategic fit model, the paper explores possible linkages with the research on sourcing drivers by Roza et al. (2011) and the concept of entrepreneurial globalization by Rangan and Schumacher (2012). Interviews were conducted with company representatives from four selected case firms in order to collect first-hand data. The results indicate that the case firms possess strategic fits between most KIBS attributes and their sourcing strategies, in accordance with Murray et al.'s (2009) viewpoints. These identified strategic fits are considered as factors that could positively influence firm performance. Our interviewed data also suggest that other factors, such as "dynamic capabilities", "firm size", "entrepreneurial strategy" are considered to be critical for firms' superior performance. Moreover, we noticed that the two-stage strategic fit model of Murray et al. (2009) seems to lack an industry perspective, as limited discussion can be found concerning

the characteristics of the industry and we therefore propose the implementation of an industry angle in future research.

An additional finding relevant to Roza et al.'s (2011) research was that offshoring can be used as a cost- and resource strategy, as illustrated in all case companies. One case firm, Phases, which belongs to the small firm category, shows a prominent focus on utilizing offshoring as entrepreneurial strategies, whereas micro- and medium-sized case firms (Designit, Vertic, InSilico Aps) are driven by cost and resource factors. Two medium-sized case enterprises (Designit and Vertic) are following a relatively conservative sourcing approach, which is consistent with the empirical findings of Roza et al. (2011).

With regards to the entrepreneurial globalization concept of Rangan and Schumacher (2012), only one of the case enterprises, Phases, exhibits an extended set of entrepreneurial characteristics. The remaining investigated firms (i.e.: Designit, InSilico Aps, and Vertic) on the other hand are less entrepreneurial in terms of their sourcing strategies and thereby undertaking relatively traditional approaches to internationalize.

The paper in the end highlights potential implications for future research that could expand the understanding of sourcing processes in highly volatile environments. Managerial implications from the firm's perspective are also discussed for companies' future sustainable business growth.

Keywords: contingency theory, knowledge-intensive business services, global sourcing strategies, mobile application industry, two-stage strategic fit model, dynamic capabilities, entrepreneurial globalization, offshoring drivers

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Chapter 1 - Introduction

The objective of our research project is to answer the question on how the two-stage strategic fit model by Murray et al. (2009) can be used to investigate the relationship between the features of firms' knowledge intensive business services (KIBS) and their chosen sourcing strategy within the mobile application industry in Denmark. In addition, we want to investigate the main drivers of offshoring with regards to firm size, according to Roza et al. (2011). Further, we attempt to shed light on how the concept of entrepreneurial globalization by Rangan and Schumacher (2012) can influence firms' outsourcing decisions and potentially lead to a competitive advantage. The entire master thesis is positioned within the boundaries of the contingengy theory by Woodward (1958).

1.1 The general trend in global sourcing: from cost reduction to knowledge seeking

A recent trend has been that developing countries are becoming deeper integrated into the global economy. One of the main drivers for this integration is that globally operating firms are striving to gain competitive advantages by making use of global efficiencies and in the meanwhile increase their market extension (Hansen, Schaumburg-Müller, & Pottenger, 2007). Consequently, multinational corporations are increasingly offshoring their business activities to tap into external strategic resources and thereby build a sustainable competitive edge in order to distinguish themselves in the market (Barney, 1991).

Offshoring has been defined in multiple ways in the academic world (Mol, Van, R, & and Beije, 2005; USGAO, 2004; N. Venkatraman V., 2004). Differences of definitions lie in the "inclusion or exclusion of internally managed foreign direct investment and in the contrast between a narrow focus on specific business processes vs. an inclusive approach incorporating all business processes" (Gregorio, Musteen, & and Thomas, 2009). Offshore outsourcing is normally defined as outsourcing an organization's business processes to foreign contractors, whereas captive offshoring refers to internally managed FDI (Gregorio et al., 2009). In general, "offshoring focuses on the relocation of business functions from home base to foreign locations" (Roza, Bosch, den, Van, A.J., Frans & Volberda, 2011).

Basically, two forms of global sourcing strategies can be taken by firms: "(1) management of logistics to identify which production units will serve which particular markets and how components will be supplied for production and (2) management of the interfaces among R&D, manufacturing and marketing on a global basis" (Kotabe, Murray & Mol, 2008).

By applying a global sourcing strategy, enterprises are able to exploit their own as well as their suppliers' competitive advantages and thereby build on locational advantages of various countries in order to perform better in the global market (Kotabe et al., 2008).

Global sourcing has experienced three movements. Firstly, sourcing of manufacturing tasks; secondly, sourcing of information technology; and lastly, sourcing of business processes (Kotabe et al., 2008). In recent years, there has been a shift from outsourcing low value-added activities (e.g.: manufacturing) to more advanced tasks, such as finance, sales, accounting, and other business processes (Coase, 1937)(Couto, Marni, Lewi, & and Peeters, 2006). The motives of outsourcing have moved from cost reduction to innovation and from efficiency seeking to growth, which lead to a worldwide expansion of administrative and technical services (Karmarkar, 2004).

The UNCTAD study in 2005 presents the continuous process of a firm's internationalization of R & D activities, which serves as evidence for the above discussed trend:

"Enterprise may start by contracting out 'commodity' R&D. If this succeeds, they may realize the benefits of greater specialization and learn how to manage better the contractual and integration process. With time they may develop trust in their collaborators and establish durable knowledge networks. This process can continue, pushing back the limits of what is acceptable at any given time"(UNCTAD, 2005).

Despite the increased general interest in research on offshore outsourcing in the global economy, most of the implemented studies have had a strong focus on large firms, neglecting to study small and medium-sized enterprises (SMEs) (Gregorio et al., 2009). Gregorio et al.

(2009) argue that offshore outsourcing enhances "international competitiveness by enabling SMEs to reduce cost, expand relational ties, serve customer more effectively, free up scarce resources, and leverage capabilities of foreign partners" (Gregorio et al., 2009). Hence the focus of this research project is put on sourcing strategies of SMEs and their respective outcomes.

1.2 KIBS and KIBS-based industries

KIBSs have been defined in various ways. Bettencourt et al. (2002) describe KIBSs as value-added business activities that comprise "the accumulation, creation, or dissemination of knowledge for the purpose of developing a customized service or product solution to satisfy the client's needs" (Bettencourt et al., 2002). Moreover, KIBSs are characterized as "complex, unstructured, and highly customized to meet a customer's unique needs" (Y. J. Murray et al., 2009). KIBS-based industries are the industries that are relatively technology- or human resource intensive (Organisation or Economic Co-operation and Development, 1999) and one of the crucial features of KIBS industries is that "relying heavily on professional knowledge, i.e. knowledge or expertise related to a specific (technical) discipline or (technical) functional domain" (Hertog, 2000).

As a consequence of the advancements in information and communication technology (Karmarkar, 2004), both small and large corporations start to farm out their business services that used to be performed internally to foreign contractors (Y. J. Murray, Kotabe, & Westjohn, 2009). The Offshoring Research Network's (2007) annual survey indicates that the figure of firms that offshore services increased by 25% annually from 2004 to 2006 (Offshoring Research Network, 2007). A recent report by McKinsey Global Institute (2012) indicates that "service exports already make up one-quarter of the overall exports of mature economies, and that share could rise to one-third by 2030" (McKinsey Global Institute, 2012). Among various kinds of services, knowledge-intensive business services (KIBSs) devote above 30% of the overall added value from services in the United Kingdom and the United States (Bettencourt, Lance, Amy, Stephen, and Robert, 2002).

With a shift from offshoring tangible assets to offshoring intangible assets (Mudambi, 2008), global KIBS sourcing is expected to grow continuously (McKinsey Global Institute, 2005b). Between 1996 and 2006, 15 million new jobs have been created in knowledge-intensive service activities in world's mature economies (McKinsey Global Institute, 2012).

1.3 An overview of the mobile application industry

The mobile application industry is selected as a representative knowledge-intensive business sector. Dated from the mid-1980s, the international telecommunication industry has become one of the key industries in the global economy, within which the mobile phone business plays a critical role (Hess & Coe, 2006).

With a relatively short history, the mobile business has undergone rapid developments in the recent years and promoted the development of the internet and e-commerce in the wireless world (Kalakota & Robinson, 2002). As an emerging business sector, the mobile application industry shares similar characteristics as other sunrise industries, such as constantly changing and complicated, which pose a range of challenges and uncertainties both technologically and strategically (Porter, 1979).

In terms of technology, the fast technological developments in an emerging industry have created a variety of uncertainties and "the battle for establishing standards, which are typical in the beginning stages of the life cycle of an industry" (Camponovo & Pigneur, 2003). These uncertainties are prevalent under the rapid growing environment of a risky industry and therefore enterprises operating in such surroundings have to adopt various kinds of business strategies and constantly adapt to upcoming changes in order to maintain competitive edges over their rivals (Porter, 1979).

The current so-called "mobile application ecosystem" is composed of "the combined participation of users, application developers, handset manufacturers/Operating System (OS) developers, off portal application providers, and mobile network operators"

(MarketsandMarkets Research, 2010). A series of factors, such as "advancement of network technologies, restructuring of revenue-sharing pattern, lowering of mobile data usage cost, growing adoption of smartphones, and increase in application usability", have greatly promoted the expansion of the global usage of mobile applications (Ibid.).

An independent study by Arbitron Mobile (January 2011) analyzed 2200 smartphone users concerning their usage activity in the United States of America and the United Kingdom. The results stress the importance of mobile applications. Although messaging is still the number one activity with 671 average (avg.) monthly minutes of usage, mobile applications are in the second position with 667 avg. monthly minutes of usage. Interesting to note is that mobile applications are ahead of voice (telephone calls) with 531 avg. monthly minutes of usage and web use with 422 avg. monthly minutes of usage (Arbitron Mobile, 2011).

The substantial success and popularity of Apple's application store indicate the international salability of mobile applications and at the same time demonstrate the huge business potential of the mobile application market. According to MarketsandMarkets research (2011), the global mobile application market is expected to worth US$25 billion by the year of 2015, with a compound annual growth rate of 29.6% between 2010 and 2015 (MarketsandMarkets Research, 2011). This shows the very rapid growth, especially when looking at an earlier report from 2010, when the global applications market was only worth approximately US$6.8 billion (MarketsandMarkets Research, 2010). Though still young, this emerging industry has become highly competitive and been boosted by late-comers such as Google, Nokia, and RIM (Ibid.).

Beneficial for the mobile applications industry has been the recent restructuring in revenue models, the internationally decreasing mobile data usage cost, increasing usability of applications, technological innovation and advertisement advancements (MarketsandMarkets Research, 2011).
These developments pushed the adoption of mobile applications and even shielded the industry from the global economic downturn. In 2008, the first year of the international recession, the

mobile applications industry boasted a 146% growth in download numbers as well as increasing revenues (Ibid.). This positive development is predicted to continue, as the "revenue from mobile applications is set to quadruple from 2010 to 2013", according to a Gartner Report in 2010 (Prescott, 2010). It has been added in the report that the mobile application makers will become increasingly dependent on advertising revenue, as the avg. revenue per app will continue to decrease (Ibid.).

A Flurry report from 2012 reveals that the smart device (concentration on mobile devices such as smart phones and tablet computers) adoption is "10X faster than that of the 80s PC revolution, 2X faster than that of 90s Internet Boom and 3X faster than that of recent social network adoption" has thereby "surpassed that of any consumer technology in history" (The Flurry Blog, 2012). At present, the Flurry report "estimates that there over 640 million devices" running the two predominant mobile operation systems iOS (Apple) and Android (Google) in July 2012 (Ibid.). In order to enable a better understanding of the international mobile applications market, we include the following figure (Figure 1.1) that shows the fastest growing markets around the world.

Figure 1.1: Fastest growing mobile device markets
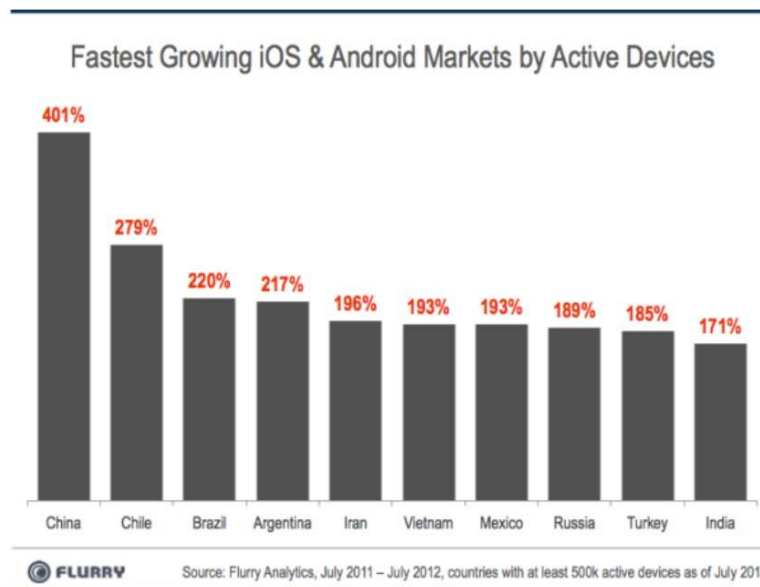
Source: (The Flurry Blog, 2012)

All these reports and surveys are evidence for the rapid development of the mobile application industry. An industry that changes and evolves at such a fast pace is characterized by high volatility and demanding market conditions. Firms in this industry need to be highly flexible and willing to adapt to accelerating changes as well as adjust to intensifying local and global competition.

The research focus of this paper is limited to the mobile application market of Denmark. The geographical proximity makes it possible and accessible for us to acquire available data from case companies based in Denmark. Furthermore, the Danish market has reached a certain level of maturity regarding the handset industry and mobile application business. According to a market research report by Distimo released in 2009, 65% of mobile applications were originated from the United States developers; 20% were designed by European developers; and 12% were from the United Kingdom, in terms of the Android market (Distimo, 2009).

1.4 Research questions

Having identified the research context of the thesis, four mobile application development corporations were chosen as primary case companies, on the basis of certain selection criteria, which will be discussed in detail in the third chapter (Chapter 3 – Methodology).

Focusing on a developer's perspective in the mobile application industry, the objective of this paper is to examine whether or not there is a strategic fit between a firms' set of KIBS attributes and its chosen sourcing strategy. Murray et al.'s (2009) two stage-strategic fit model provides us with the fundamental theoretical lens to investigate the relationship of how a specific KIBS attribute in combination with a certain sourcing strategy can potentially pose a strategic fit and thereby influence business performance positively.

In consideration of the above discussed research objective, we propose the following two primary research questions and a few related secondary questions:

1. How can Murray et al. (2009) two-stage strategic fit model be utilized in investigating the relationship between firms' KIBS attributes and their chosen sourcing strategy in the mobile application industry?

The combination of specific KIBS attributes and certain sourcing strategies will potentially lead to a strategic fit which will, according to Murray et al. (2009), result in superior performance. The question hereby is if their relationship corresponds to the proposition by Murray et al. (2009)? If not, which aspects can serve as explanatory factors? What might be additional factors that could be integrated?

2. What are the main drivers, according to Roza et al. (2011), for mobile application development firms to source their business activities?

How can the strategies of entrepreneurial globalization be instrumentalized in firms' outsourcing decisions and potentially lead to a competitive advantage?

Chapter 2 - Literature Review

2.1 Relevant literature

This chapter contains relevant definitions of the key concepts and main theories. The fundamental theoretical framework that structures the research project will be presented and discussed in detail.

2.1.1 Offshoring drivers and entrepreneurial globalization

Firms have been employing offshoring strategies for many years by relocating their business activities. The focus of the offshoring process is on distributing business functions from enterprise headquarter location to foreign places (A. Y. Lewin & Peeters, 2006b). Offshoring is motivated by a series of drivers, ranging from cost reduction to knowledge and technology acquisition and from efficiency gains to innovation (Maskell, Pedersen, Petersen & and Dick-Nilsen, 2006). By linking offshoring motivations with firm size, Roza et al. (2011) categorize offshoring drivers into three groups, in terms of transaction cost economics, the resource-based view of the firm, and entrepreneurship theory (Roza et al., 2011). The empirical study by Roza et al. (2011) indicates that the drivers of offshore outsourcing tend to vary according to firm size. For large and small firms, cost drivers are most crucial factors for them to offshore, whereas medium-sized and large firms attach great importance to resource drivers. Medium-sized firms favor entrepreneurial strategies as sourcing strategies and they show a tendency to nearshore business activities (Gregorio et al., 2009; Roza et al., 2011; Roza et al., 2011).

Firstly, transaction cost economics has been applied in explaining the cost drivers of offshoring (Farrel, 2005). Low labor costs in specific locations are not enough in explaining the offshoring cost driver, as the increased transaction costs during the offshoring process might in the meanwhile counteract the cost reduction to some extent (Stratman, 2008). Firms exploit specific ownership advantages (e.g.: economies of scope) through reconfiguring their global value chain (Doh, 2005; Dunning, 1980). By benefiting from lower labor salaries, the ownership advantages are transferred to reduce the costs (Dunning, 1980). Through offshoring strategies, firms are able to decrease labor costs, government costs, as well as management costs and

hence attain decreased transaction costs (Coase, 1937; Williamson, 1975). Transaction cost economics provide rationales for offshoring, offshore-outsourcing, or sourcing strategies (Ellram, Tate, & Billington, 2008; Stratman, 2008; Vivek, Banwet, & and Shankar).

The second group of driver is the resource-based view (Barney, 1991; Penrose, 1959; Vivek et al.), which is also known as resource drivers. According to the resource-based view, the availability of for example expertise or other kinds of resources at offshore locations is the main reason for offshore decisions (A. Y. Lewin & Peeters, 2006b). In the information-intensive industry, resource drivers concentrate on efficiency- and knowledge seeking, which act as main motives for global activities (Nachum & Zenger, 2005). In order to seek for resources to maintain and improve its competitive position, the firm has to search at distanced locations (A. Y. Lewin & Peeters, 2006b; Westhead, Wright, & and Ucbasaran, 2001).

Entrepreneurial drivers as the third category of offshore drivers also stimulate offshoring decisions (Roza et al., 2011). Basically, entrepreneurship is relevant to the combination of opportunity assessment, resource mobilization, as well as team building, in order to create a new enterprise (Timmons & Spinelli, 2003). While offshore outsourcing has been typically viewed as a means to reduce costs, it may also involve administrative and technical services which would be beneficial for firms, especially SMEs, to seize entrepreneurial opportunities by reducing costs, expanding relational ties with external contractors, breaking through resource constraints, and leveraging resources of other firms (Gregorio et al., 2009).

Entrepreneurship theory (Baumol, 1993; Fiet, 2001; Phan, 2004) argues the possibility of achieving new resource combinations by "moving beyond resources" (Foss & Ishikawa, 2007; Roza et al., 2011) and highlights the significance of strategic choice (Baden-Fuller & Stopford, 1994; E. Mosakowski, 2002). Entrepreneurship is about "carrying out new combinations" (Schumpeter, 1934); it entails the capability to identify emerging opportunities and hence strengthen firms' resource base in order to realize these opportunities (Arthurs & Busenitz,

2006). Moreover, entrepreneurship presents firms' willingness to develop, explore, and extend its operations at further distance (Davidsson, 1989).

Based on entrepreneurship theory, Yoshino and Rangan (1995) argue that "globalization has put entrepreneurship at the heart of corporations" (Yoshino & Rangan, 1995). According to Rangan and Schumacher (2012), globalization enables firms to operate in vast parts of the world. With access to resources available in other locations, firms are able to "rethink their business from ground up, reconfigure their value chain activities globally, leverage the resources of other firms, create strategic options for their firms, and have improved their competitive position in the market." (Rangan & Schumacher, 2012).

The latest shift to a global market and intensive global competition calls for new business strategies and adjustments of already existing business models. According to Rangan and Schumacher (2012), enterprises need to "rethink their business and develop a global value creation/delivery model" (Rangan & Schumacher, 2012). One reason for this changed global economy is the extensive "growth of offshoring in recent years" (Ibid.).

In order to define what entrepreneurial globalization is, the term entrepreneurship needs to be characterized. Dollinger (1999) defines entrepreneurship "as the creation of an innovative economic organization (or network of organizations) for the purpose of gain or growth under conditions of risk and uncertainty" (Dollinger, 1999).

The authors of entrepreneurial globalization exclaim that entrepreneurship "consists of five inter-related steps: rethinking an existing business, reconfiguring its value activities, leveraging other firms' resources, creating new strategic options, and developing organizational innovations to create sustainable long term value." (Rangan & Schumacher, 2012).

These five steps are not just applicable to new firms, but also work for established firms. Lately, even large firms are experimenting with corporate entrepreneurship, due to the fact that

corporate rejuvenation is understood to be crucial for an enterprises long term survival (Thornberry, 2006).

With globalization enabling companies to access new markets and locations from "where needed resources could be obtained", firms are capable to reconfigure their value chain activities, leverage other companies resources, business can be reevaluated and promote organizational innovations (Rangan & Schumacher, 2012).

Entrepreneurial globalization is characterized by firms that do not have monopolistic advantages and move to foreign locations to create new advantages. Companies that have implemented entrepreneurial globalization distribute their value activities globally and leverage other firms' resources. These kinds of enterprises promote "a willingness to seek, recognize, and exploit new strategic options for growth wherever in the world they find them" (Rangan & Schumacher, 2012). A successful business performance can only be accomplished if the entrepreneurial firms constantly and frequently adapt their processes and systems in order to increase the efficiency (Ibid.).

Table 2.1 on the next page summarizes the distinct differences between the traditional global approach and entrepreneurial globalization.

Table 2.1: Traditional vs. Entrepreneurial Approaches to Globalize

-	Traditional Globalization	Entrepreneurial Globalization
View of Globalization	Extension of monopolistic advantages to new countries	Rethink the existing business and do it differently globally
Value chain activities	Replication of all or most activities in-house in many countries	Reconfigure value activities and distribute them worldwide partly in-house and partly with other firms
Use of other firms	Maintain control over most activities and use other firms mainly as arms length suppliers of inputs	Gain leverage through other firms' resources through strategic partnerships
Future growth and strategic evolution	Driven from the center or headquarters and mostly incrementally	Create and exploit strategic options as they occur worldwide because of global configuration of value activities
Organizational processes and systems	Slow to change and the emphasis is mainly on managerial control	Change quickly to suit a more entrepreneurial firm where the emphasis is on customer value

Source: (Rangan & Schumacher, 2012)

2.1.2 Knowledge-intensive business services and the two-stage strategic fit model

With the shift in outsourcing drivers from cost reduction to knowledge-seeking, firms increasingly utilize external talent and innovation capabilities as an imperative source of competitive advantage (UNCTAD, 2007). Various services that used to be performed in-house or sourced to domestic suppliers are now being outsourced by large and small firms (Y. J. Murray et al., 2009). Of all kinds of services, knowledge-intensive business services (KIBSs) consist above 30% of the overall value added from services in the United States and the United Kingdom (Bettencourt et al., 2002).

The concept of knowledge-intensive business services (KIBSs) originates from Miles et al. which defined KIBS as "services which are involved in economic activities intended to result in creation, accumulation or dissemination of knowledge" (Fagiolo & Luzzi, 2006). KIBS firms are "enterprises whose value added service activities consist of the accumulation, creation, or

dissemination of knowledge for the purpose of developing a customized service or product solution to satisfy the client's needs," (Porter, 1985). Murray et al. (2009) add that KIBSs are highly customized, complex and unstructured to meet customers' unique needs. KIBSs are considered to be specifically "relevant for modern economies, because of their prominent role(s) in enabling SMEs to innovate in a more effective, cost-effective, and/or timely manner" (Qian & Li, 2003). Di Maria et al. (2012) take the definition a step further and consider KIBS to have an important role for the entire economic system. Since knowledge can be a driver for innovation, KIBSs are frequently labeled as "sources of innovation", due to their indirect involvement in the creation of innovation (Karra, Phillips, & Tracey, 2008).

In order to obtain a deeper understanding of global sourcing strategy of KIBSs, Murray et al. (2009) propose the two-stage strategic fit model, which "emphasizes the antecedents and conditions under which a firm's (i.e., systems integrators) global sourcing of KIBSs influences performance" (Y. J. Murray et al., 2009).

Contingency theory lays the foundation for the two-stage strategic fit model by Murray et al. (2011), which argues that a company's performance depends on the match between its strategic behavior and its external as well as internal environmental situation (Van de Ven, A., H. & Drazin, 1985). The basic idea is that an enterprise's optimal structure relies on the pursued strategy, the employed technology and the company's environment (Burton, Eriksen, Hakenssen, & Snow, 2006). Hereby the organization (enterprise) is an open system where a balance between internal needs and external environmental conditions needs to be achieved. Further, Hofer (1975) argues that the contingency approach postulates that there is no one best strategy affiliated with performance (Hofer, 1975).

Additionally, information is exchanged within the firm through the input-process-output procedure (Schonhoven, 1981). In this procedure, "input" stands for contextual issues. These contextual issues can potentially create either uncertainty or opportunities (Thompson, 1967). The "input" thereby has a strong effect on how an organization (hereby the enterprise) should

run (Ibid.). "Process" on the other hand refers to the organizational activities that handle the contextual issues through the use of information sharing and at the same time regulating the business itself (Wong, Christina, W., Y., Lai, & Cheng, T., c., e., 2011). "Output" can be described as the results of the business processes, which shows how capable the enterprise was in processing, adjusting, and coping with challenges that derive from the external environment (Ibid.).

In summary, internal as well as external conditions could influence a company's performance. This contingency-theoretic perspective provides an appropriate theoretical base to examine the effect that strategy, internal and external environmental conditions have on a firm. The factor performance is taken into account to measure the effectiveness of various strategies given an enterprises set of internal and external environmental conditions (Grant, 2010)(Wong, Christina, W., Y. et al., 2011).

Robles (2011) adds that there are two types of uncertainties that affect a firms decisions, namely environmental (external) and behavioral (internal). Environmental uncertainty results from "external environmental factors that are exogenous and largely unaffected by the firm's actions, but which impact firm decisions" (Robles, 2011). Behavioral uncertainty on the other hand is caused by a firms "inability [...] to assess the impact of opportunistic and self-seeking behavior of different actors in a transaction" and can be directly decreased by the companies' actions (Folta, 1998).

The internal conditions of an enterprise are its resources and capabilities, internal structures and systems as well as the general business operations. A company's external environmental conditions are influenced by different external players (i.e., competitors, customers, suppliers) and factors such as business opportunities (Fan, Stallaert, & Whinston, 2003).

Murray et al. (2009) have taken the initial contingency theory a step further by applying it to knowledge intensive business services (KIBSs). They are thereby adding to the rich discussion on how a company's strategy needs to be balanced with the firms internal set up (internal

conditions) and the industry environment (competitors, customers, suppliers). The figure (Figure 2.1) below from Grant (2010) provides a graphic illustration of this interaction.

Figure 2.1: Contingency theory
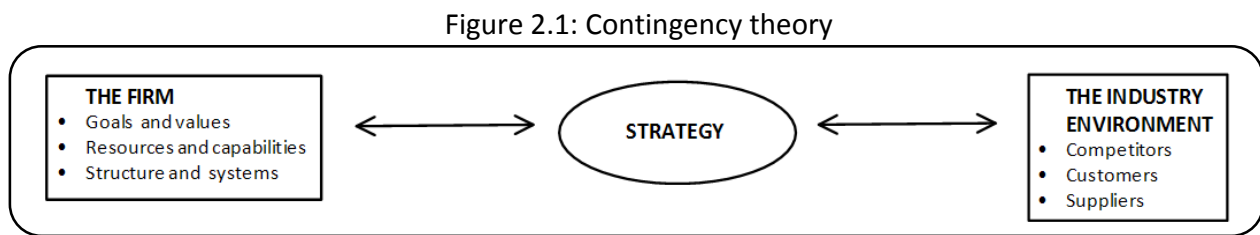
Source: (Grant, 2010)

In the course of our research project we are trying to analyze the internal and external conditions that directly influence our primary case companies, which are in accordance with the contingency theory. Specifically the strategic fit is of critical importance to our primary theoretical framework. In order for a strategy to be successful, it needs to be "consistent with the firm's external […] and internal environment" as well as its "goals and values, resources and capabilities, and structures and systems" (Grant, 2010)

As discussed earlier, the two-stage strategic fit model furthers the contingency theory by utilizing it in a knowledge intensive business environment. By investigating the internal characteristics of knowledge-intensive business services (KIBSs) and respective sourcing strategies, this conceptual framework explains why firms perform differently even when they are following similar strategies. This model greatly enriches the KIBS research as well as the global sourcing literature.

Research conducted by Murray et al. (2009) indicates that there needs to be a strategic fit between the sourcing strategy and KIBS attributes in order to achieve a favorable business performance. This strategic fit is considered to be the first stage of the model.

Another name for the first stage is "sourcing strategy selection stage", in which the effect of KIBS attributes (i.e. innovativeness, variability, tacitness and inseparability) on the sourcing-

strategy performance is examined. In the second stage, which is called the "sourcing strategy implementation stage", the effects of a firm's dynamic capabilities (i.e. absorptive capacity and integration capability) on the sourcing strategy performance are studied (Lu & Beamnish, 2001). This two-stage model will serve as the primary element of our theoretical framework.

2.1.3 KIBS attributes in the sourcing strategy selection stage

Murray et al. (2009) focus their work on four specific KIBS variables, namely "variability", "inseparability", "tacitness", and "innovativeness", which is visualized in Figure 2.2 below (Y. J. Murray et al., 2009). It is important to note that our report will mainly focus on the first stage of the strategic fit model, as indicated by the red circle in Figure 2.2.

Figure 2.2: Two-stage strategic model for KIBS sourcing, by Murray et al. (2009)

Notes: NI = onshore insourcing, NO = onshore outsourcing, FI = offshore insourcing, and FO = offshore outsourcing.
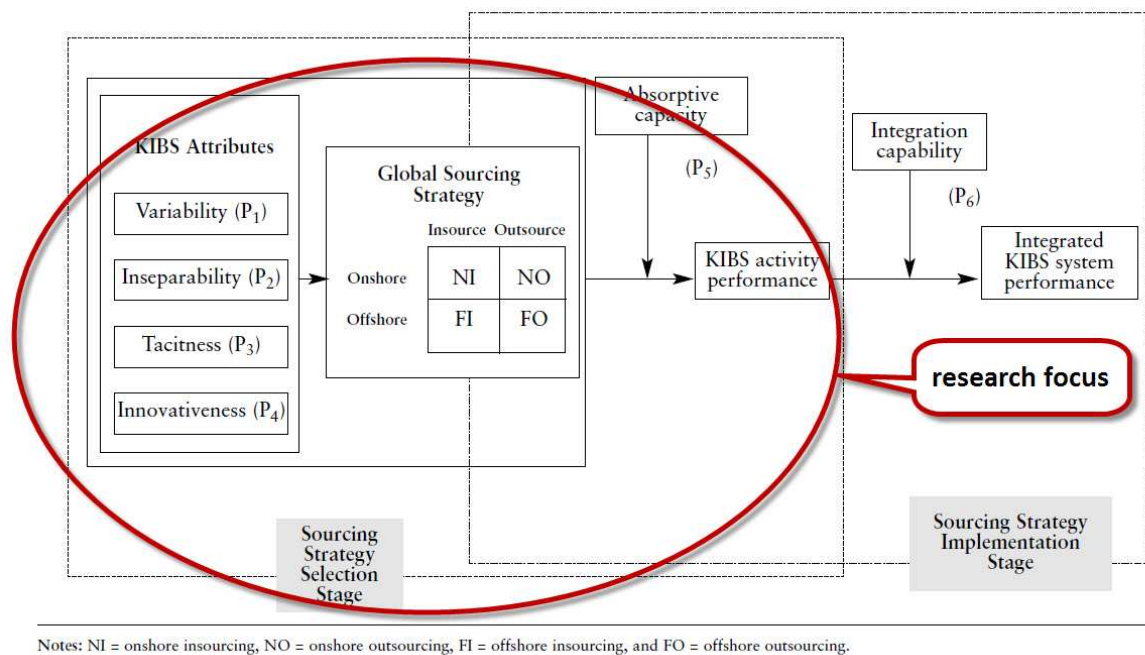
Source: (Y. J. Murray et al., 2009)

Variability

Variability is defined as "variation in the service's standard or nature" (Y. J. Murray et al., 2009). Especially in the service sector, service experiences tend to be different each time. Research

shows that clients' value reliability and consistency the most in regards to service delivery (Ibid.). According to Hsieh et al (2002), one of the challenges of variability is that a high level of variability can lead to increased monitoring and controlling costs and therefore companies prefer to internalize in order to decrease variability (C. M. Hsieh, Lazzarini, & Nickerson, 2002). Another perspective on variability is that it is easier to manage quality within the company, thus insourcing poses a valid option (Casson, 1982). Murray et al. (2009) summed up the variability section with Proposition 1 that says "the more variable the KIBS activity, the more the sourcing firm relies on global insourcing (i.e., onshore and offshore insourcing), as opposed to global outsourcing (i.e., onshore and offshore outsourcing), to achieve higher levels of market performance for the KIBS activity" (Y. J. Murray et al., 2009).

Inseparability

The inseparability attribute of KIBSs refers to "the degree to which the production and consumption of a service can occur in a different time and space" (Y. J. Murray et al., 2009). It means that "whether the customer needs to be physically present (i.e.: space) and whether the production and consumption of the service must occur simultaneously (i.e.: time)" (Y. J. Murray et al., 2009; Regan, 1963). As the level of inseparability increases, it is less possible for firms to obtain sufficient external suppliers, due to the fact that KIBSs tend to be generally customized (Kotabe & Murray, 2004). On the other hand, when the inseparability level is relatively low and tasks could be separated in terms of time and location, there are more options for companies to choose service providers and hence firms may become more reliant on onshore/offshore outsourcing (Y. J. Murray et al., 2009).

In view of the above detailed explanation on the second attribute – inseparability, Murray et al. (2009) come up with the second proposition (Proposition 2), stating that "the more inseparable the KIBS activity, the more the sourcing firm relies on onshore insourcing and the less on onshore outsourcing, offshore insourcing, and offshore outsourcing to achieve higher levels of market performance for the KIBS activity" (Y. J. Murray et al., 2009).

Tacitness

According to Kogut et al. (1992), knowledge itself consists of information and know-how. There are two types of knowledge, namely explicit and tacit. Explicit knowledge is codifiable and involves "know-how that is transmittable in formal, systematic language and does not require direct experience of the knowledge that is being acquired" (Howells, 1996). Tacit knowledge on the other hand, is gained through direct experience, more complex, is less codifiable and cannot be transferred in any direct way (Y. J. Murray et al., 2009). Cohen et al. (1990) argue that the lower the degree of explicitness and codifiability of tacit knowledge, the more challenging it is for firms or individuals to assimilate it (Cohen & Levinthal, 1990).

Murray et al. (2009) acknowledge that many processes in KIBSs are highly tacit, which makes the transfer and acquisition quite demanding. Kogut and Zander (1993) add that firms benefit from transferring knowledge to wholly owned subsidiaries, since it can be done at a much lower cost, in contrast to external knowledge transfer.

Another useful theory for the investigation of tacitness is the concept of co-location that Yukako et al. (2005) proposed. Co-location is when transferor and transferee are located in close proximity and thereby are able to solve problems together (Yukako, Kotabe, & Murray, 2005). That is the challenge of offshoring, since co-location can not be easily achieved, due to the geographic and time distance of the involved firms (Kuldeep, Fenema, van, C., Paul, & Glinow, von, Ann, Mary, 2009). This lack of co-location additionally impedes learning and common understanding, which can be crucial for highly tacit KIBSs.

Murray et al. (2009) have consequently formulated Proposition 3:
"The more tacit the KIBS activity, the more the sourcing firm relies on onshore insourcing and the less on onshore outsourcing, offshore insourcing, and offshore outsourcing to achieve higher levels of market performance for the KIBS activity." (Y. J. Murray et al., 2009)

Innovativeness

Murray et al. (2009) understand innovative KIBSs as "potential opportunities for firm to achieve a competitive advantage" (Y. J. Murray et al., 2009).

This innovativeness has become essential in a knowledge-intensive environment. Quinn (2000) supports that argument by arguing "no one company acting alone can hope to out-innovate every competitor, potential competitor, supplier or external knowledge source around the world" (Quinn, 2000). The recommendation by Murray et al. (2005) is that firms "should outsource from suppliers that possess new and complimentary competency" (Y. Murray Janet., Kotabe, & Zhou, 2005).

Especially sourcing from specialist suppliers, can lead to sourcing firms gaining "access to the in-depth knowledge, skills, investment infrastructures, and innovative capabilities of each supplier in different stages of the value chain" (Y. J. Murray et al., 2009). There are definite benefits for the sourcing firm as well as the supplier, which is contrary to the concept of "hollowing out the firm" that concerns some service suppliers and the issue of knowledge leakage (Tallman & Phene, 2006) that is usually understood to be one-sided.

Companies that neglect outsourcing and at the same time focus on insourcing would inhibit a valid source of innovations and prevent themselves from being able to rapidly adapt to potential new value added services (Quinn, 2000). An additional advantage of applied innovativeness is the possibility for the sourcing firm to share the risk with its suppliers (Y. J. Murray et al., 2009), which is especially beneficial for resource restrained SMEs.

Murray et al.'s (2009) proposition (Proposition 4) in regards to innovativeness is:
"The more innovative the KIBS activity, the more the sourcing firm relies on global outsourcing (i.e., onshore and offshore outsourcing), as opposed to global insourcing (i.e., onshore and offshore insourcing), to achieve higher levels of market performance for the KIBS activity" (Y. J. Murray et al., 2009).

Regardless of whether there exists a coalignment between KIBS attributes and a specific sourcing strategy, the firms' dynamic capabilities can potentially enhance or weaken the KIBS performance during the implementation stage.

2.1.4 Firms' dynamic capabilities in the sourcing strategy implementation stage

Murray et al. (2009) highlight the importance for firms to achieve a strategic fit between a specific KIBS attribute and firms' sourcing choice, as this co-alignment might result in superior business performance than those that do not possess the match. However, it has been noted that firms may get differing outcomes even when they are implementing the same set of "appropriate" sourcing modes (Y. J. Murray et al., 2009). According to Venkatraman and Camillus (1984), the efficiency and effectiveness of a certain strategy is not only influenced by the fit between strategy and structure, but also by the operation at the managerial level (N. Venkatraman & Camillius, 1984). Based on the earlier literature, Murray et al. (2009) argue that after the strategy selection stage, the dynamic capabilities of the firm (i.e., absorptive capacity and integration capability) may "accentuate or attenuate the desirable sourcing strategy-performance effects at the integrated KIBS system level" (Y. J. Murray et al., 2009). The second part of the strategic fit model, which is named as "the sourcing strategy implementation stage", explains the reasons for firms to achieve different performance although they are implementing the considered proper strategy (Ibid.).

Dynamic capabilities are defined as "the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments" (Teece, Pisano, & Shuen, 1997). The concept of dynamic capabilities takes the resource-based view (RBV) a step further by arguing that firms have to innovate timely and flexibly and own the management capabilities to combine and employ both internal and external resources, in order to excel in the global competition (Ibid.).

The traditional RBV fell short in terms of explaining how and why certain companies can achieve competitive edges under an environment with high velocity and uncertainties (Eisenhardt &

Martin, 2000). The RBV has also been criticized for its inability to characterize the system by which resources assist the formulation of a competitive advantage (E. Mosakowski & McKelvey, 1997; Priem & Butler, 2001). Dynamic capabilities theory extends the RBV by pointing out firms are capable of utilizing and redeploying existing resources to create new values. In the case of KIBS sourcing strategies, Murray et al. (2009) recommend that "the systems integrator must have both absorptive capacity in using the KIBSs sourced from external suppliers and integration capability in combining both internal and external knowledge to enhance performance at the integrated KIBS system level" (Y. J. Murray et al., 2009).

In sum, to achieve a satisfying KIBS performance through global sourcing strategies, firms should not only examine the KIBS attributes, but also their dynamic capabilities. Enterprises could have a temporary appropriate sourcing strategy for a specific KIBS activity. However, the overall performance of an integrated KIBS system is determined by interfaces of various KIBS activities, which requires the system integrator to absorb the newly acquired KIBS and integrate the internationally sourced KIBS activities into an inter-connected KIBS system (Y. J. Murray et al., 2009).

2.2 Theoretical framework

The objective of this section is to present an overview of relevant theories and the model being used as our theoretical foundation. Before the investigation on mobile application development firms' sourcing strategies from a strategic fit perspective, it is imperative to understand the factors that drive firms to pursue an offshoring or outsourcing strategies. Roza et al.'s (2011) research on offshoring strategy provides relevant explanations on what motivates firms to pursue a specific sourcing approach. Rangan and Schumacher (2012) extend Roza et al.'s (2011) contribution by investigating the entrepreneurial motives in greater detail. These two sets of theories support our primary framework by adding a perspective on antecedents for sourcing and their relations with firm size.

As discussed in the literature review, the motives for firms to outsource have shifted from cost-driven to entrepreneurial- or innovation-driven (Rangan & Schumacher, 2012; Roza et al., 2011). Such a change has accelerated the outsourcing processes of knowledge-intensive business services (KIBSs). The research by Murray et al. (2009) attempts to investigate and analyze the relationship between firms' global sourcing strategies of KIBSs and their differing business performance. The two-stage strategic fit model proposed by Murray et al. (2009) serves as the fundamental framework for our research, which is rooted in the concept of contingency theory.

Based on theories about firms' sourcing motives and the two-stage strategic fit model, a general framework is generated (see Figure 2.3 below) to structure our research and analyze the four primary cases (Designit, Vertic, Insilico Aps, and Phases) that we have selected. The sourcing drivers by Roza et al. (2011) and entrepreneurial globalization by Rangan et al. (2012) are set as antecedents in the model. Murray et al. (2009) two-stage strategic fit model is used to investigate the business operations. Performance is the outcome of the defined antecedents that drive the operations. As mentioned previously, the contingency theory serves as the underpinning theory of the strategic fit model.

Figure 2.3: Theoretical framework of the thesis
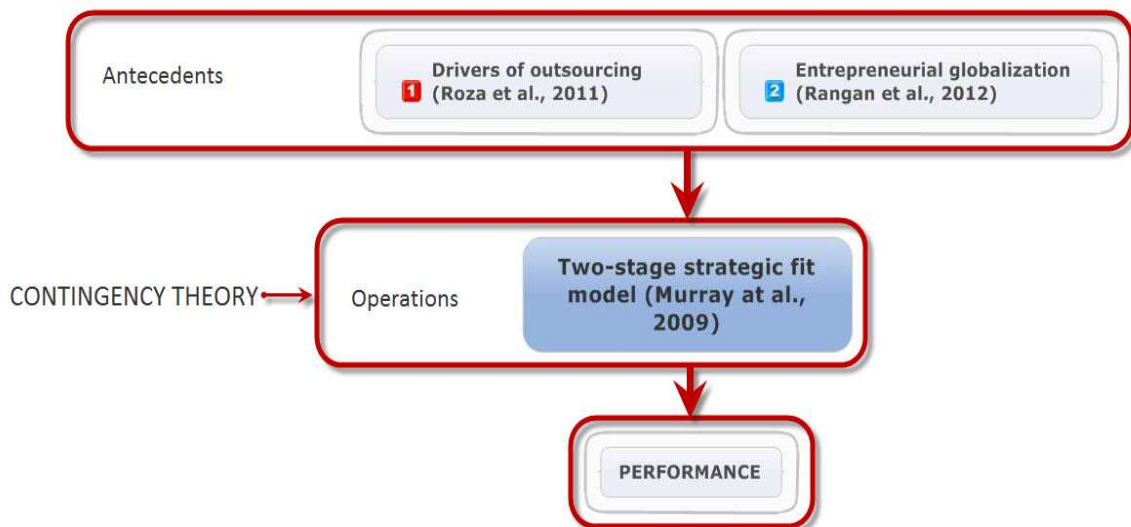
Chapter 3 - Methodology and Data Collection

The following chapter accounts for the methodological considerations of the thesis. We will describe the taken research approach, research design, the use of multiple-case study, case delimitation, data collection, validity and reliability of data sources.

3.1 Research approach

There are two basic research approaches, deductive and inductive approach, both of which enable the researcher to analyze data and reach conclusions. However, these two methods vary in the essence. Inductive research, according to Mintzberg (1979), is composed of two parts: detective work and the creative leap (Mintzberg, 1979). Hereby detective work is understood as data collection and the analysis of the gathered data, as well as the search for commonalities and consistencies (Ibid.). Cavaye (1996) stresses the importance of the analysis whilst collecting data, since it may suggest patterns or constructs which might enrich the research. The creative leap is where the researcher generalizes and extends the data to construct theories (Cavaye, A., L., M., 1996).

Deductive research, on the other hand, is a process of testing theories by validating or disconfirming existing theories (Cavaye, A., L., M., 1996). Generally, the deductive research testing is connected with "positivist paradigm of scientific research and with quantitative research methods in social sciences" (Bitekhtine, 2005; Guba & Lincoln, 1994; Lee, 1989; R. Yin, 1984). Qualitative research approaches are also employed in deductive research, which have contributed to deepen the understanding of social phenomena as well as to explore practical implications of existing theories (Langley, 1999). On the basis of contemporary theoretical viewpoints, the researcher formulates a framework in order to investigate the real life phenomena by employing a deductive research approach (Andersen, 1999). The deductive research is characterized by the use of theories "to phrase propositions which are logical conclusions or predictions derived from the theory" (Cavaye, A., L., M., 1996). The next step is to test these propositions by comparing the "findings from observed reality (the collected data) with the expected outcome (theoretical propositions)" (Ibid.).

Yin (1989a) suggests the construction of specific theoretical propositions originating from a theoretical model in his deductive research methodology. Data collection consists of "gathering information on the individual variables indicated by the model" (R. Yin, 1989a). The thesis takes a deductive research method in order to validate and examine the strategic fit perspective of Murray et al. (2009), which plays the primary role in the theoretical framework. Constructs as testing parameters are derived from Murray et al.'s (2009) strategic fit model. Information and data have been collected focusing on the individual KIBS variable and its relation with case firms' specific sourcing strategy. By comparing the key findings derived from the interview data with the propositions presented in Murray et al.'s (2009) framework, we testify how the two-stage strategic fit model functions in the realistic business environment.

The research focus is to investigate the relation between the independent variables (KIBS attributes) and the dependent variables (firm's sourcing strategies), as well as the consequence of their interfaces on firm performance. The motivations for firms have also been investigated during the research, structured by Roza et al.'s (2011) work on offshoring drivers as well as Rangan and Schumacher's (2012) contribution to entrepreneurial theory, which serve as complementary theories of the fundamental theoretical framework. With the above discussed theoretical perspectives in mind, our study is concentrated on four small and medium-sized case companies (Designit, Vertic, InSilico Aps, and Phases) from the mobile application industry based in Denmark.

3.2 Research design

The two-stage strategic fit model of Murray et al. (2009) serves as the primary theoretical framework for analyzing the relationship between specific KIBS attributes and companies' sourcing strategies. Further, Roza et al.'s (2011) contribution regarding offshoring drivers will be used as a supportive theory, which is complemented by Rangan and Schumacher's (2012) concept of entrepreneurial globalization.

In our research, we gather information of each case company on the individual KIBS attribute and its relationship with a sourcing strategy. In the analysis, we will compare the findings derived from the collected qualitative data with Murray et al.'s (2009) theoretical propositions. We have been

impressed by the theoretical implications of Murray et al.'s (2009) contribution to the field of global sourcing research. It is of great importance for us to investigate if the two-stage strategic fit model applies to real-life firms from a knowledge-intensive industry.

3.3 Case study approach

In order to test the fundamental theoretical framework that has been elaborated in the above chapter, a case study research method is chosen to evaluate the impacts of KIBS attributes on firms' sourcing modes and thereby the KIBS performance. Saunders et al. (2007) have defined a case study as a "strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence" (Saunders, Lewis, & and Thornhill, 2007). Yin (2003) adds that case studies are particularly useful when researchers want to explore contextual conditions. Data collection methods such as archives, interviews, questionnaires, and observations are used to collect quantitative (e.g.: numbers) and qualitative (e.g.: words) data or both (Eisenhardt, 1989).

One strength of theory building from cases is its likelihood of more in-depth information and the generation of novel theory (Cameron, K. & Quinn, R., 1988). An additional advantage is that the developing theory can be tested with measurable constructs and hypotheses that can be validated (Eisenhardt, 1989). Moreover, "the resultant theory is likely to be empirically valid "(Ibid.). Flyvberg summarizes the role played by case studies in human learning as follows: firstly, "the case study produces the type of context-dependent knowledge that research on learning shows to be necessary to allow people to develop from rule-based beginners to virtuoso experts"; another point is that "there appears to exist only context-dependent knowledge, which, thus, presently rules out the possibility of epistemic theoretical construction" in the human affairs research field (Flyvbejerg, 2004).

However, certain key strengths of case studies can lead to weakness in several occasions. For example, Eisenhardt (1989) suggests that the intensive use of empirical evidence might result in overly complex theory and case study research may produce narrow theory (Eisenhardt, 1989). In

case study theory building, the specifics of the collected data produce the generalizations of the theory, which is a bottom up approach (Ibid.)(Flyvbejerg, 2004). To overcome the potential weaknesses of case study research and in the mean time argue against some conventional misunderstandings on the case study, Flyvsbjerg (2004) stresses the strategic choice of the case, since it may greatly increase the generalizability of an entire case study (Flyvbejerg, 2004).

Generally, there are two types of case studies, namely single-case studies and multiple-case studies (R. Yin, 1984). Regarding the fundamental impacts on data collection and data processing, it is important to differentiate between both designs in order to make the decision (Ibid.). Reasons for choosing either single-case study or multi-case study will be discussed in the following section and thereby lead to the choice of case study method in the thesis.

3.3.1 Single-case study

Voss et al. (2002) remark that the lower the number of case studies, the higher possibility to gain in-depth knowledge for a given set of resources. Longitudinal research commonly uses single case studies. A single case may sometimes allow the researcher to study several contexts within one case (Mukherjee, Mitchell, & Talbot, 2000). According to Yin (1984), the purpose for using a single-case study is to find a specific case which characterizes an already existing theory. Yin continues that "the theory has specified a clear set of propositions as well as circumstances within which the propositions are believed to be true". Consequently, the single case study can be used to "confirm, challenge, or extend the theory" (R. Yin, 1984).

A potential weakness of the single-case study might be that a case develops into something different than the initial case. Therefore special attention needs to be paid when exploring and selecting potential cases in order to reduce the risk of misrepresentation (R. Yin, 1984). Another constraint is the limited "generalizability of the conclusions, models, or theory developed from one case study" (Voss, Tsikriktsis, & Frohlich, 2002). Further limitations are the potential of exaggerating easily accessible data and the risk of "misjudging of a single event" (Voss et al., 2002). One possible solution is to compare data and events across cases (Ibid.).

3.3.2 Multiple-case studies

The other type of case design is multiple-case study, in which the same study may consist of more than one case. The multiple-case design enables the researcher to "explore the phenomena under study through the use of a replication strategy" (R. K. Yin, 2003). According to Yin (1994), replication strategy is like "conducting a number of separate experiments on related topics" (Zach, 2006). The replication strategy consists of two stages, namely, the *literal replication* stage and the *theoretical replication* stage. During the literal replication stage, cases are selected to get similar results. In the theoretical replication stage, additional cases are selected in order to investigate and validate the patterns identified in the cases of the first stage (R. K. Yin, 1994).

One way to improve the validity of the multiple-case study is to ensure that the multiple cases of the research have been selected and analyzed under similar conditions. Otherwise there is a risk of the study not investigating the same phenomena (R. Yin, 1984).

3.3.3 The approach of the thesis

Based on the above discussions, the advantage of multiple-case study over single-case study is that multiple cases can both increase external validity and prevent observer bias, despite the possibility of reduced study depth (Voss et al., 2002).

Since the objective of the thesis is to investigate the potential strategic fit between KIBS attributes and firms' sourcing strategies within the mobile application business sector and how it affects the KIBS performance, it is crucial to understand the various dimensions of the external environment. Due to the dynamic context of the chosen industry and the complex characteristics of the respective case companies, we decide to implement the multiple-case study research method. This method enables us to extensively investigate certain patterns and compares various operations and strategies of each case company. The multiple-case design allows cross-case comparison within the boundaries of our primary framework, which is instrumental for drawing conclusions in the final chapter of the thesis.

According to Yin (1984), "the typical criteria regarding sample size are irrelevant", this implies that the design of the multiple-case study does not demand a certain sample size (R. Yin, 1984). We have chosen to investigate four case companies from the Danish mobile application industry. Each firm was selected based on a specific set of criteria (i.e.: industry affiliation, enterprise size, firm maturity, location, etc.). Regarding the conventional wisdom about case study that "one cannot generalize on the basis of individual cases", Flyvberg (2004) suggests that the strategic case selection can greatly enhance the generalizability of the case study approach (Flyvbejerg, 2004). Hence the case selection criteria are of crucial importance in the primary stage of case study.

Inspired by Murray et al.'s (2011) research on knowledge-intensive service activities, we attempt to investigate how global sourcing takes place in a highly volatile environment with a high pace of technology development. The characteristics of the mobile application industry therefore make it an appropriate target industry. Under this dynamic and rapidly developing environment, firms are compelled to equip themselves with strategic resources and consistently adapt to emerging changes. Therefore, the sourcing strategies taken by them are of great importance to explore. Having identified which business sector to focus on, we decide to concentrate on the mobile application industry in Denmark, which has attained a certain degree of maturity and thereby is indicative of this market.

In consideration of the firm size as one criterion, we initially discussed the possibility of involving large corporations in the dataset, but after having conducted a brief market research, we noticed that large Danish mobile application firms tend to outsource substantial parts of their value chains to smaller firms in the development process. Thus small and medium-sized enterprises (SMEs) have become the target group.

The next section provides a more detailed discussion on the case selection criteria and a brief introduction on the selected firms. Facing the constraints in terms of time and resources, it is impossible and realistic for us to accomplish a larger sample size. However, the four firms that we have chosen are able to present a selection of cases operating in a high-tech industry and are demonstrative of how SMEs source their KIBSs to other firms.

3.4 Case delimitation

3.4.1 Case selection based on criteria

In order to establish a general set up to select the case firms, a collection of factors such as enterprise size, the maturity level of the firm, firm location, availability, are taken into consideration to filter and select potential case companies.

a. Company size

Initially, we had a long discussion on what company size to focus on in our research. In time we realized that most of the mobile application development firms were either small or medium-sized enterprises (SMEs) in the Danish market, which we had decided to investigate.

With the restriction on company size, we found that Roza et al.'s (2011) article on offshoring strategy covers small and medium-sized enterprises to a large extent. Further, it provides us with great insights into the advantageous characteristics that SMEs tend to have, which are "little bureaucracy, entrepreneurial management, rapid decision-making, risk taking, organic style, fast reaction to changing market requirements, the potential to dominate the narrow market niches"(Roza et al., 2011). These entrepreneurial attributes of SMEs are closely linked to Rangan and Schumacher's (2012) theory on entrepreneurial globalization.

At the same time, we were also recommended to talk to Christine von Seelen Schou, an industrial PhD fellow, who is an expert in the software side of the telecommunication industry and works for Telenor Customer Insight. Our interview with her turned out to be very inspiring and she informed us that the large telecommunication providers tend to outsource the development of mobile applications to smaller firms, which confirmed our initial thought to focus on small and medium-sized firms in the master thesis.

The European Commission for Enterprise and Industry (2003) defines small enterprises as "enterprises which employ fewer than 50 persons and whose annual turnover or annual balance sheet total does not exceed 10 million Euro". Micro enterprises on the other hand are

characterized as firms "which employ fewer than 10 persons and whose annual turnover or annual balance sheet total does not exceed 2 million Euro" (European Commission, 2003). A company is a medium-sized firm when it employs fewer than 250 persons and whose annual turnover does not exceed 50 million Euro or whose annual balance sheet total does not surpass 43 million Euro. Figure 3.1 provides a graphic overview of three sub-groups of SMEs (Ibid.).

Figure 3.1: The New Thresholds of SME´s

Enterprise category	Headcount: Annual Work Unit (AWU)	Annual turnover	or	Annual balance sheet total
Medium-sized	< 250	≤ €50 million (in 1996 € 40 million)	or	≤ €43 million (in 1996 € 27 million)
Small	< 50	≤ €10 million (in 1996 € 7 million)	or	≤ €10 million (in 1996 €5 million)
Micro	< 10	≤ €2 million (previously not defined)	or	≤ €2 million (previously not defined)

Source: (European Commission, 2003)

We base our company size criterion on the headcount of the firms since the financial data of some firms is not accessible. As InSilico Aps has currently 8 employees and thereby falls under the category of micro enterprises. Phases has reached the small category with 26 employees. The largest case firm in this paper, Designit, with the employee number just below 250, still remains in

the medium-sized section. The last case company, Vertic, currently employs 60 people in three locations (i.e.: Denmark, U.S., Singapore), which falls into the medium-sized category and its firm size fits well in between Phases and Designit.

b. Firm maturity

In order to obtain a broader perspective on the industry, we start seeking out enterprises at different stages of maturity. There is still an ongoing academic debate on the definitions of the various stages of firm growth and thereby maturity. We decide to employ Xiao (2011)'s definition on the three stages of business growth. Xiao (2011) classifies the maturity of the company into three stages, namely, "start-up", "early stage", and "later stage" (Xiao, 2011). The "start-up" phase is outlined by companies having "registered and their products/services being developed and initial potential customers are being validated" (Ibid.).

In the "early stage", enterprises are providing services and making products for customers and they are usually unprofitable. In some cases, "early stage" firms can be profitable. When firms enter the "later stage", they "normally have significant revenue growth and have generated profits for several years" (Ibid.).

Phases was selected as a "start-up" company since it was recently established (in 2011). Although still young, Phases has already built up an extensive track record of successful business projects (Phases, 2012). InSilico, on the other hand, is considered to be at "early stage" because they have been operating since 2006. During the interview, we were told that Insilico provides services for a broad range of clients and are profitable in the business (T. InSilico). Designit that was founded in 1991 represents a "later stage" corporate due to many years of experience and its success as Europe's leading strategic design consultancy (Designit, 2012). Vertic was established in 2002 and has expanded its business operations from Denmark to the U.S. and Singapore. Having gained plentiful experience in the fields of heath-care, e-learning solutions, Vertic has been able to work with world renowned brands, such as GlaxoSmithKline, SAP, Microsoft, Novo Nordisk (Vertic, 2011). With a ten-year history operating in the knowledge-intensive and highly competitive

industry, Vertic has well established itself in its niche market and created stable and sustainable business revenues, which serves as a good example for firms that have entered the "later stage".

c. Firm location

We selected firm location as one criterion and the research focus is on the Danish mobile application industry. Four primary case companies (Designit, InSilico, Phases and Vertic) that we have conducted face-to-face interviews with, have headquarter offices based in Copenhagen, Denmark, which provides us with accessible respondents and makes the data collection process more convenient.

With the companies being unique in their operations, they differ substantially in their sourcing strategies that are reflected in their subsidiary locations and internal/external vendor choices. InSilico has chosen to mainly use internal resources and it run its operations primarily from Copenhagen. Phases, on the other hand, has located its fully-owned subsidiary in India and utilizes an offshoring strategy to a large extent. The reason for that is the good relationship with an Indian manager who assisted to set up the subsidiary in India (T. Phases). The third case company Designit is a leading international design and strategy consultancy firm with various subsidiaries in many countries. The fourth case company, Vertic, located it's headquarter in Denmark and extends its operations overseas in the U.S. and Singapore. Table 3.1 provides an overview of basic facts of the companies we have selected.

Table 3.1: Basic information about the primary case companies

Firm name	Designit	Vertic	Phases	InSilico
Company size	medium	medium	small	micro
Firm maturity	later stage	later stage	start-up	early stage
Headquarter location	Denmark	Denmark	Denmark	Denmark

3.4.2 Case selection based on availability

In the initial stage, we have pursued multiple methods for selecting and approaching potential case companies. We first researched on the internet by utilizing search engines such as Google.dk, in order to identify possible firms on the basis of their profiles and obtain contact information. At the same time, we also received personal recommendations from our circle of friends on what firms should fit the target group and we were afterwards assisted in establishing contact with various company representatives (i.e.: Designit and Vertic). The following companies were personally suggested to us: Capgemini, Designit, Kuadriga, Mobilityarchitects, Phases, and Vertic. Eventually, Designit, Phases, and Vertic agreed to collaborate with us and thereby became three of the primary cases. The representative of Capgemini did not reply to the interview enquiry, but we were able to interview a consultant from Capgemini, who is a friend of us.

The result of the internet research was that we identified nine suitable firms as listed below:
Addoapp, Ingrama, InSilico Aps, Lector, Nodes, Novicell, Raal & Co, Rassvet, Valuesoft. Based on this firm list, we initiated contact via email and received positive feedback from two firms (Rassvet and InSilico Aps). Rassvet agreed to have a brief telephone interview which turned out to be helpful, but the company as such was not suitable for our research focus. The CEO of InSilico Aps, Anders Cervera, invited us to a face-to-face interview at their office in Copenhagen, which made InSilico the fourth primary case company.

3.4.3 Basics of case companies

a. Designit

Founded in 1991 in Aarhus, Denmark, Designit has become a leading firm specializing in strategic designing in the global market. By spreading its operations in ten countries, namely, Denmark, Sweden, Spain, Norway, China, Brazil, United Kingdom, Germany, and Israel, Designit has approximately 250 employees with different nationalities at the moment (Designit, 2012).

With the aim of creating "strong and healthy business value through design", Designit provides its client firms with services, products, and experiences (Designit, 2012). Through frequent interaction

and intimate collaboration with its customers, Designit has been able to leverage its clients' resources and utilize their business insights as "a key value driver" (Ibid.). Throughout the 21 years since its foundation, Designit has helped a great many corporations, including various world-known brands, to build a large mass of business value (T. Designit).

Rasmus Møller Sørensen (Design Manager and Senior Consultant, Designit) talked about a so-called "gold rush" trend that is presently occurring and refers to a strong enthusiasm in the mobile application industry that is fueled by the dynamic development and great potential for success. Designit, being faced by this "gold rush" trend, has undertaken a "mobile strategy" to seize new business opportunities within the market (T. Designit). By cooperating with and engaging its client companies, Designit has assisted a series of world leading companies (i.e.: Vodaphone, Vestas, Novo Nordisk, etc.) to relocate and brand themselves in the mobile world, covering business sectors such as healthcare, telecommunications, and green energy. The sourcing strategies taken by Designit in terms of mobile application development are relatively conventional.

In consideration of quality and cost factors, Designit pursues a nearshore/onshore outsourcing strategy in the mobile application development process (T. Designit). In order to maintain its core competencies in-house, the most crucial conceptual part for developing a mobile application is done internally, whereas standardized work such as coding or programming is outsourced to some Danish vendor firms or Eastern European partners (e.g.: Ukraine). Rasmus Møller Sørensen remarked that Designit has achieved considerable benefits in terms of costs. In addition, innovative inputs and inspirations have also been gained through the collaboration with several Danish vendors (T. Designit).

b. InSilico Aps
InSilico Aps is a Danish consulting business that has specialized in developing customized mobile applications for iOS, Android, Symbian and Windows Mobile. Hereby, their business focus is on the two fastest growing mobile platforms: Android and iPhone.

The company considers itself passionate about mobile app development and has the objective to provide its customers with solutions that range from the simplest to the most advanced tasks (InSilico, 2012).

The company was started in 2006 and at that time mainly doing standard software development. Apple starting the app store in 2008, which urged InSilico to pursue mobile application development from 2009. Back then the team lived at IT University, and was considered to be a start-up (T. InSilico). In recent years, InSilico has developed into, what Anders Cervera (CEO, InSilico) calls, one of the largest Danish mobile application development firms that regards mobile development as the primary focus (Ibid.).

A growing interest of companies to utilize mobile applications has driven InSilico to concentrate on enterprise solutions. InSilico has built up a substantial reference list with clients like: Audi, Danfoss, Nykredit, British American Tobacco and Pandora (InSilico, 2012).

By outsourcing parts of the app development to a Pakistani team for a period of time, InSilico was able to reduce the developmental costs, but at the same time noticed quality issues and a slowed down time-to-market speed. Eventually the company decided to decrease outsourcing activities and focus on using local resources for upcoming projects (T. InSilico).

c. Phases

Phases is a young start-up from Denmark, which was founded in the middle of 2011. The company offers a broad range of web-related solutions and has a lot of experience in developing and running content management systems (CMS). At present, the firm is concentrating on website development, implementation in CMS as well as integrations (T. Phases). Mobile app development is one of the core businesses and has gained increasing importance in recent months. The company owns a subsidiary in India, which is also where the majority of its employees are based.

Phases' mission statement is: "by developing and streamlining work processes and supporting them with modern tools, we […] help organizations increase growth, reduce cost and improve communication" (Phases, 2012).

On the webpage Phases introduces itself by saying "we create value for our customers by showing them how to streamline and optimize the way they work, using innovative software and modern communications tools" (Phases, 2012).

The objective of Phases is to develop software solutions for its clients that offer the highest possible level of quality, design, operability and usability. This goal can be achieved through "efficient communication, co-operation and knowledge sharing" (Phases, 2012). Since Phases is working with multiple different technologies, the company is able to integrate them into each other (T. Phases).

On the other hand, Phases promotes business communication tools like the Podio platform, which is an online work platform that can be customized to various customer needs. Phases is currently integrating Podio into their clients' economic systems (T. Phases).

Interestingly, Phases has set up a specific work process to accommodate various needs of its clients. The first step is to run "in-depth analysis of the individual organization". Secondly, picking the "tools that are best suited to reach an optimal solution" (Phases, 2012). Additionally, Phases offers extensive training to the client firms' to fully implement and use each tool (Ibid.).

With Phases offering a broad range of solutions, the company gained a lot of experience in outsourcing through various large projects that were realized in collaboration with external vendors in India.

Phases has built up a strong customer base with companies and well known organizations like BWConsult & Co, Wunderman, Urban Elements and Copenhagen Business School (Phases, 2012).

d. Vertic

Vertic calls itself a "Global Interactive Agency" with a passion for "creating 360 multi-channel solutions that generate demand for our client's brand" (Vertic, 2011). With a strong focus on digital advertising and its core competencies of "strategy, story-telling, creativity, interaction-design, and

in-depth understanding of content creation", Vertic has become a competitive player in its niche markets (Ibid.).

The company was founded in 2002 and at present operates in offices in Copenhagen, New York and Singapore (Vertic, 2011). Vertic´s primary goal is to create tangible business results for the clients (Ibid.). This goal is derived from the firm's mission to "help industry leaders apply interactive solutions to build their brands and create great customer experiences across the entire digital channel" (Ibid.).

Vertic currently has approximately 60 employees worldwide. The Copenhagen office employs 40, whereas the office in New York has a staff number of 20. According to Henrik Ebbesen (Head of Development and Partner, Vertic), the company takes pride in keeping as much activities in-house as possible, which has a strong effect on the company's sourcing strategy. Most business areas are directly represented and staffed within the enterprise (i.e.: 12 Developers inside the company are representing the backbone of programming operations).

Mikkel Arnoldi Pedersen (Healthcare Director, Vertic) describes the firm as a "full-service" provider, that "works in many different industries" and that strives to have all the competencies in-house for the solutions they want to offer (Vertic, 2012). This broad approach is a key strength, since it allows Vertic to bring knowledge, inspiration and various solutions from one industry into another (Ibid.). A lot of experiences in developing products for the healthcare sector, e-learning solutions and cross-platform integration have been driving forces for Vertic in recent years (Ibid.)

By inviting opportunities for creativity and out-of-box solutions, Vertic has been able to win contracts with renowned firms such as GlaxoSmithKline, SAP, Microsoft, Novo Nordisk and more (Vertic, 2011).

3.5 Data Collection

In research, various methods are taken in order to create two kinds of data, namely, qualitative data and quantitative data. "Natural language data", "symbols, settings and observations in a context", and "photographs and other visual metaphors" consist of the main forms of qualitative data (Easterby-Smith, Thorpe, & Jackson, 2008). Qualitative data can be generated through approaches such as in-depth interviews, observation with or without participation, and other "interactive methods". The main aim of the qualitative research is to investigate the viewpoints, perceptions, and understandings of individuals or groups on certain phenomena (Ibid.). Crucial information that reveals the understanding and reflection of a specific issue links to the interviewee's worldview could be gained through qualitative interviews (Kvale, 1996).

Quantitative data, on the other hand, are mainly obtained through surveys or questionnaires with a structured design (Easterby-Smith et al., 2008). By usually distributing surveys with well-structured questions and predefined response choices, the quantitative research method aims to collect data about "the opinions and behaviour of large numbers of people" (Ibid.). The quantitative research enables the researcher to define the needed information before the survey is conducted. The ability to design and manage the survey to the right direction is the key success factor for gathering quantitative data, whereas communication and interpretation capabilities are the most essential factors in the qualitative study (Hair, Bush, & Ortinau, 2003).

The quantitative research is determined by the use of standardized measures to evaluate a large dataset which is "fit into a limited number of predetermined response categories" (Patton, 2002). Qualitative research, on the other hand, is designed to study various issues in greater detail and depth. Another strength of qualitative methods is that they are not limited by predetermined categories, which leads to a more open approach and "increases depth of understanding of the cases and situations studied but reduces generalizability" (Ibid.). The objective of qualitative analysis is to reduce a large amount of data to a small number of central themes.

According to Patton (2002), a qualitative study needs to provide "a framework within which people can respond in a way that represents accurately and thoroughly their points of view" on a specific research topic. Easterby-Smith et al. (2008) suggest that qualitative researchers "may need to be skilled at conducting 'in-depth' interviews, making field notes, coding and interpreting transcripts, and so on" (Easterby-Smith et al., 2008).

We use a common qualitative sampling strategy that is characterized by "studying a relatively small number of special cases that are successful at something and therefore a good source of lessons learned" (Patton, 2002). With us focusing on Murray et al.'s (2009) two-stage strategic fit model as a primary research framework, we decided to gear our interview questions toward the previously described research questions.

3.6 Primary and secondary data

Primary data is gathered directly by researchers themselves. Secondary data, on the other hand, is when researchers use already collected data from other scholars (Easterby-Smith et al., 2008). Both approaches have different advantages and disadvantages. The strength of collecting primary quantitative data is that the researcher has control over the research structure and the data obtained from respondents (Ibid.). With that in mind, the disadvantage is that the accumulation of primary quantitative data is time- and resource consuming, compared to the ease of using already existing secondary data. One issue with secondary data is that the data quality is uncertain (Ibid.).

3.6.1 Primary data

In the thesis, primary data has been obtained through face-to-face interviews with key personnel in the four case companies. In total, five interviews were conducted with top executives or managers at strategic and operational levels. A full account of the interviews is stored in form of interview transcripts on the separate CD-ROM that is attached to each copy of the master thesis. Table 3.2 (see next page) provides an overview of the interviewees involved in this study, including information about the locations and time of each interview.

Table 3.2: Overview and schedule of firm interviews

Firm	Representative, location, and time of interviews
Phases (face-to-face interview)	Daniel Horn (Founder), CBS, 29th of March 2012 Daniel Horn (Founder), Nyrnberggade 31, 2300 KBH S, 18th of May 2012
Designit (face-to-face interview)	Rasmus Møller Sørensen (Design Manager and Senior Consultant), Bygmestervej 552400 Copenhagen NV, 3rd of May 2012
InSilico Aps (face-to-face interview)	Anders Cervera (CEO), Rosenvængets Allé 11, st. DK-2100 Copenhagen, 16th of May
Vertic (face-to-face interview)	Mikkel Arnoldi Pedersen (Healthcare Director), Henrik Ebbesen (Head of Development, Partner), Ryesgade 3A, 2.tv. 2200 Copenhagen N, 20th of August 2012

The average duration of each interview was approximately 42 minutes, ranging from 40 minutes 51 seconds to 47 minutes 44 seconds. All four primary case company interviews have been tape recorded and transcribed, with the permission of the interviewees. We decided to interview Phases more than once because we were lacking accuracy in the first set of interview questions. The interviews were based on the research questions and the adjourning primary theoretical framework.

All the interviews we have conducted are with firm representatives, which enable us to gain a generalized outlook on the strategic and managerial level. We are aware that there is the potential for an interviewee bias to occur, as the representatives (mainly management level in our research) from the respective companies tend to have a relatively optimistic and positive perspective on the industry that they work in and other related issues. One method taken by us to complement the dataset is to incorporate the industry overview and position the study in the external environment, by collecting secondary data from various sources.

Further, there is also a potential risk of being confronted by a bias on the interviewer side. The interviewer itself can potentially influence the answers from the interviewee. Easterby-Smith et al. (2008) address that there "is no one objective view" when conducting in-depth interviews (Easterby-Smith et al., 2008). The predicament is that the interviewers might possibly "impose their own reference frame on the interviewees" (Ibid.). This issue might take place during the interview process as well as the afterwards interpretation of the interviewed data.

Open questions might avoid the bias, but at the same time restrict the specificity and focus of the question. Easterby-Smith et al. (2010) also suggest a number of "probes" used as "intervention techniques" during the interview, in order to improve or shape the answers from interviewees (Ibid.). In this thesis, we decided to ask open questions to limit the occurrence of an interviewer bias from our side and attempt to be as neutral as possible in the interpretation of the gathered data.

3.6.2 Operationalization of theoretical constructs

In the literature review, several theoretical constructs (i.e.: KIBS attributes, different sourcing modes) that constitute the fundamental framework of this research project have been introduced and elaborated. To address the research questions, a collection of questions are asked during the interviews with case company representatives, with reference to the theoretical framework and relevant theories. Each case firm has been investigated under the same structure.

The interview respondents from each case company share a set of similar characteristics. All of the five interviewed respondents are at the managerial level of the corporation and have accumulated a certain amount of working experience and understanding in the mobile application business sector. Some of them have technological backgrounds, whereas others hold a business degree. In general, all of these five respondents are familiar with basic sourcing concepts and specific theoretical terms (i.e.: global sourcing strategies, the global value chain, offshoring and outsourcing concepts). To ensure a higher degree of validity and accuracy of the gathered information, certain theoretical constructs have been interpreted with respect to the interviewee's way of using language. For instance, with regards to one of the KIBS attribute "variability", we

attempt to explain this variable by linking it to how customized a product or solution is. When the product is highly customized and being different from time to time, then a high level of variability can be inferred. Concerning each construct, a main question has been formulated with a series of follow-up questions, in order to gain as much in-depth information as possible. Several examples have been brought in when necessary, in order to help the interviewees better understand the questions. Table 3.3 provides a number of examples on how the theoretical terms have been translated and thereby formulated into questions for the interview.

Table 3.3: Operationalization of theoretical constructs

Theoretical concept	Operationalized question
Outsourcing motivations	• What are the main reasons for X (X=company name) to outsource? • What attracts you (company) most to outsource?
Sourcing processes **(Sourcing strategies)**	• What are the activities in the mobile app development that you have outsourced? • How do you decide what activities to outsource? • (You have outsourced to some vendor firms outside Denmark), is it possible for you to mention these locations? • Given the resource limitations at X (X=company name), how do you benefit / achieve competitive advantages through outsourcing? • What are the greatest challenges when working with your vendors?
Variability	• How customized are your solutions?
Inseparability	• How much can your product development be divided across locations and how flexible is that time wise? (e.g. call center)
Tacitness	• What has been your experience in dealing with tacit knowledge and activities?
Innovativeness	• How satisfied are you with the current level of innovation? • What methods are you using in order to measure innovation?
Dynamic capabilities **(Absorptive capability and integration capability)**	• When your vendors delivered a specific task, what happens? How has X (X=company name) been able to acquire and absorb new technologies? Do you have standard procedures? • Do you have certain strategies to use and integrate newly acquired knowledge? • How difficult is it to integrate and use the vendors' inputs? Have you experienced any difficulties when managing the vendors' solutions?

3.6.3 Secondary Data

Secondary data in this thesis mainly comes from relevant literature, the companies' web pages and several industrial reports accessible online. By using acknowledged frameworks in combination

with specific case information, we minimize the risk of drawing conclusions that are neither reliable nor valid (Saunders et al., 2007). The conjunction of primary and secondary data greatly compensates and enriches the information we could obtain. Through applying and testing existing theories on our multiple cases, we are able to validate the insights and contribute to the academic discussion on Murray et al. (2009) two-stage strategic fit model.

With the data in hand, we are able to examine whether there exists a strategic fit between a KIBS attribute and a specific sourcing strategy, as it is proposed in the first stage of the strategic model. One limitation of our dataset is that the information concerning the second stage of the framework is rather limited and thereby not sufficient for in-depth analysis and to elaborate on firms' dynamic capabilities. Further inputs and a higher volume of in-depth interviews are required in order to solve this issue.

Chapter 4 - Analysis

This section presents detailed information that is derived from the interviewed data, under the structure of the fundamental theoretical framework. During the interviews, we asked the interviewees a number of open-ended questions that are relevant to the reasons for them to offshore and outsource, the locations where they choose to offshore, which part of business activities in their value chains have been offshored, the characteristics of these sourced activities, their sourcing strategies of knowledge-intensive business activities, and the outcome of the sourcing decisions made by firms, etc. Each aspect was covered and abundant valuable data have been gathered.

4.1 Test process

The test process consists of three parts. Firstly, information that is relevant to firms' sourcing drivers has been summarized and interpreted, framed by Roza et al.'s (2011) offshoring motivation theory. The second section extends the research on offshoring motives by investigating case firms' characteristics and sourcing strategies, inspired by the entrepreneurial globalization concept of Rangan and Schumacher (2012). In the last part, the researched enterprises' KIBS activities and their respective sourcing choices have been analyzed case by case, with respect to the primary theoretical framework – the two-stage strategic fit model.

According to Murray et al. (2009), "firms that align the type of sourcing strategy with a specific sourcing attribute (i.e., a KIBS attribute) should perform significantly better than those that do not achieve the requisite match" (N. Venkatraman V., 2004). Our analysis will evolve around this concept. The next step is a more elaborate perspective on the relationship between four independent variables – KIBS attributes (i.e.: Variability, Tacitness, Inseparability, Innovativeness) and the dependent variables – firms' specific sourcing strategies, and how such an interaction impacts firms' performance.

Murray et al. (2009) have formulated four propositions on the strategic fit between KIBS attributes and enterprises' sourcing strategies in the first stage, which are elaborated in the

literature review. In the third section, we will testify these assumptions to investigate how this model can be utilized in real life settings. The test will be conducted with the data acquired from the four primary case companies.

In light of Murray et al. (2009), these four propositions will be instrumented as test parameters for our study. Each case company with its distinct set of KIBS attributes and their implemented sourcing strategy will be tested in consideration of their current level of business performance. Although business performance is a crucial variable in our study, certain limitations need to be acknowledged. The four primary case companies were not able to provide us with specific financial data that could help us to verify their performance level of the mobile application business. We only have a general and abstract perspective of the case corporations' mobile application business performance, which is obtained from the interviewed company representatives.

4.2 Data presentation

4.2.1 Offshoring drivers

Roza et al. (2011) suggest that firms are motivated to offshore based on cost, resource, and entrepreneurial factors (Roza et al., 2011). Empirical evidence illustrate that these three groups of offshoring drivers are also influenced by firm size (Ibid.). Following Roza et al.'s (2011) classification on offshoring drivers, we interviewed four Danish mobile application development firms on their respective reasons to offshore, ranging from micro- to medium-sized companies.

In view of the driven factors of offshoring, Designit views cost as the top reason for it to offshore, as Rasmus Møller Sørensen (Design Manager and Senior Consultant, Designit) mentioned that "a developer in the Ukraine costs […] one tenth or something like that of the cost of one of our own developers […] so cost basically" (T. Designit). Mr. Sørensen also figured out that external knowledge could be obtained through outsourcing to several Danish vendor firms, which indicates that Designit have achieved resource benefits as well from outsourcing (Designit Quote 6). Due to a combination of factors (e.g.: quality, client expectations,

communication barriers), Designit favors the onshore outsourcing strategy (outsourcing to Danish partners) and the nearshore outsourcing approach, whereas shows less interest in offshoring to further locations such as East Asia.

InSilico considers cost drivers as the most important motives. Anders Cervera (CEO, InSilico Aps) supported this by remarking "the reason why we started back then was that primarily because of the price. We could hire, so to speak, a couple of guys to third or fourth of the original salary level comparing to here. So we could save, we could of course save a lot of money" (T. InSilico). He continued by saying that "companies are using outsourcing as a price parameter. We use outsourcing so we can get much cheaper" (Ibid.). In addition, InSilico has also profited from offshoring in terms of resources. Small firms like InSilico normally face constrained resources, as Mr. Cervera noted, "it's difficult to find local resources here doing exactly mobile app development" (Ibid.). Therefore InSilico has to search for complimentary resources by pursuing offshoring strategies. In sum, the offshoring drivers of InSilico are characterized as cost and resource.

Phases has gained considerable advantages by using offshoring as a cost, resource, and entrepreneurial strategy. By locating its subsidiary in India, Phases has been able to employ a number of skilled Indian technical staff at lower cost, in comparison with the salary level in Denmark. Daniel Horn (CEO and founder, Phases) has also observed the resource advantages obtained through offshoring. With Phases providing various kinds of services to its client firms, it is impossible for a start-up firm to have that much technical expertise to meet all consumer needs. As a result, Phases has to cooperate with external suppliers to gain accesses to resources in need (Phases quote 2). The third category of offshoring drivers, entrepreneurial drivers, well explains Phases' offshoring strategies as well. With a relatively limited resource base, Phases moves beyond resources to set up new resource combinations. By applying offshoring strategies, Phases are able to overcome certain resource constraints and attain further growth.

Vertic has relatively limited experience dealing with outsourcing, as the company takes "pride in having most competencies in house" (Vertic, 2012). Differing from the other three case companies, the interviewees from Vertic did not regard cost factors as the main reasons for them to outsource. Nonetheless, Henrik Ebbesen (Head of Development and Partner, Vertic) has identified the great resource potential underneath the offshoring process. As he noted, "the advantage is that sometimes you have a hard time imagining or planning how we should be able to do this certain task with in-house resources. So that of course gives flexibility […]" (Ibid.). Though Vertic has not accumulated much experience in terms of employing offshoring as resource strategy, Mr. Ebbesen believe that once a long-term partnership with external vendor firms is established, it would eventually compensate the internal resource limitations and creates a high level of flexibility (Ibid.).

4.2.2 Entrepreneurial globalization

Rangan and Schumacher's (2012) research on entrepreneurial globalization contributes to the extant global sourcing literature. As stated by Rangan and Schumacher (2012), the substantial changes that take place in the global economy call for an entrepreneurial approach. Firms need to rethink their businesses and reconfigure their value chains for internationalization and long-standing business growth (Rangan & Schumacher, 2012).

Our research on these four case companies indicates that the implementation of entrepreneurial strategy is more evident in Phases case, whereas Designit and Vertic are applying relatively traditional approaches to globalize. InSilico as a micro-sized firm at the moment is conducting the majority of business activities in the Danish mobile application market, therefore it is less globalized. Hence the following brief analysis will concentrate on Phases, Designit, and Vertic.

In the literature review, the traditional vs. entrepreneurial globalization approaches have been elaborated and compared based on five aspects. In consideration of these five factors, a

comparison is made between Phases with more apparent entrepreneurial characteristics and Designit as well as Vertic, which are following a conventional path.

Phases is the youngest firm out of all the four primary case companies. Established in 2011, Phases has a relatively short history and limited experience in the mobile application industry. Daniel Horn (CEO and founder, Phases) is an open-minded businessman and his philosophy is that "we believe in not having secrets" (T. Phases). According to Daniel, the conventional perspective of closed sourcing is not applicable in today's business environment; instead, firms should openly source from their partners through collaboration (Ibid.). In order to motivate its Indian employees to think independently and become more creative, employees of Phases subsidiary office in India have been given full responsibility for each project; quotes from Indian staff are selected and posted on the office walls (Phases Quotes 11, 12). The gathered information through observation (during the visit to Phases headquarter office in Copenhagen, Denmark) and interviews indicate a less-bureaucratic working environment at Phases.

Designit and Vertic, which are representative companies from the medium-sized firm category, are more established and experienced than Phases. Therefore they are capable of handling most of their business services with internal resources. During the interview, Rasmus Møller Sørensen (Design Manager and Senior Consultant, Designit) showed less interest in offshore outsourcing and he remarked that Designit follows a conventional way to extend business operations (T. Designit). Vertic is at a stage of reconsidering its sourcing strategy, at the moment it still pursues a traditional globalization approach.

The findings are summarized in Table 4.1 on the following page.

Table 4.1: Traditional (Designit, Vertic) vs. Entrepreneurial (Phases) globalization approach

Case Company	Designit and Vertic	Phases
View of Globalization	captive offshoring (i.e.: subsidiary offices in foreign locations)	rethink the existing business and do it differently globally (e.g.: empowering subsidiary employees and external vendors)
Value chain activities	replication of all or most activities in-house in subsidiary locations	distribute business activities worldwide partly in-house and partly with external Indian firms
Use of other firms	maintain most KIBS activities in-house and use other firms mainly as arms length suppliers of inputs	leverage strategic resources from external vendor firms and build up a long-term partnership
Future growth and strategic evolution	controlled by the center or headquarters	built up business from the scratch; constantly seeking for strategic opportunities around the globe
Organizational processes and systems	more conventional in decision-making; focus on managerial processes	fast in decision making; willing to take risks; less bureaucratic, high degree of flexibility

Below we examine the relationship between each KIBS attribute and the taken sourcing strategy. Findings are presented case by case. During the interviews with case company representatives, we noted that previous and present sourcing experience might potentially influence enterprises' future sourcing decisions; hence firms' experience dealing with outsourcing processes is also included in the following section.

4.2.3 Case Study 1: Phases

We have conducted two interviews with the CEO and the founder of Phases – Daniel Horn. The first interview is about the basic facts of Phases and what motivates Phases to offshore. The second interview is more structured and in-depth, which provides us with useful information to analyze.

Driven by a set of factors, such as set-up cost, flexibility, and certain resource limitations of a start-up company (Phases Quotes 2, 3), Phases has offshored the majority of mobile application development to both its subsidiary firm located in India as well as several external Indian supplier firms (Phases Quotes 4, 6). Table 4.2 presents an overview of main sourcing strategies of Phases regarding each KIBS attribute based on the interviews.

Table 4.2: Overview of findings in Phases case

Case Study 1 - Phases	
Sourcing Strategy	**KIBS Attribute**
offshore insourcing	Variability - highly customized; - different from case to case.
offshore insourcing; onshore insourcing	Inseparability - technical assistance that is highly separable (easy to manage in different locations) - social related work project that are highly inseparable (requires face-to-face interaction)
offshore insourcing; offshore outsourcing	Tacitness - understanding of the underlying concept of the project - understanding of quality
offshore outsourcing	Innovativeness - highly specialized tasks that requires a high level of innovative capability - providing customers with prototyping of mobile apps, which is different from traditional mobile app firms

Though Daniel Horn considers his company as a new comer in the mobile application industry, Phases is currently working on seven application projects (last confirmed: 14 July, 2012) and most of them are expected to be completed in the near future. The interviewed data is not sufficient to indicate if a co-alignment between a specific KIBS attribute and the corresponding sourcing strategy will positively influence the KIBS activity performance, therefore the following

discussion will concentrate on the question that whether there is a strategic fit between each KIBS attribute and the respective sourcing decision made by Phases.

Variability

Phases helps its customers to create value and increase efficiencies by providing technical assistance through the introduction and integration of state-of-the-art communication tools (Phases, 2012). By responding to various needs from different organizations, Phases provides its customers with highly customized solutions, which differ from case to case (Phases Quote 8) and thereby implies a high level of variability. According to specific customer needs, Phases takes distinct sourcing decisions that are altered from time to time.

In most occasions, the majority of the technical service has been offshored to Phases' subsidiary in India; while the "project management" and "design" is undertaken by the Phases headquarter in Denmark (Phases Quote 5). Nevertheless, when there are very specialized consumer requests, for instance, Android or iPhone based applications; Phases usually outsource the tasks to external partners in India (Phases Quotes 4, 6). In sum, Phases depends heavily on offshore insourcing in terms of highly-customized services.

With regards to the high variability of Phases' business activities, the offshore insourcing strategy taken by Phases corresponds to Proposition 1 by Murray et al. (2009): "the more variable the KIBS activity, the more the sourcing firm relies on global insourcing (i.e., onshore and offshore insourcing), as opposed to global outsourcing" (Y. J. Murray et al., 2009).

Inseparability

According to Daniel Horn, some of Phases' business activities are quite separable, whereas others are highly inseparable. Besides the project management and customer relationship management, everything else of the mobile application development can be offshored to India (T. Phases). Daniel described the interaction with its client firms as a "social" thing and it is difficult to get to know people via internet-based communication (Ibid.). This concern shows

that certain activities such as face-to-face communication is hard to separate location wise and therefore have to be conducted internally.

On the other hand, it was noted by Daniel Horn that the rapid development of the internet has greatly shortened the delivery time and thereby substantially reduced the transaction cost, which enables people from different locations to easily communicate and collaborate – "everything made it possible to kind of have the same feeling as they were sitting next to you" (T. Phases). As a result, most of the technical parts of Phases' projects can be distributed in different time and space, which indicates a high level of separability. Hence they are offshored to India and delivered by its subsidiary or external vendor firms.

The above findings are consistent with the second proposition by Murray et al. (2009) and demonstrate a strategic fit between the "Inseparability"-variable of the mobile application development and Phases' sourcing approaches.

Tacitness

A mis-fit has been observed during the interview when discussing the attribute of "tacitness", as Phases offshore the majority of its mobile application development work to India regardless of how much tacit knowledge is embedded in a specific task. The gathered data from the two interviews with Phases is not sufficient to identify how such a mis-fit between the KIBS attribute of tacitness and Phases sourcing strategy influence a particular knowledge-intensive task performance, but certain problems relevant to tacit knowledge have been identified during the offshore insourcing process.

According to Daniel Horn, there are generally two kinds of barriers when offshoring tasks with a high level of tacitness to Indian employees: misunderstandings in project concepts and different quality perceptions. Explaining the project to the subsidiary employees is not a problem, nonetheless, it is difficult to explain the in-depth concept underneath the project, which is hard

to describe, codify, and then teach others. For instance, Indian employees tend to show less attention to design details, as they have a different cultural understanding.

Another issue is that both the employees of the Phases subsidiary and external Indian vendor firms have a different quality concept, compared to the European employees. This phenomenon is a consequence of a variety of factors like working environment, cultural background, etc. and cannot be taught or changed in a limited period of time. Until now, Phases has never experienced any severe problems caused by the above mentioned phenomena and they have always been able to fix small errors (Phases Quotes 9, 19).

Innovativeness

Operating in a knowledge-intensive and highly competitive industry, it is imperative for Phases to be innovative in order to obtain a competitive edge. Innovativeness is embedded in most of Phases' business activities and a high volume of specialized knowledge is required for dealing with KIBSs. Currently, a variety of technologies are involved in the business services of Phases and innovative solutions are demanded according to clients' needs (T. Phases). Such a high level of innovativeness greatly promotes Phases to take an offshore outsourcing and offshore insourcing strategy. "If I had to innovate everything and think about everything, me all be the creative guy all the time. We couldn't […] I couldn't manage that." (Daniel Horn, CEO and Founder, Phases, 2012)

Concerning the development process of mobile applications, Daniel Horn regards offshore outsourcing as the factor that contributes the most. Outsourcing enables Phases as a start up to exploit the technical external resources to a large extent during the initial stage, which enables the company to earn contracts with clients. Through the collaboration with one of their external Indian suppliers, Phases has been able to provide its clients with prototyped mobile applications without extra charge (Phases Quote 18). This prototyping advantage gained through an innovative cooperation can be seen as a crucial competitive advantage and success factor of Phases.

In sum, another strategic fit between the fourth KIBS attribute "Innovativeness" and Phases' sourcing choice is confirmed.

Sourcing experience

Phases' early experience with offshore outsourcing of mobile application development was quite positive. At that time when Phases first entered into the mobile application industry, there was a lack of internal expertise in developing mobile apps. Therefore Phases had to outsource to the external Indian vendor firms and since then have built a good relationship with each other.

One example is that Phases helped one of its vendor firms to invest in Denmark. This vendor firm possesses strength in terms of technical capabilities, but is considerably weak in design. Moreover, they "don't know how to get to the Europe market". Phases helped the firm to market itself in Denmark and collaborate with it on several projects. Through the cooperation with the Indian vendor firm, Phases has been able to acquire complementary resources and thereby serve the client needs more effectively and efficiently (T. Phases).

When asking about how Phases started up its subsidiary in India, Daniel Horn said "80 percent of our success" is contributed by his Indian partner (T. Phases). He met his partner via the internet the first time and they agreed to collaborate on a project. The project turned out to be a success and both of them liked the working style of each other. Since then they worked together on some more projects and in the end the Indian partner helped him to build up the Phases subsidiary office in India (T. Phases).

Through the assistance of Daniel's Indian friend, Phases was able to overcome a series of barriers (i.e.: language, culture, laws and regulations) and navigate much easier in a foreign market, eventually establish itself in India in a short time frame. Given its former successful experience, Phases is considering to apply the same strategy again in the U.S. (T. Phases). This

strategy is characterized by finding the right local partner first and then building up the affiliate as the second step.

Figure 4.1 provides a geographical overview of how Phases distributes its business activities on the global scale.

Figure 4.1: A geographical overview of Phases' distributed activities

4.2.4 Case Study 2: Designit

As a medium-sized firm with a more established and reliable competitive resource base, Designit has been using offshoring strategies in a conservative way, mainly driven by cost and resource factors. Table 4.3 (see next page) presents an overview of the Designit's KIBS attributes and its sourcing strategies based on Interview information.

Table 4.3: Overview of findings in Designit case

Case Study 2 - Designit	
Sourcing Strategy	**KIBS Attribute**
onshore insourcing	Variability - highly/medium customized solutions - client requirements and complexity level largely differ
offshore outsourcing; onshore insourcing;	Inseparability - coding (programming), maintenance, upgrading tasks are highly separable - conceptualization is highly inseparable
onshore insourcing	Tacitness - very tacit (Designit is concerned about the risk of losing Knowledge) - clients requested the backend processes to be run in Denmark
onshore insourcing; onshore outsourcing	Innovativeness - use of specialist partners through collaborative networks

(Designit, 2012)

Variability

Designit provides a broad range of services, one of which is the mobile application development business. With Designit being the largest corporation of our study, they can look back on years of experience in modern media and the mobile software development. Interviewee Mr. Møller Sørensen pointed out that Designit has a good track record in developing customized mobile application solutions for various firms from the banking-, insurance business, and other miscellaneous sectors (T. Designit). The client requirements largely differ, due to the complexity of the desired solutions. The combination of the highly variable KIBS and a mixture of sourcing strategies (onshore insourcing, onshore outsourcing and offshore outsourcing) have enabled us to identify a weaker strategic fit according to Murray et al. (2009). At least in respect of the heavy reliance on onshore insourcing strategy that is accomplished by substantially utilizing internal resources, there exists a strategic fit between Designit sourcing strategy and the variability attribute.

Inseparability

When asking Mr. Møller Sørensen about what parts of the value chain were outsourced, he responded by saying "The heading could be, front-end development for mobile applications. Basically coding the apps" (Designit Quote 7). As the coding (programming) process of most applications is highly separable and does not need to be limited to Denmark, the Ukrainian supplier firms come into play. At the moment many programming tasks are handled by the Ukrainian team. There are exceptions though, as mentioned during the interview certain banking applications had to be coded in Denmark, because the client had made that a compulsory requirement (Designit Quote 20).

Contrary to that, the conceptualization (high value-added process) of the application has a high level of inseparability and therefore is mainly done in-house (onshore insourcing) (Designit Quote 8). So it once more indicates that the sourcing strategy taken by firms is largely depending on the characteristics of a KIBS activity. Concerning the conceptualization process, there is a strategic fit based on Proposition 2 of Murray et al. (2009), since Designit executes this activity mainly internally.
This fit also applies to the coding part, maintenance and upgrading of applications, which have a low level of inseparability and are thereby differently sourced through onshore outsourcing and offshore outsourcing.

Tacitness

Designit's approach to manage tacit knowledge can be viewed as careful and risk averse. Mr. Møller Sørensen mentioned that Designit "follows a strategy […] of keeping as much in-house as possible" which relates to the argument that Designit does not "want to lose the knowledge, when a project ends" (Designit Quote 12). The same concept applies frequently to the backend side of mobile applications, which is because the clients prefer this activity to be run in Denmark (Designit Quote 9).

Given the tacitness attribute of the highly-valued KIBS of Designit (i.e. conceptualization- and design process), activities that are characterized by a high level of tacitness are executed in-house, which poses a strategic fit since it supports Proposition 3: "the more tacit the KIBS activity, the more the sourcing firm relies on onshore insourcing […]" in order to "achieve higher levels of market performance for the KIBS activity" (Y. J. Murray et al., 2009).

Innovativeness

Mr. Møller Sørensen describes Designit´s approach to Innovativeness as conventional and remarks that the company is not interested in outsourcing innovation (Designit Quote 10). Once the enterprise has "the innovative idea, the innovative solution", or in other words innovation has been generated by using in-house resources, Designit is able to use cheaper labor for the coding of the projects (Designit Quote 10). These findings are not fully consistent with the forth proposition discussed earlier, since Designit has chosen to generally not use foreign specialist suppliers and to pursue insourcing as the dominant path for innovation.

Although Mr. Møller Sørensen mentioned during the interview the concept of a network (fluid organization), which for Designit consists of the frequent collaboration with trusted external partners in Denmark, who are utilized to compliment internal expertise in the process of generating innovative KIBSs (Designit Quotes 14, 5).

This network process can be identified as an indicator for the use of onshore outsourcing to external partners, who serve as specialist suppliers in this case. Mr. Sørensen called it "tap into their skills, use their skills" and talked about the gained flexibility to extend the organization as needed (Ibid.) In summary, there seems to be a strategic fit between Designit's innovative KIBSs activity, and its choice to engage in onshore outsourcing with various external, Danish suppliers that have complementary skills and capabilities.

Sourcing experience

Designit initially had some offshore outsourcing operations in India, which eventually were discontinued due to an unsatisfying experience (Designit Quote 2). Mr. Møller Sørensen said

"we outsource both to Danish vendors and to not Asian at the moment, but eastern European vendors" (Designit Quote 2), namely the Ukraine. This means that Designit has implemented a multi-sourcing strategy. On the one hand, Designit utilizes onshore outsourcing by relying on several experienced Danish partners, with whom they have built a solid relationship (Designit Quote 5).

On the other hand, being Europe's largest strategic design consultancy, Designit has achieved an advanced level of maturity and accumulated a great amount of internal resources, which has driven the onshore insourcing strategy of projects. Further, with Designit having expanded into various southern European cities (e.g.: Barcelona and Madrid) and having set up fully owned subsidiaries, the company can use offshore insourcing as an additional sourcing strategy, which comes with the challenge of transfer pricing (Designit Quote 11). Mr. Møller Sørensen exclaimed that the subsidiaries are an advantage, since "labor is also cheaper. Maybe one fifth of the Danish worker" (Designit Quote 11).

In addition, the company uses an offshore outsourcing strategy (Designit outsources to a Ukrainian vendor firms) for the coding (programming) tasks of the majority of mobile application developments. The experience with the Ukrainian outsourcing supplier has been two fold. On the one hand, the vendor has offered educated developers, with many of them having had experience from the United States (Designit Quote 6). On the other hand, there have been various issues with the vendor that have caused challenges for the outsourcing collaboration.

One of the challenges was that the Ukrainian programmers would "just stop" when they ran into a problem, "which costs […] a lot of money" (Designit Quote 6). Further, there is a language barrier and the programmed code "wasn´t perfect" which raised quality concerns (Ibid.).

Asian vendors are presently taken into consideration again, although Mr. Sørensen mentioned certain criteria have to be met before it becomes a reasonable option for Designit again. He said "we need the right set up" and the supplier firms need to be investigated, if "they have the right

capacity first" and Designit has "to make sure that there is some liaison officer, [...] we can talk to and communicate easily with." (Designit Quote 2).

Figure 4.2 provides a geographical overview of how Designit distributes its business activities on the global scale.

Figure 4.2: A geographical overview of Designit's distributed activities
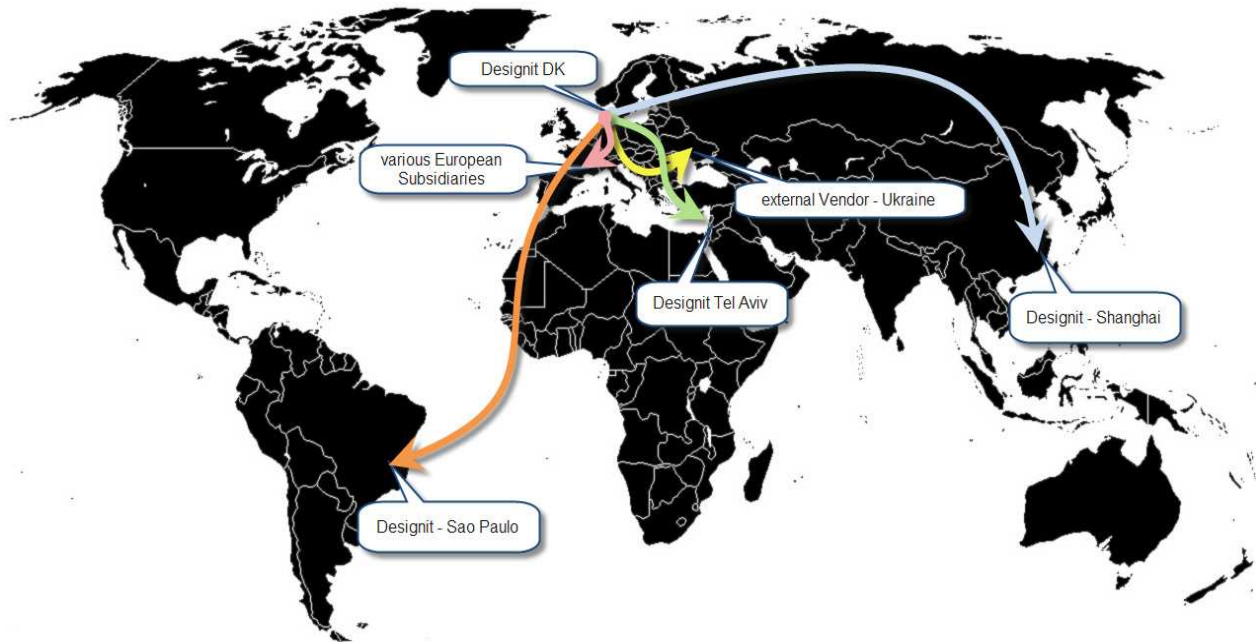
4.2.5 Case Study 3: Vertic

Vertic is a profoundly interesting firm for this research project, due to the fact that the enterprise completes our SME-size range that we have decided to use as a selection criterion. With currently 60 employees (Vertic, Quote 1), Vertic fits well in between case company 1 Phases (start-up, small size firm) and case company 2 Designit (medium size firm, on the verge to large corporation).

Despite Vertic employing outsourcing infrequently, it still represents a useful option for the firm. Various sourcing strategies have been tested and are still being investigated (Vertic, Quote

7) by Vertic in order to achieve more scalability, a better business case and the flexibility to draw on external resources as demanded by the market (Vertic, 2012).

Table 4.4 presents an overview of Vertic's KIBS attributes and its sourcing strategies based on Interview information.

Table 4.4: Overview of findings in Vertic case

Case Study 3 - Vertic	
Sourcing Strategy	**KIBS Attribute**
offshore insourcing; onshore insourcing	Variability - highly/medium customized solutions - customer requirements and complexity level largely differ - typically not "no-brainer" apps
onshore insourcing; onshore outsourcing	Inseparability - coding (programming) is highly separable - strategy, conceptualization, user experience, design is highly inseparable
onshore insourcing	Tacitness - strategy, conceptualization, design are highly tacit processes - project complexity depending on client needs - not "no-brainer" apps
onshore insourcing	Innovativeness - highly innovative solutions

Variability

Most of Vertic´s projects are "typically not sort of no-brainer apps" and can be characterized as highly complex and customized solutions (Vertic Quote 9). Henrik Ebbesen (Head of Development and Partner) confirmed that the majority of Vertic´s products are highly customized solutions based on customer demands and requirements. The company uses the "waterfall" model, which is a sequential model, through which different development stages are evaluated and decisions on the progress are made (Vertic Quote 14). This model enables Vertic to stay in control over the highly variable activities. Considering Vertic´s decision to pursue

onshore/offshore insourcing and the firm being confronted by highly variable KIBS, Murray et al. (2009) Proposition 1 can be confirmed and a strategic fit identified.

Inseparability

Vertic´s mobile application development consists of an array of value chain activities that are partly separable and inseparable.

Mr. Arnoldi Pedersen (Healthcare Director at Vertic) told us that Vertic would "never take a full client project and outsource that" (Vertic Quote 10). Only some of the non-core activities that are characterized by a relatively higher level of separability can be executed by external vendor firms. Both Vertic representatives mentioned that basically only the programming activity (coding of the actual mobile application) is highly separable and can thereby be easily outsourced. Henrik Ebbesen said "Everything stays here apart from the programming"(Vertic Quote 11).

Vertic runs its highly inseparable sales and marketing operations at its headquarter in Denmark and its subsidiary in the United States of America. Mr. Ebbesen continued by saying: "The UX and design we are doing here" (Ibid.). Further, the conceptualization, which is the most valuable activity according to M. Arnoldi Pedersen, is also done in-house. Once a mobile application is close to completion, "the vendors […] test themselves", Vertic afterwards tests all of the applications again, before deploying the application on the so-called "app market" (Vertic Quote 11).

Previously Vertic tried having the user experience (UX) developed by an external vendor, which failed unfortunately (Vertic Quote 11a). The UX process was too inseparable and hard to administrate in different locations, therefore yielded negative results during the outsourcing period.

Additionally, Vertic´s "full-service"-product range approach can be a useful tool in terms of not having to depend on outsourcing. Mr. Arnoldi Pedersen said: "we work quite broadly and both in terms of industries and solutions" (Vertic Quote 3). The company literally has all the

necessary competencies and skills in-house in order to accomplish an entire project by itself, depending on the required project complexity. All of the highly inseparable as well as the separable activities can be managed by the firm itself. Even the highly separable programming-activity can potentially be handled by the trained and experienced in-house senior programmers.

Since Vertic is using cloud services for operating a lot of its processes, the firm could potentially source more from its subsidiary in New York. In that case we are talking about the possibility of offshore insourcing, which would be supported by Vertic using the same structure in both the headquarter and its subsidiary (Vertic, 2012).

In summary, we can confirm that Vertic´s sourcing strategy (onshore insourcing) corresponds with Murray et al. (2009) Proposition 2. The high level of inseparability in most of the firm's value chain activities has led Vertic to onshore insource the majority of the mobile application solution development.

Tacitness

By keeping the majority of the mobile application development processes in-house, Vertic is attempting to handle the tacitness and complexity of the ongoing projects.

Mikkel Arnoldi Pedersen pointed out that Vertic´s applications are "typically not sort of no-brainer apps" (Vertic Quote 9). He continued by saying that most client applications could become highly "complex across many countries with different kind of core activities" (Ibid.). Henrik Ebbesen also argued that the high level of project complexity is one of the reasons for having in-house developers. Vertic values that its developers are critical and are willing to speak up when something in the project does not seem right (Vertic Quote 12). One of the problems with foreign developers is, according to the company representatives, the issue of dishonesty that sometimes occurs (Vertic Quote 12).

According to Mr. Pedersen, tacitness is also embedded in project meetings. He said that "all the context that has been […] discussed […] is difficult to transfer" (Vertic Quote 13). This is causing Vertic to rely more heavily on working with its internal resources, in order to avoid high transactions costs that can be induced by a high level of tacitness or the so-called "stickiness" of knowledge (Y. J. Murray et al., 2009).

Hence, Vertic is implementing onshore insourcing by performing the majority of the mobile application development process in-house. This verifies Murray at al. (2009) Proposition 3, which argues that the "more tacit the KIBS activity, the more the sourcing firm relies on onshore insourcing and the less on onshore outsourcing, offshore insourcing and offshore outsourcing" (Y. J. Murray et al., 2009).

In summary, Vertic keeps the KIBS activities that are highly tacit in-house and we can therefore confirm a strategic fit according to Murray at al.'s (2009) research.

Innovativeness

Although Vertic has chosen a quite traditional approach in its sourcing strategy, the firm is still able to push for innovation in many ways. Henrik Ebbesen talked about Vertic choosing to have core competencies in-house and wanting to be less dependent on supplier firms, due to the previous negative outsourcing experience. Vertic built "up these competencies by partly recruiting and partly by training already existing colleagues to have this knowledge" (Vertic Quote 6). Mr. Ebbesen recounted that most of their programmers were excited and highly motivated to participate in mobile application development training possibilities (Ibid.). The building up of core in-house competencies in order to be more competitive in a new industry is an indicator of firms attempting to enhance the level of innovativeness.

Later in the interview Mikkel Arnoldi Pedersen mentioned the concept of "professional curiosity" that motivates innovation at Vertic. This professional curiosity is expressed by the employees at Vertic sharing "a lot of thoughts and ideas" and "great articles and cases" (Vertic

Quote 15). Henrik Ebbesen on the other hand mentioned certain limits on excessive innovation. He exclaimed that Vertic is involved in "very big projects that have a strategic approach and big clients"(Vertic Quote 16), which have a tendency to ask for more conventional solutions.

Moreover Vertic is utilizing its so-called senior developers, who are highly experienced programmers in testing and evaluating the finished code of mobile applications. These senior developers also function as guides and advisors for the vendor firms, when they encounter problems or having difficulties with a highly complex and demanding project (Vertic Quote 17). The innovative concept of using senior developers is that the enterprise can provide its suppliers with skilled consultants in the development process, benefit itself by indirectly accelerating the time to market period and at the same time ensuring high product quality for its clients.

Generally, Mr. Ebbesen reckons that Vertic´s "ability to innovate or the level of innovation is at a very high level" (Vertic Quote 16). Since Vertic´s outsourcing experience has been primarily disappointing in the mobile applications part of the business and the general level of project complexity being high, Vertic sources it´s innovation within the company. Hence, Murray et al. (2009) Proposition 4 cannot be supported and there is no strategic fit in Vertic´s case, due to the company not pursuing global outsourcing in the innovation process. The question to what extent innovation originates from Vertic´s American Subsidiary could not be verified in the conducted interview.

Sourcing experience

Vertic is a relatively young firm (founded in 2002), that has always been willing to experiment in regards to its sourcing strategy. This indicates an entrepreneurial characteristic, which enables firms to quickly adjust and adapt to the current and future business needs. Henrik Ebbesen explained that Vertic initially did not want to have senior application developers in-house. Over time Vertic started to investigate different sourcing options. Mr. Ebbesen explained that Vertic tested outsourcing in the first 1 to 1.5 years, when they were sourcing from three different local (Danish) companies. These Danish vendors were small basement firms with approximately 2 to

7 employees that had a focus on mobile application development (Vertic Quote 18). Reasons for this outsourcing strategy in the early days of Vertic were internal resource constraints (lack of trained staff) and that mobile applications need to be developed for multiple platforms (different operating systems – different programming language), which is time consuming and relatively complex (Vertic, 2012).

The results of the early outsourcing strategy turned out to be unsatisfying. Vertic encountered "many painful processes", due to vendor firms lacking the skills, capacity and them "not knowing what they were doing". Problems were caused by insufficient budgeting, where some of the vendors set the project price too low. Additionally, with Vertic being "an industry leader", quality became an issue with some of the suppliers (Vertic Quote 5).

Besides that, the lack of experience in regards to outsourcing mobile application projects was mentioned as a possible reason for the challenges that Vertic was confronted with. Mikkel Arnoldi Pedersen called attention to the difficulty of specifying a project, when working in a "young market" and a new industry. Most developers during the period between 2002 and 2004 had not "more than half a year experience" (Vertic, 2012). The consequence of this rather negative sourcing experience, was that Vertic decided to move this competence in-house in order to deliver better solutions for its clients and at the same time improve the "business case" (profitability) for the enterprise. Vertic built up the mobile application competencies "partly by recruiting and by using existing colleagues" within the firm (Vertic Quote 6).

Recently Vertic started to initiate outsourcing again, in order to "keep up with demand" in mobile application solutions (Vertic Quote 6). The problem of inexperienced developers has been resolved, since the industry has become more mature. Vertic is currently testing onshore outsourcing through Danish vendor firms that operate with "developers that are residing offshore" (i.e.: Pakistan) (Vertic Quote 19). Vertic values "Danish representations" when using external suppliers in order to avoid communication problems and increase the sense of responsibility (Ibid.).

Henrik Ebbesen summarized the ongoing outsourcing process as "not […] being better, but Vertic being better" (Vertic, 2012).

Improved specification and tight coordination with the vendors has been a key factor in excelling the outsourcing operation. With Vertic using foreign developers, certain language challenges arise, that can only be solved by "involving them more in the process", which has a tendency to be more time consuming (Vertic Quote 8). The question, according to Mr. Ebbesen is "if the business case holds up". He continues to say that "the cost of developing is very much cheaper", but the occurring transaction costs need to be considered (Ibid.). With Vertic serving a broad range of customers and the level of project complexity varying substantially, the frequency and depth of challenges also differs from project to project. Some of Vertic´s projects are more prone to outsourcing than others. The deciding factor is the complexity of the desired solution and client demands (Ibid.).

Figure 4.3 provides a geographical overview of how Vertic distributes its business activities on the global scale.

Figure 4.3: A geographical overview of Vertic's distributed activities

4.2.6 Case Study 4: InSilico Aps

Having had some negative experience in terms of offshoring outsourcing, the CEO of InSilico Aps, Anders Cervera, now finds his company in a dilemma of whether or not to continue offshore outsourcing (T. InSilico).

The primary reason for InSilico to initiate offshore outsourcing with a Pakistani vendor was cost (price), which is usually regarded as the most crucial offshoring driver (Askin & Masini, 2008; Bunyaratavej, Hahn, & Doh, 2007; A. Y. Lewin & Peeters, 2006b; Stratman, 2008). Anders Cervera also noted that small firms could obtain a quicker and easier growth through offshore outsourcing (T. InSilico). Additionally, the time to market could be decreased due to the scalability of the foreign vendors (Ibid.).

In the following section we present the detailed analysis for our fourth primary case company InSilico Aps. The subsequent Table 4.5 summarizes the most important findings in regards to InSilico´s specific set of KIBS attributes with the corresponding combination of sourcing strategies.

Table 4.5: Overview of findings in InSilico Aps case

Case Study 4 - InSilico Aps	
Sourcing Strategy	**KIBS Attribute**
onshore insourcing	Variability - tailored, highly customized
offshore outsourcing onshore insourcing;	Inspeparability - coding (programming) is highly separable and was outsourced to a Pakistan team - marketing, sales, design, and conceptualization processes are highly inseparable
onshore insourcing	Tacitness - some activities are quite tacit, such as conceptualization
NA	Innovativeness - a certain level of innovativeness (unsatisfied at the moment)

Variability

When interviewing Anders Cervera (CEO, InSilico Aps), he expressed that most of InSilico´s solutions are highly customized and thereby exhibit a high level of variability. "So nine out of ten is a tailor made, customized app" (InSilico Quote 4). In light of this argument, Murray et al. (2009) first Proposition can be supported, because increased variability in combination with InSilico's choice to onshore insource poses a strategic fit.

Inseparability

InSilico´s mobile application development process is notably separable and inseparable. The sales and marketing part of the business process needs to take place in Denmark (as the primary market for InSilico) and is thereby difficult to separate. This also applies to the conceptualization and design part of the mobile application development, since close contact to the client and multiple feedback loops are necessary (InSilico Quote 7). On the other hand, the coding of the application is highly separable, due to it being able to occur in a different space, which was Pakistan in InSilico case (InSilico Quote 11). In sum, the high inseparability of the value-added business processes (sales, marketing, conceptualization and design) has prompted InSilico to pursue primarily onshore insourcing, which thereby represents a strategic fit between the KIBS attribute of inseparability and InSilico´s sourcing strategy according to Murray et al. (2009).

Tacitness

InSilico's entire conceptualization of an application development takes part in Denmark, due to it being an extremely tacit process and thereby requiring a lot of understanding and communication. Mr. Cervera said "the biggest challenge is the concept and concept is done here […] We doing that with our clients" (InSilico Quote 12). Another issue with conceptualization is that frequent interaction with the clients is imperative to ensure the right set up during the initial phases in the application development process. Therefore InSilico Aps decided to keep these activities in-house. Hence, there is a strategic fit according to Murray et al. (2009) Proposition 3, since a large part of InSilico's KIBS activities are highly tacit and the enterprise therefore relies heavily on onshore insourcing.

Innovativeness

Murray et al. (2005) recommended that firms "should outsource from suppliers that possess new and complimentary competencies" (Y. Murray Janet. et al., 2005). With InSilico having had a negative experience with outsourcing, a lack of complimentary competencies of the supplier firm can be assumed. Moreover, by InSilico choosing to insource in regards to innovativeness, Quinn´s (2000) argument that neglected outsourcing can potentially obstruct a valid source of innovations and prevent an enterprise from quickly adjusting to new value added services (Quinn, 2000), seems applicable. Accordingly, Mr. Cervera has noted the problem "we are not good yet at innovating"(InSilico Quote 13).

Another one of the reasons for this unsatisfactory innovation level is the time pressure faced by InSilico Aps to deliver products to consumers. In view of these factors, Murray et al. (2009) Proposition 4 regarding innovativeness cannot be confirmed in InSilico case. Even though the produced mobile applications reach a certain level of innovation, the company currently does not rely on global outsourcing. However, as Mr. Cervera also mentioned their future plan to hire more people with diversified backgrounds, which will complement the idea of depending on external resources to gain specific knowledge, skills, and innovative capabilities that might be a possible approach for them to become more competitive in the future.

Sourcing experience

One of the biggest challenges for InSilico in its outsourcing experience has been product quality, as the vendor firms failed to deliver satisfying solutions. Many Feedback loops were necessary to improve the quality of the coding from the Pakistani vendor, before the final product (the complete mobile application) could be delivered to the client (InSilico Quote 7). The initially expected time to market advantage could not be materialized, due to time consuming cultural issues and miscommunication between sourcing and supplier firms. Additionally, InSilico lacked the local capacity to manage the outsourcing development better (InSilico Quote 3).

With InSilico having had a rather negative experience in outsourcing, it is understandable that the firm has moved back to insourcing, despite being a resource constrained micro enterprise. This insourcing process is accomplished by running the entire design and conceptualization part in-house. Mr. Cervera explained that if InSilico Aps decides to give offshore outsourcing another try, they would continue to execute the high value-added parts (conceptualization and design process) of the business in Denmark and then the vendor firm "only need to focus on how to make the code, how to make things happen" (InSilico Quote 5). Possible advantages of this approach include that miscommunications could be reduced to a minimum and the entire outsourcing process would potentially be much easier (Ibid.)

InSilico has been able to become one of the major players in the mobile application development sector of the Danish market (InSilico Quote 1). Further, the company is currently working on multiple projects. These factors can be viewed as indicators for a good business performance and thereby success of the enterprise. Figure 4.4 provides a geographical overview of how InSilico Aps distributes its business activities on the global scale.

Figure 4.4: A geographical overview of InSilico Aps' distributed activities

Chapter 5 - Discussion

Technological advancements in the recent decades have exerted tremendous changes on the international economic paradigm. To excel in such a highly competitive environment, firms are increasingly farming out lower value-added activities to countries with cheaper labor or outsourcing their service activities to foreign locations. Global sourcing of service activities is playing a prominent role in firms' global value chain configuration. Though global sourcing of KIBSs stays at an early stage, the growth rate of services sourcing (including KIBSs) is expected to grow significantly in the future years, according to a report by McKinsey Global Institute (2005a) (McKinsey Global Institute, 2005a).

Based on the contingency theory that claims firms have to obtain strategic fits with the external environment by adopting a proper strategy (A. Lewin Y. & Henk, 1999), Murray et al. (2009) propose the two-stage strategic fit model to evaluate the relationship between the KIBS attributes and firms' sourcing strategy and how such a combination further affects the KIBS activity performance. Venkatraman and Camillus (1984) point out that whether the strategy implementation is effective, depends on both "the fit between strategy and structure" and "managerial processes" (Y. J. Murray et al., 2009). Therefore, the strategic fit model focuses not only on the individual KIBS attribute, but also incorporates firms' dynamic capabilities on the overall integrated system level.

5.1 Internal and external conditions of case firms

Before we discuss the identified strategic fits of each case firm, this section will look at the internal and external conditions as well as the challenges that derive from them. In the literature review we introduced the contingency theory as the theoretical foundation that represents the base of our primary theoretical framework (Murray et al. (2009) two-stage strategic fit model). Researchers argue that the peculiarity of a specific strategy depends on its fit with "environmental contingencies" (Drazin & Van de Ven, A., H., 1985; Katsikeas, Samiee, & Theodosiou, 2006; Lu & Beamnish, 2001; Lu & Beamnish, 2001; Lukas, Tan, & Hult, Tomas, M., G., 2001; Y. J. Murray et al., 2009; Y. Murray Janet., Kotabe, & Wildt, 1995).

An interesting observation was that the four primary case companies can be split into two groups. We got two medium-sized companies, Vertic and Designit, which are characterized by a similar set of internal and external conditions as well as corresponding strategic choices. On the other hand, we have InSilico Aps and Phases that are representing two smaller enterprises, which possess a comparable set of internal factors and are affected by reciprocal external circumstances.

The internal conditions are similar at Designit and Vertic in regards to their extended company age and level of maturity compared to the two younger firms Phases and InSilico Aps. Both larger firms (Designit and Vertic) have a relatively longer history and have reached a higher level of internal resources, which makes their internal set up different from the two smaller firms of the research sample. Considering the larger size and higher maturity of the two bigger companies, they can provide their clients with extensive experience and expertise. With an increasing company size, there are certain advantages and disadvantages. The stronger internal resource situation can be both beneficial and unfavorable for the firm development.

On the one hand a higher level of resources can be highly advantageous, since it allows the enterprise to handle bigger projects, benefit from economies of scale and scope, invest more and as a result increase market power and be more competitive. But it might also inhibit the leveraging of external resources, restrain entrepreneurial strategies, decrease dynamism and lead to a risk averse approach to strategies and future investments (Roza et al., 2011). At the moment, evidence for Designit and Vertic not being resource constrained is the ongoing expansion into other countries and the establishment of subsidiaries there (T. Designit; Vertic, 2012).

The smaller firms of our data set, Phases and InSilico Aps, are faced by resource constraints and can be considered as start-up firms that are fairly new in the industry. Insilico Aps and Phases resource constraints are twofold, since both enterprises are confronted by financial as well as human resource limitations, which they have to deal with.

Hereby, the limited resources are a challenge, but can also be an advantage according to Roza et al. (2011). Smaller firms have a tendency to be less bureaucratic, can react quickly to changing market demands, act faster in decision making, are highly flexible, and potentially more willing to take risks (Roza et al., 2011). Inadequate internal resources can potentially motivate firms to pursue entrepreneurial strategies (i.e. entrepreneurial globalization), whereby they can become more competitive through leveraging external resources (Rangan & Schumacher, 2012). Currently only Phases is implementing extensive entrepreneurial strategies.

With Phases having limited financial resources, the firm had to find ways to establish itself in this highly-competitive industry. The early set up of a fully owned subsidiary in India has enabled the firm to offer its services at lower cost. A strategic partnership with an unnamed external Indian vendor allows Phases to offer prototyping of mobile applications at no additional charge, which increases the value of Phases' services, compared to its competitors.

When talking about the external environment, which also directly affects the performance of an enterprise according to the contingency theory. External conditions impact a firm's decisions and are exogenous and are generally unaffected by a firm's actions (Robles, 2011).

The general macro environment faced by all our four case companies can be featured as rapidly changing and entails a high velocity due to accelerated technical development in the industry. Therefore, it is extremely difficult for firms to keep up and to develop all the innovations themselves in order to stay competitive. Quinn (2000) remarks that "no one company acting alone can hope to out-innovate every competitor, potential competitor, supplier or external knowledge source around the world" (Quinn, 2000). Such a volatile industry characteristic pushes firms operating in the mobile application industry to undertake outsourcing as an imperative strategy, which enables them to acquire knowledge, technical skills, as well as innovative capabilities from external suppliers. Quinn (2000) further argues that firms that merely rely on insourcing in terms of innovative KIBS activities tend to "cut themselves off from

both a continuing stream of innovations and the opportunity to switch rapidly if a new value-added service appears" (Quinn, 2000).

Contrary to Quinn's statement, Designit and Vertic mainly employ an onshore insourcing strategy regarding innovative business service activities. Company representatives from both sides consider their innovative capabilities as strong and they feel it is necessary to deliver the innovative tasks internally (T. Designit; Vertic, 2012).

Vertic and Designit compete against firms of their size and are direct competitors for each other (Vertic, 2012). Cost (the cheaper development price of the mobile application) is generally not what both firms compete over. The two companies primarily concentrate on projects with a high level of complexity and attempt to differentiate themselves from the competition in terms of product quality (T. Designit; Designit, 2012; Vertic, 2012). Moreover, one of Designit´s external challenges is the difficulty to find capable designers with the right set of capabilities. One way of solving this issue is to partner with local experts (in Designit's case predominantly Danish partners) in order to offer its clients the services demanded and ensure the quality (T. Designit) expected.

Our two smaller size case companies Phases and InSilico Aps compete mainly over price and thereby the cost of developing a mobile solution, which tends to be the most crucial factor for them when challenging competitors. The goal for both firms is to develop an attractive and sufficient product portfolio as well as a coherent reference list in order to advance product quality into the spotlight when bidding on projects. In order to obtain the cost advantage and also achieve external strategic resources, Phases offshores the majority of its KIBSs to its Indian subsidiary and some Indian vendor firms. InSilico Aps offshore-outsourced to Pakistan in order to reduce the cost.

5.2 Data interpretation

This chapter will elaborate and discuss the results from the analysis. First, we are going to compare the four case companies on their offshoring drivers in relation to firm size, according to the offshoring strategy research of Roza et al. (2011). Rangan and Schumacher's (2012) study on entrepreneurial globalization will also serve as theoretical foundation for the discussion on firms' entrepreneurial motives. Furthermore, we are going to review the tests on the relation between firms' KIBS attributes and their chosen sourcing strategies. Since we have been able to identify strategic fits as well as mis-fits, it is necessary to investigate the reasons and ramifications of case companies' sourcing decisions. In sum, this section seeks to identify similarities and differences of the respective firms and attempts to link the results to the earlier proposed research questions.

5.2.1 Discussion on offshoring drivers

Offshoring has become an imperative strategy for firms to achieve cost, resource, and entrepreneurial advantages (Roza et al., 2011). Roza et al. (2011) contribute to the current literature by investigating the differences in offshoring drivers of enterprises and how they do link with differing firm size. The empirical study by Roza et al. (2011) indicates that different-sized firms tend to employ offshoring strategies in a distinct way. The main reason for small firms to initiate offshoring activities is that they can reduce the cost through farshoring, whereas medium-sized corporations are mostly driven by entrepreneurial factors and prefer to source at closer locations (the so-called nearshoring). Further, cost drivers as well as resource drivers are found to be particularly important to large companies, as they are able to implement offshoring strategy to relocate "competence exploring functions" (Roza et al., 2011).

This part will elaborate on the drivers of offshoring that encourage the firms to pursue a certain sourcing strategy. In view of these factors, we will attempt to integrate the firm size category as a useful indicator for answering our research question two: What are the main drivers, according to Roza et al. (2011), for mobile application development firms to offshore their business activities?

Table 5.1 summarizes the main factors that motivate the case companies to offshore in relation to their respective firm size.

Table 5.1: Different offshoring drivers of case companies

Case companies	InSilico Aps	Phases	Designit	Vertic
Drivers	cost, resource	cost, resource, entrepreneurial	cost, resource	resource
Firm Size	micro	small	medium	medium

As noted by Roza et al. (2011), "Digitization has decreased transaction costs dramatically both for hierarchy and market transactions" (Coase, 1937; Ellram et al., 2008). The CEO and founder of Phases, Daniel Horn, has also remarked that the rapid development of the internet enables quick information exchanges across borders, which makes knowledge-intensive activities (e.g.: coding, programming) separable and therefore possible to be offshored.

All of the researched primary case companies, except Vertic, consider the cost factor prominent for them, as they are able to acquire strategic resources at a relatively low cost. Both Designit and InSilico Aps put cost in the first place as the reason to outsource. However, it is worth noting that our interviews with Designit, Vertic, and InSilico reveal that the offshoring cost might end up being higher than expected, as there have been frequent quality concerns and communication-related issues (T. Designit; T. InSilico; Vertic, 2012). This corresponds to Roza et al.'s (2011) argument that "invisible" costs such as "communication related costs" (Stringfellow, Teagarden, & Nie, 2008) or "set-up costs" (Ellram et al., 2008) might occur during the offshoring process.

In terms of applying outsourcing as the resource strategy, Designit has attached great importance to onshore outsourcing strategy, as plentiful strategic resources have been obtained through the cooperation with its external Danish suppliers (T. Designit). InSilico agrees that the offshore outsourcing strategy could be a potential means to achieve expertise resources, but a careful investigation is required to ensure foreign suppliers' capabilities (T. InSilico). Vertic

values its outsourcing strategy mainly as a resource strategy, as flexibility in resources can be obtained by sourcing several parts of the project to vendor firms.

Therefore, Designit (medium-sized), Vertic (medium-sized), and InSilico (micro size) use offshoring as resource strategy and pay less attention to employ offshoring as entrepreneurial strategy. This finding from our research differs from Roza et al.'s (2011) earlier empirical result that medium-sized firms prefer offshoring as entrepreneurial strategy more than small and large firms. Nevertheless, the nearshore or onshore outsourcing strategy taken by both Designit (i.e.: outsource to Danish and Ukrainian vendor firms) and Vertic (i.e.: outsource to Danish partners) indicate that medium-sized firms as such prefer nearshore locations and still pursue a conservative sourcing approach, which coincides with the proposition by Roza et al. (Roza et al., 2011).

The reason for Designit to choose nearshore and onshore locations is linked to its earlier unsatisfactory experience with an Indian vendor firm. Hence Designit has decided to outsource to closer locations that possess similar cultural backgrounds and are thereby easier to communicate with (Designit Quote 2). Parallel to Designit, Vertic views future cooperation opportunities mainly with Danish partners (onshore outsourcing), as they "want Danish representations of these guys" (Vertic, 2012). Through working together with Danish vendor firms, Vertic is able to negotiate and communicate with them more efficiently and conveniently (Ibid.).

InSilico had a negative experience like Designit while managing the outsourcing process in more distant locations and therefore decided to terminate the contracts with its external service suppliers in Pakistan. Though initially driven by a low cost seeking strategy, InSilico has been confronted by a series of problems such as delayed delivery, quality-related issues, which has made the outsourcing idea less tempting. Despite the potential benefits and opportunities of offshore outsourcing in the future, whether or not InSilico will continue with offshoring remains to be the question (T. InSilico).

Phases has set a good example of how small firms can utilize the offshoring strategy as cost, resource, and entrepreneurial strategy. Different from the other three case companies, Phases has benefited from a positive experience when first outsourcing a project to an Indian programmer, who later helped Phases to build up its subsidiary in India. The strong relationship between the CEO and founder (Daniel Horn) and his Indian partner (part-owner of Phases) has been a great contribution to Phases' expansion to India and afterwards motivated further collaboration between both sides (T. Phases).

Phases' story supports Lewin and Peeters' (2006a) argument that firms are able to increase their efficiency, acquire capable expertise and get access to potential consumers by distributing operations across borders (A. Lewin Y. & Peeters, 2006a). Through the combinations of the strategic resources from various locations, Phases has benefited from lower costs through offshoring and at the same time profited by tapping into sustainable strategic resources (Barney, 1991). Despite the resource constraints faced by such a start-up company like Phases, its offshoring process illustrates a different picture compared to the traditional stage models of internationalization (Johanson & Vahlne, 1977). In recent years, small firms without any monopolistic advantages could identify entrepreneurial opportunities and globalize similar to large firms (Rangan & Schumacher, 2012), which makes the traditional and bureaucratic globalization approach less relevant in today's business world (Ibid.).

By comparing the different offshoring drivers of our primary case companies, we are able to identify the similarities and differences compared to Roza et al.'s (2011) previous findings. Firstly, the cost driver remains to be a crucial motive for most case companies, regardless of their size. Secondly, different from the findings of Roza et al. (2011), our interview data implies that there is a growing emphasis put on the entrepreneurial driver by small firms (i.e.: Phases) in the mobile application industry. However, less interest in the entrepreneurial strategy could be identified from the micro (InSilico Aps) and medium-sized (Designit, Vertic) corporations.

In comparison to medium-sized firms such as Designit and Vertic, Phases also demonstrate a big difference in terms of offshored activities. Designit and Vertic merely outsource the low value-added business activities (i.e.: programming, coding) and maintain their core competencies in house, whereas Phases is farming out the majority of its business solutions to its Indian subsidiary and external suppliers, regardless of core or non-core essence. This point corresponds to Roza et al.'s (2011) perception that "smaller firms might search for resources relatively close to their core activities, whereas mature firms focus on resources more distant to their core activities as they have more possibilities to build on their existing resources within their own firm" (Roza et al., 2011).

This finding confirms Roza et al.'s (2011) empirical research result that medium-sized firms "choose relatively more often for nearshoring" and might choose a more traditional way to internationalize (Roza et al., 2011). This is driven by the reason that through a conventional approach medium sized firms are able to utilize partners' specialist resources and gain cost advantages at the same time (Johanson & Vahlne, 1977).

Based on the obtained data, firms' prior experiences concerning offshore outsourcing seem to be a critical factor that might influence their future strategies. Therefore, we suggest that several qualitative factors such as former experiences should be taken into consideration in future research. Furthermore, the resource driver is found to be less important for Designit, since they have reached a certain level of internal resources and they wish to keep their core competencies in-house. InSilico also shows little interest in increasing its resource base through offshoring, due to their mainly negative previous experience. Conversely, Vertic has realized the potential opportunities of leveraging external resources through outsourcing, however, the firm has not yet accumulated much experience in regards to global sourcing (T. InSilico). Phases on the other hand has leveraged strategic resources to a large extent through offshoring.

5.2.2 Discussion on entrepreneurial globalization

Entrepreneurial globalization is a new concept that has been developed by Rangan and Schumacher (2012). Phases is the enterprise in our research selection that fits the description and characteristics of entrepreneurial globalization on most criteria and will therefore serve as a prime example for this new concept. Designit for instance is on the verge of being a large corporation and tends to be not as entrepreneurial in its strategic behavior as Phases, which makes Rangan and Schumacher's theory less applicable.

Rangan and Schumacher (2012) presented Valtech as one of the case companies that they conducted an analysis on. Similar to Phases and Designit, the company pursued an onsite-offshore delivery model. Onsite teams handled the local clients (in our research Danish companies), by providing them with offers, developing design and conceptualization as well as defining the projects and setting the requirements. A large part of the business operations (i.e.: programming, maintenance and updating of the various mobile applications) could then be offshored and outsourced (Rangan & Schumacher, 2012){{2 Rangan, U. Srinivasa 2012}}.

Phases for example, has a small onsite team, that takes care of the local business demands, and afterwards hands over the bulk of the work (the so-called "coding"-programming) to its offshore location (captive unit - subsidiary) in India (T. Phases). Sometimes the company involves external vendors that are situated in India as well. India as an offshore location is especially crucial for Phases due to the high level of scalability and flexibility that the labor market can offer (Ibid.). As Phases continues to grow, it is easy for Phases to employ additional mobile application programmers on short notice and also lay them off when demand drops, which provides Phases with an extremely high level of flexibility.

Another positive indicator for the factor of flexibility and scalability is the enormous availability of trained human resource in India. Specifically Kerala, which is the Indian state where Phases has located its subsidiary, can boast with 50000 information technology graduates a year (T. Phases).

Further, Rangan and Schumacher (2012) stress the advantage of scalability, flexibility and quick project completion speed (Rangan & Schumacher, 2012). This enables small and medium-sized firms to directly compete on speed with larger corporations. Key aspect hereby is that SME can leverage others' resources at lower cost. Eventually firms are able to shift by moving in-house operations to foreign locations, due to the companies realizing certain limitations (Ibid.).

Phases as one of our primary case companies' skipped this step and immediately established a fully owned subsidiary in India. Interview results show that this decision has not been a disadvantage (T. Phases). It needs to be noted though, that Phases is a start-up that is characterized by many innovative strategies and thereby cannot be directly compared with older (firm age) and more conservative firms, such as Designit and Vertic.

Entrepreneurial globalization enables firms to create and exercise new strategic options by improving their ability to leverage their operations (Rangan & Schumacher, 2012). What unites all of the chosen primary case companies of our research is company size (SME) and none of them have any direct monopolistic advantages that they can exploit. The observed firms have chosen various sourcing strategies to create new business advantages by partly relying on other firms' resources and a certain level of openness toward new organizational processes and innovation (Ibid.). This open approach needs to be sustained by constantly adapting and adjusting to the business environment.

Rangan and Schumacher (2012) explain that entrepreneurial globalization is characterized by enterprises reconfiguring their value chains. It needs to be noted that Phases as a start-up with a highly entrepreneurial approach did not need to reconfigure its value chain. The company's ability to offshore rapidly in the initial establishment phase, due to a capable business partner in India, has been a crucial asset in the successful development of the firm (T. Phases).

Key success factor for a firm in the globalized world is an entrepreneurial orientation that "needs to be imbedded in the managerial culture" (Rangan & Schumacher, 2012). Phases seems

to have this orientation, which is supported by the enterprise empowering its employees, constant focus on innovation, flexibility and the goal to frequently adjust and adapt to emerging changes (T. Phases).

Moreover, Phases has a lot of similarities with one of the case enterprises (DeDuCo) discussed by Rangan and Schumacher (2012). Just like DeDuCo, Phases has moved its "low-level design, coding and testing" to India. This was achieved by translating the clients design and functional requirements into technical terms, which made it possible for a large part of the value chain activities to be offshored and outsourced (Rangan & Schumacher, 2012). Further, Phases emphasis' on creating value for the customer is in line with Rangan and Schumacher (2012) work on entrepreneurial globalization.

A strategic partnership can be identified with one of Phases external vendors, which provides Phases with privileged access to the prototyping software "I-rise" (T. Phases).Phases on the other hand has supported this unnamed vendor by sharing expertise on European markets and helped the vendor to establish operations in the European Union. This collaboration is beneficial for both sides. Phases gains a competitive edge by providing free prototyping for its clients and the Indian vendor is able to set up and advance faster into European markets (Ibid.).

5.2.3 Discussion on key findings based on the strategic fit model: stage 1

As discussed in the literature review, Murray et al.'s (2009) two-stage strategic fit model will serve as the core theoretical framework. In this part, we will focus on the first stage since it relates most to the data we collected. Therefore, less attention will be paid to the second stage of the model as only limited insights could be obtained during the research, which limits an in-depth discussion on firms' dynamic capabilities.

Table 5.2 (see next page) provides an overview of our key findings on the strategic fit analysis.

Table 5.2: The overview of the key findings

Primary Case Companies				
KIBS Attributes	Phases	Designit	Vertic	InSilico Aps
Variability	offshore insourcing (Y)	onshore insourcing (Y)	onshore insourcing (Y)	onshore insourcing (Y)
Inseparability	onshore insourcing (Y)	onshore insourcing (Y)	onshore insourcing (Y)	onshore insourcing (Y)
Tacitness	offshore insourcing(N) offshore outsourcing (N)	onshore insourcing (Y)	onshore insourcing (Y)	onshore insourcing (Y)
Innovativeness	offshore outsourcing (Y)	onshore outsourcing (Y)	onshore insourcing (N)	NA
Notes: Y=Yes (Strategic fit); N=No (Mis-fit)				

Our research indicates a strategic fit in the majority of KIBS attributes and in their respective sourcing approach based on the propositions that Murray et al. (2009) have introduced as part of their strategic fit concept (see table 5.2). It needs to be noted that we decided to fixate on the major sourcing strategies implemented by the case companies, when evaluating their business strategies and operations. Neglecting less important sourcing strategies in our discussion serves the purpose of concentrating on key findings.

All of our case companies belong to the same industry (mobile application services), are based in Denmark and fall into the category of small and medium-sized enterprises (SMEs). These similarities support the cross-case comparison of the first stage.

Variability

Variability or the heterogeneity of services is the first key KIBS attribute that Murray et al. (2009) introduce in their research.

Phases shows a strategic fit by offshore insourcing the majority of its KIBSs (customized solutions) to the captive subsidiary in India, which endorses Proposition 1. Designit as the second and largest case company chooses to onshore insource its highly variable KIBS by leveraging available internal resources, which is also aligned with Murray et al. (2009) Proposal. InSilico Aps embraces onshore insourcing as a consequence of a negative offshore sourcing experience in the past. Regarding the highly variable nature of most business activities of Vertic, the corresponding onshore insourcing strategy taken by it also implies a strategic fit.

In summary, all four case companies illustrate a fit for the KIBS attribute of "variability" in the first stage by realizing global insourcing and thereby attempting to foster success in the companies. The case companies possess different ways to deal with the increased monitoring and controlling costs (C. M. Hsieh et al., 2002), due to the high level of variability that most KIBSs contain in the mobile application sector. Designit, Vertic, and InSilico reduce the controlling and monitoring cost by keeping the majority of highly variable KIBS in-house. Whereas, Phases achieves similar results by making its employees in India (offshore insourcing operations) directly responsible for the project they are working on and thereby empowering the Indian team (Phases Quotes 11, 12) and at the same time reducing monitoring and controlling expenses deriving from long distances.

Inseparability

In the previous chapter, we analyzed the impact of the inseparability level on a company' sourcing decision and its relevance to the business performance. The key finding is that all four diagnosed companies exhibit a strategic fit by onshore insourcing highly inseparable KIBS activities.

Phases is managing and executing its highly inseparable KIBS processes, such as conceptualization, design and customer relationship management through onshore insourcing. Explanation for this sourcing path is "the location boundedness of a customer and its supplier" (J. Y. Murray & Kotabe, 1999; Y. J. Murray et al., 2009).

Designit, as Europe's largest Design and Strategic Consultancy, has taken the exact same approach as Phases by keeping the highly inseparable KIBSs of mobile application conceptualization in-house (Designit Quote 8).

The observations in InSilico Aps´ case were similar and are derived from the same motivation since proximity to the client and multiple feedback loops (InSilico Aps Quote 7) are considered to be essential for business success. In Vertics' case, the interviewees remarked that they want to keep as many competencies in-house as possible. With this in mind, core activities that are highly inseparable (i.e.: user experience, design, conceptualization) are delivered internally and technical expertise was acquired through recruiting new employees or training existing workers (Vertic, 2012).

Turning to the KIBSs with low inseparability (programming part of the application development) or in other words, high separability, are handled in the opposite way. These highly separable (low inseparability) activities demonstrate increased options to source from a broader range of suppliers and enable global sourcing (Y. J. Murray et al., 2009). All of the case companies show a tendency to outsource and relocate their business activities with a high level of separability to foreign countries.

Tacitness

Tacit knowledge is a key KIBS attribute characterized as knowledge that "is less teachable, more complex, and more difficult to codify" (Y. J. Murray et al., 2009). After investigating all of the primary case firms, we discovered a first mis-fit in regards to Murray et al.'s (2009) framework.

Phases, which represents one of the smaller firms in our data set, has implemented two sourcing strategies. On the one hand, Phases offshore-insources the majority of its tacit knowledge and processes from its Indian subsidiary. On the other hand, the young Danish start-up firm also offshore-outsources to various external Indian suppliers (T. Phases).

Both of Phases' sourcing strategies represent mis-fits according to Murray et al. (2009), who proposed that "the more tacit the KIBS activity, the more the sourcing firms relies on onshore insourcing and the less on onshore outsourcing, offshore insourcing, and offshore outsourcing to achieve higher levels of market performance of the KIBS activity" (Y. J. Murray et al., 2009). Founder and CEO of Phases, Daniel Horn, pointed out that although it is reasonable for Phases to offshore tacit knowledge related projects as the company follows a technology-sharing approach, there are still challenges such as misunderstandings and communication related issues (Phases Quote 9) that arise in the offshoring process.

Phases is trying to overcome the obstacles of transferring tacit knowledge by executing their training school concept (T. Phases). Here, experienced Phases employees educate internal and external personnel in tacit processes and thereby increase learning by observation, which is usually impossible due to geographic and time gaps of the offshoring procedure (Kuldeep et al., 2009).

Interesting is that we have been able to identify a strategic fit in the case of Designit, Vertic and InSilico Aps. Designit "follows a strategy […] of keeping as much in-house as possible" (Designit Quote 12), which is a strong indicator for its onshore insourcing direction. The reasons for Designit to extensively use internal resources are the concern of potentially losing knowledge and thereby weaken its competitive edge (Designit Quote 12), the prevalent in-house experience and capacity derived from the maturity and size of the company and frequent requests from the client side.

Similarly to Designit, Vertic continues to operate an onshore insourcing strategy concerning its tacit business services. The foremost reason is that the majority of client applications are complex and contain a high level of tacitness, and are therefore difficult to transfer over long distances. Another concern raised by Vertic representative Mikkel Arnoldi Pedersen (Healthcare Director, Vertic) is that transaction costs might end up being higher than expected due to the difficulty to offshore highly tacit business activities (Vertic, 2012). One example is that when the

external supplier delivers outsourced tasks, they sometimes fail the expectation of Vertic and it then takes additional time to fix the problems (Ibid.). Communication-related costs also take place during the outsourcing process. This point corresponds to Stringfellow et al.'s (2008) argument that "invisible" costs can happen when offshoring services (Stringfellow et al., 2008).

InSilico Aps CEO Cervera frequently mentioned the importance of the conceptualization in the mobile application development process. Since this core activity represents a highly tacit process, InSilico has decided to retain the conceptualization within the company. Hence, InSilico operates with onshore insourcing, which is evidence for the first stage strategic fit that we brought up earlier.

Following an onshore insourcing strategy of tacit business processes by Designit, Vertic, and InSilico Aps, these three firms present a certain degree of satisfaction on the corresponding consequences, as certain barriers like misunderstandings, training costs, and delay in delivery have been avoided or at least limited (T. Designit; T. InSilico; Vertic, 2012). Phases as a distinct case firm in this aspect has not experienced any severe loss by offshoring tacit activities, but certain problems that have emerged during the process need to be fixed.

Innovativeness

Innovative KIBSs are vital for achieving a competitive advantage in the service sector. Quinn (2000) remarked that companies in a high-velocity environment, such as the mobile applications industry, cannot endure and continue to be competitive without utilizing innovations and knowledge from external sources (Quinn, 2000). Murray et al. (2009) noted that the high level of innovativeness of the KIBS attribute is associated with global outsourcing strategies; as such a fit will positively influence the performance of the KIBS activity (Y. J. Murray et al., 2009).

Daniel Horn, Phases Founder, seconds that concept by saying that they could not manage all the innovation themselves (T. Phases). By sourcing from specialist vendor firms, Phases gains its access to in-depth knowledge, technology and expertise, as well as innovative capabilities of its

suppliers, which is especially important for a start-up enterprise like Phases (Phases Quotes 2,6). In the mean time, Phases has substantially increased its efficiencies without hiring more employees (Phases Quote 16). In all, offshore outsourcing innovative tasks has greatly compensated Phases' internal limitations in terms of resources and innovative capabilities, thereby providing significant assistance for Phases to compete and distinguish itself in the mobile application market.

Global outsourcing (i.e., onshore and offshore outsourcing) is an attractive choice for firms that possess highly innovative KIBS activity according to Murray et al. (2009) Proposition 4, which was thoroughly tested in the previous analysis chapter. The results were a strategic fit for Phases offshore outsourcing to external Indian supplier firms and Designit executing onshore outsourcing with Danish Partners. Vertic, on the other hand, illustrates a mis-fit by maintaining its innovative activities internally. We were not able to extract sufficient data in order to identify whether a strategic fit exists in terms of innovativeness in the case of InSilico Aps, since the enterprise is not actively involved in sourcing innovation.

To elaborate more on the findings of Designit. The enterprise relies frequently on cooperation with a network of trusted external Danish partners that assists in generating innovative KIBSs (Designit Quotes 14, 5). This fluid network organization as Mr. Møller Sørensen calls it, is taking advantage through onshore outsourcing and officiates as a knowledge and innovation co-producer (Y. J. Murray et al., 2009).

Phases founder Mr. Horn provided us with a fitting example on how his firm is using external specialist suppliers in the mobile application development process in order to have a competitive advantage over its rivals. Having collaborated and developed a great relationship with an Indian vendor that has specialized in prototyping solutions, Phases is able to offer its clients prototyped mobile applications free of charge (Phases Quote 18).

Regarding Vertics' choice not to rely on external resources, the consequences can be twofold. On the one hand, the possibility of not having to depend on vendor firms can be an advantage, being able to uphold its quality requirements, reducing transaction costs and not depending on the suppliers good will. On the other hand, running too many projects in-house could potentially drive up costs, restrain innovation and external knowledge input and thereby reduce Vertics' competitive edge. Vertic needs to explore the trade-off between having core competencies in-house and at the same time leveraging external resources efficiently.

5.2.4 Discussion on key findings based on the strategic fit model: stage 2

In this rather brief section we are attempting to analyze our primary case companies based on their level of dynamic capabilities. The absorptive capacity and integration capability are summarized as dynamic capabilities and constitute the second stage of Murray et al. (2009) strategic fit model. Our interview data is unfortunately limited and does not contain much information on this topic. Thereby we are deliberately drawing the line on absorptive capacity, since our data is specifically constrained in terms of integration capability.

Cohen and Levinthal (1990) define absorptive capacity as a firm's ability to acquire and assimilate new external knowledge, transform and exploit learned knowledge, and apply it to commercial ends in order to create value for the company (Cohen & Levinthal, 1990). We asked the primary case firms if they had a specific process that they follow when they receive the programmed (coded) application back from their subsidiaries, partners or vendors. These questions were directed toward shedding some light on how the observed enterprises absorb and eventually integrate new external knowledge in the overall KIBS system.

As indicated before, most of the answers from the firms in respect of absorptive capacity were inadequate for an elaborate analysis. It seemed like the company representatives had not yet considered the concept of absorbing knowledge themselves. We got the impression that the firms are handling their absorptive capacity very flexibly and case specific. Hereby it is worth noting that the firms are capable of absorbing knowledge, otherwise they would have failed a

long time ago. There seems to be no fixed set and formulated approach used yet, at least not amongst our primary case enterprises.

Irrespective of the lack of data from the primary case companies, certain remarks on the firms' dynamic capabilities as a result of the conducted interviews can be made. Even though none of the analyzed firms were aware of having built up and implemented a specific set of absorptive capabilities, all of the enterprises mentioned unique patterns they follow when trying to exploit externally generated knowledge.

When questioning Designit on their absorptive patterns and skills, Mr. Møller Sørensen answered that they do not have established procedures for acquiring and assimilating new external knowledge yet, due to the fact that Designit´s involvement in the mobile application business is quite recent (Designit Quote 12). Further, Designit has a way to evaluate the technical skills and capacities of potential partners, which is investigated by giving the partner some small scale projects to test them on. Mr. Møller Sørensen asserted that trust, transparency and proper communication is essential in this evaluation process (Designit Quote 19). Moreover, the company is acquiring and applying knowledge from their network of external partners, that enables Designit to "tap into their skills, use their skills" (Designit Quote 14).

Phases on the other hand has naturally been very open minded in their attitudes toward accessing new external knowledge and absorbing the learned information and thereby creating firm value. The enterprise follows the philosophy of openness and knowledge sharing (T. Phases). Daniel Horn (Founder and CEO, Phases) talked about Phases promoting critical thinking from the vendor side, which he considers to be helpful in the knowledge creation process (Ibid.).

One major collaboration took place, when Phases helped one of their Indian vendors with design tasks and supported them in marketing themselves in Europe. He continued to point out that collaboration really matters and that sometimes even external technicians contribute

useful inputs for the designs (T. Phases). Another interesting remark for improving Phases absorptive capacity is learning from mistakes. Mr. Horn argued that making mistakes is crucial in order to improve the firms' capabilities, which also applies to the absorptive skills of a corporation (Ibid.). Constant adaptability and willingness to change as well as a generally high level of absorptive capacity has been fundamental in the development of Phases as a fast growing start-up (Ibid.)

InSilico Aps as our third case company uses feedback loops as a tool for improving its absorptive capacity (T. InSilico). Despite that, no standardized way of absorbing external knowledge and its integration has been established.

Vertic currently has no specific procedure for absorbing knowledge. Mr. Ebbesen declared: "We don't have a set way of doing it" (Vertic, 2012). Despite that Vertic is utilizing its in-house senior developers, who evaluate the final projects, draw conclusions and function as guides (Ibid.). Reason for the limited experience of Vertic in relation to absorptive capacity is that the firm has only outsourced infrequently (Ibid.)

5.3 Research implications

5.3.1 Theoretical implications

In the above discussion, we have reviewed on key findings that are relevant to the two-stage strategic fit model of Murray et al. (2009), Roza et al.'s (2011) research on offshoring drivers, Woodwards (1958) contingency theory and the entrepreneurial globalization concept of Rangan and Schumacher (2012), which constitutes the theoretical framework of this master thesis.

The discussion evolves around the two research questions that are previously proposed, by identifying the driving factors for mobile application development firms to outsource and applying the two-stage strategic fit model in a knowledge-intensive industry (i.e.: the mobile application industry). By combining Roza et al.'s (2011) theory on offshoring motives linked to firm size and Rangan and Schumacher's (2012) discussion on entrepreneurial globalization, each

case firm's drivers to conduct offshoring strategy have been investigated and compared. All these four researched case companies are driven by cost factors, whereas the attention paid to resource drivers and entrepreneurial drivers differs from case to case. Although only one of our case firms (Phases) has implemented many entrepreneurial strategies into its sourcing approach, the upcoming trend of entrepreneurial globalization cannot be ignored.

Rangan and Schumacher (2012) have raised the question if certain industries are more prone to entrepreneurial globalization. It seems that the mobile application industry is one of them, due to its characteristics of rapidly developing, quickly rising global demand and the so-called "gold rush" scenario (T. Designit). In sum, the mobile application business sector is an industry that is undergoing rapid changes and shifts frequently.

The mobile application industry fits the description of Rangan and Schumacher (2012) and is more inclined to the trend of entrepreneurial globalization. This links well to Murray et al. (2009) two-stage strategic fit model. Only firms that foster a suitable level of dynamic capabilities are able to survive the challenge of intense and constant local as well as global competition (Y. J. Murray et al., 2009). In addition, firms need to have a competitive edge in order to secure future business and distinguish themselves from their multiple competitors.

Investigating the theory of entrepreneurial globalization from Rangan et al. (2012) has led to a great amount of discussion and helped us realize the value of Rangan and Schumacher's contribution. The theory can function as a helpful guide for firms when it comes to making smart sourcing decisions. Moreover, entrepreneurial globalization assists in potentially turning companies' weaknesses or restrictions into strengths. For instance, the resource limitations that SMEs' experience are generally viewed as a weakness. This challenge can be overcome by moving business activities "abroad to create some new advantages" (Rangan & Schumacher, 2012).

SMEs can then flexibly leverage external resources and at the same time have the opportunity to gain access to innovation. Rangan and Schumacher (2012) talk about entrepreneurial firms

eventually developing a "willingness to seek, recognize, and exploit new strategic options for growth wherever in the world they find them" (Ibid.) Success factor hereby is that corporations "constantly and frequently adapt their processes and systems" (Ibid.), otherwise their competitive advantage will not be sustainable and ultimately subside.

We have the impression that the global service sector represents a suitable research area for entrepreneurial globalization. Future research needs to further explore and explain the potential of entrepreneurial strategies for small and medium sized enterprises.
Additionally, large corporations should not be neglected in future research, due to increasing global competition and the growing interest of large firms wanting to reap the benefits of entrepreneurial business strategies.

In our research, we were able to identify whether there exists a strategic fit between the KIBS attribute and case firms' specific sourcing strategy, according to Murray et al.'s (2009) propositions on each KIBS attribute. However, as we fell short on quantitative data regarding the firms' financial performance, it is difficult to examine how such a relation influences the KIBS activity performance. Qualitative data obtained during the interviews with case company representatives indicates that the four case enterprises are satisfied with their performance; nonetheless, an in-depth and longitudinal research is necessary to obtain a full picture on the firm's performance.

Another deficit of our dataset is the limited data on the firms' dynamic capabilities. On the one hand, given both time and resource constraints faced by us, it has been difficult to extend the time frame and involve more interviewees. On the other hand, all of the four case companies fall into the category of small and medium-sized enterprises with a relatively limited resource base and less mature operating system, therefore the interviewees tend to have a hard time in understanding and describing dynamic capabilities on the integrated KIBS system level. However, it is of great importance for firms to take dynamic capabilities into consideration when dealing with KIBSs.

Murray et al. (2009) two-stage strategic fit model has been very useful in our analysis, but at the same time shown some limitations. We noticed that the strategic fit model lacks an industry perspective in its framework. Specifically our set of firms from the mobile application industry could have benefited from an integrated industry perspective. As mentioned earlier, the mobile application industry is characterized by a high degree of volatility and uncertainty. Both attributes have a strong influence on the strategic decisions of the involved enterprises and cannot be neglected in a thorough analysis. When contemplating the effects of the industries high volatility and uncertainty rate in regards to the endurance of an existing strategic fit, reasons for concern arise. Facing the dynamic context and the high volatility of the mobile application industry, a currently existing strategic fit might be short lived and potentially evaporate at any time. There is no guarantee for the firms that their achieved strategic fits will last, which raises many questions for future researchers.

One question is how durable can a strategic fit be in such a dynamic and quickly changing setting? Vertic, one of our primary case companies for example is vertically integrated and currently has a strategic fit in the KIBS attributes of "Variability", "Inseparability" and "Tacitness". Does Vertic have enough connections to be sustainable in this industry for a long time? Do the primary case firms have the capabilities and resources to adjust to the rapid changes in the industry? Since Murray et al. (2009) stress the importance of dynamic capabilities in developing a sustainable business approach, it raises the question on what efforts can increase the internal capacity to absorb and integrate knowledge within the firms? How can firms react and adjust their sourcing strategy to such an extremely fast paced environment? How could firms obtain a sustainable competitive edge facing such a rapidly-changing business environment?

These questions remain to be answered in future research, where we also suggest a stronger focus on the second stage of the strategic fit model. Traditional resource-based theory argues that firms with resources and capabilities that are valuable, rare, imperfectly imitable, and non-substitutable can potentially possess a sustainable competitive edge over their rivals (Barney,

1991). However, from the perspective of dynamic capabilities, the firms can only achieve sustainable capabilities when they stay dynamic and evolve over time, by adapting, redeploying, or recombining with external resources and capabilities (Helfat & Peteraf, 2003).

Relevance of strategic fit

The outsourcing of KIBSs has been implemented by a large number of firms. However, corporations have limited understanding on how to utilize KIBS sourcing to create a competitive advantage.

The two-stage strategic fit model provides firms with a theoretical framework to examine their sourcing strategies, with respect to the KIBS attributes and firms' dynamic capabilities. By applying the strategic fit perspective, firms are able to identify whether the chosen sourcing approach aligns with a specific KIBS attribute, which enable company managers to take an appropriate strategy in correspondence to the KIBS characteristic. Moreover, as Murray et al. (2009) highlights the importance for firms to have dynamic capabilities to absorb newly acquired knowledge and integrate it with the KIBS system, it could potentially assist enterprises to get rid of the outsourcing traps, such as neglecting long-term objectives and focusing on short-term profits.

Our analysis has shown that the strategic fit is a useful indicator for a corresponding combination of certain KIBS attributes and a specific sourcing strategy. This corresponding combination can potentially lead to an increased business performance according to Murray et al. (2009). Companies that coalign their sourcing strategy with KIBS attributes "can perform more effectively than firms that lack such a coalignment" (Y. J. Murray et al., 2009). As noted earlier, we have positioned the paper on the foundation of the contingency theory that can be viewed as the origin of the strategic fit concept.

The contingency theory further stresses the importance of a strategic fit, which is understood to be the balance between a firm's strategic behavior as well as its internal and external environmental conditions (Van de Ven, A., H. & Drazin, 1985).

The strategic fit discussion is highly relevant due to its effect on business performance and the potential of gaining a competitive advantage. Especially in a rapidly changing industry such as the mobile applications industry, the objective to pursue strategic fits seems to be a worthwhile strategy for companies to implement.

A business strategy that leads to sustainable competitive advantage can only be achieved if "its implementation involves the fit between the organization's business strategy and its internal processes" (H. Hsieh Yi & Chen, 2011). We extend this match by proposing the inclusion of the conditions of the external industry environment which is in line with the concepts of the contingency theory. Hsieh et al. argue that an "appropriate match enhances organizational effectiveness and generates superior performance" (Ibid.). To survive in a changeable environment, companies should constantly aim for a match between their internal resources and the dynamic environment, particular market developments and customer requirements (H. Hsieh Yi & Chen, 2011).

During our research we identified various factors that can potentially lead an enterprise to be more prone to exceptional performance. We can name "strategic fit", "dynamic capabilities", "firm size", "entrepreneurial strategies" as possible factors that influence company performance levels. In addition, we are certain that there are more factors that we have not mentioned, that have an effect on enterprise performance levels.

It will interesting for future research to examine what effect a lacking strategic fit or coalignment of sourcing strategies and KIBS attributes have on a firms performance. A possible research question could be: Does a lack of strategic fit lead to bad performance? What additional factors can lead to superior performance? The results of this future research could potentially support and consolidate the findings of Murray et al. (2009) and our work.

It needs to be acknowledged that our research project had a specific industry and location focus. The data set constructed and used in the present paper provided insights on the mobile

application industry from a developer's perspective and Denmark served as the research location.

We found that while firm size as a factor in our data set did not seem to have a strong influence on the occurrence of a strategic fit, it might be different for another industry, perspective and/or location.

5.3.2 Managerial implications

Murray et al. (2009) predict that the growing demand for more sophisticated solutions from customers will further drive firms' system integrators to provide a variety of advanced services. This trend will place a high requirement on the firms to develop a general system, formulate and coordinate a network of external KIBS vendor firms, absorb and integrate KIBSs into the overall system in order to develop technological capabilities for future needs (Davies, Brady, & Hobday, 2007). This point again highlights the importance for firms to build dynamic capabilities to ensure satisfying KIBS performance, as a coalignment between KIBS attributes and sourcing strategy does not necessarily exert positive outcome (Y. J. Murray et al., 2009). This perspective has crucial implications for the way mobile application firms manage their outsourced KIBSs.

It needs to be noted that all four case firms must have reached a certain level of dynamic capabilities, otherwise their offshored or outsourced business projects might have failed. However we encourage all firms to build and strengthen their capabilities at the overall KIBS system level, due to the essential role that firms' dynamic capabilities (i.e.: absorptive capability and integration capability) play in the long-run.

The entrepreneurial aspect in the global sourcing literature has grown strongly in the recent years. Roza et al. (2011) stress the importance for firms to achieve new resource combinations through offshoring and remark that smaller firms may find offshoring more beneficial to distinguish than to save costs (Roza et al., 2011). Rangan and Schumacher (2012) further point out that companies of different size are able to seize entrepreneurial opportunities and globalize through offshoring. This trend is likely to continue as Chesbrough argues in his recent work that the era of open innovation is coming and firms are able to outsource their R & D

activities, build up innovative capabilities by utilizing the strategic resources from external communities (H. Chesbrough W. & Appleyard, 2007; W. Chesbrough Henry, 2003). For companies, these theoretical viewpoints suggest that it has become essential to identify and realize the opportunities by engaging in the trend of entrepreneurial globalization.

Phases

For Phases, a trade-off between short-term cost savings and long-term sustainable benefits has to be obtained. Phases has already gained significant advantages in terms of cost and resources through offshoring from the beginning, nevertheless, it has not yet established a KIBS integration system, which will exert significant impacts on future success. Another point is that Phases should be aware of not falling into the trap of "one-strategy-fits-all perspective" (Y. J. Murray et al., 2009), as the company is mainly following offshore outsourcing and offshore insourcing strategies. Certain problems have been observed while offshoring tacit business activities to India, which also demonstrate a mis-fit according to Murray et al. (2009) proposition (Ibid.). We suggest managers to investigate each aspect carefully and thereby choose an appropriate strategy.

Following an entrepreneurial approach from the very start, Phases has already attached considerable benefits by leveraging other firms' resources, which provides a vivid example for the potential small firms such as Phases can achieve by becoming global players from scratch. At the managerial level, Phases is encouraged to continue its open-minded and progressive way of doing business. Its original entrepreneurial orientation needs to be embedded and extended in its corporate culture, both within the headquarter office in Denmark and its subsidiary in India.

Designit

With Designit being a relatively established and mature firm, its current conventional sourcing strategy still fits its KIBS attribute set up. However, operating in such a fast-paced and constantly changing environment (mobile application industry) may call for a more sophisticated and entrepreneurial oriented way of doing business. In the upcoming years, Designit may need to rethink its business and reconfigure its value chain to adapt to this

growing trend and stay competitive in the global market. The company also lacks a well-established KIBS integration system, which is an additional area to improve on.

InSilico Aps

Despite InSilico having had a rather negative offshoring experience, we recommend that the firm continues to pursue possible offshore sourcing solutions. Especially in an increasingly competitive global environment, cost persists to be a deciding factor. Furthermore, the intensifying pressure for innovation leads us to suggest to InSilico Aps to seek out more opportunities in regards to external knowledge as an innovation source.

We also encourage InSilico to sustainably grow its resource base so that the enterprise can attract larger and potentially more complex projects in the near future.

Another recommendation is that InSilico Aps could expand its product portfolio and at the same time continue to build up its core competencies. Hereby a balanced approach is required in order to avoid weakening of either (product portfolio expansion or focus on core competencies).

Since InSilico is currently a small company (micro enterprise), we think that the implementation of entrepreneurial strategies according to Rangan & Schumachers work (2012) could be beneficial. Specifically the leveraging of external resources seems to be a useful strategy for smaller firms when pushing for growth.

Vertic

Vertic with its comparably strong resource base has highly favorable conditions for more extensive experiments with additional sourcing strategies. We recommend Vertic to investigate the possibility of offshore outsourcing, since it can potentially lead to lower costs and increased flexibility, proliferated scalability and the possibility to tap into external knowledge. Particularly so called "specialist suppliers" could enable Vertic access to "in-depth knowledge, skills,

investment infrastructure, and innovative capabilities" (Y. J. Murray et al., 2009).This could make Vertic more competitive and accelerate company growth.

Vertic should continue to invest in the so called professional curiosity concept by enabling employees creativity and innovativeness through brain storming sessions and a specific amount of time set aside for that purpose.

Alternatively, Vertic could also profit from increased collaborations with potential talent pools such as universities. This approach would be an advantage when recruiting talented human resources.

Chapter 6 - Conclusion

Using the two-stage strategic fit model from Murray et al. (2009) as our primary theoretical framework, we set out to test if the model with its propositions on the relationship of KIBS attributes and certain sourcing strategies in combination with a specific set of dynamic capabilities, applies in the mobile application industry.

We observed that the model is adequate and applies in most of the cases we analyzed in terms of Murray et al. (2009) model's first stage. As noted earlier, we were not able to gather sufficient amounts of data on the second stage that could produce an extensive analysis and discussion.

The analysis of the first stage revealed a moderate relationship between the majority of the case companies KIBS attribute set up and their chosen sourcing strategy according to Murray et al. (2009) work. We found that while most firms showed strategic fits and were aligned with the propositions from Murray et al. (2009), there were some deviations that highlighted the limitations of the framework.

We have argued that only enterprises with the right combination of KIBS attributes and fitting sourcing strategies that nurture a suitable level of dynamic capabilities are able to reach sustainable business success and survive the challenges of intense and constant local as well as global competition. Additional benefits and business opportunities can be potentially obtained by using entrepreneurial strategies.

Equally important, we also discovered that the two-stage strategic fit model lacks an industry perspective. The integration of the industry perspective could greatly enhance and refine the research on the impact that the industry environment has on firms' strategic decisions and subsequently the presence of strategic fits. We suggest that future research investigates the relationship between the characteristics of the associated industry and the company's strategic approach that can directly influence the occurrence and endurance of strategic fits. By integrating the industry angle, research would tie in with the fundamental concepts of

contingency theory and could potentially provide a more complete picture of strategic sourcing processes.

By introducing two additional sourcing theories, namely sourcing drivers by Roza et al. (2011) and entrepreneurial globalization by Rangan and Schumacher (2012), we have attempted to support and supplement the two-stage strategic model with a perspective on what motivates certain sourcing strategies (Roza et al., 2011) and a deeper insight into the recent trend towards entrepreneurial globalization (Rangan & Schumacher, 2012).

We ultimately conclude the following three points on Roza et al. (2011) theory. Firstly, the cost driver remains to be the main driver within our dataset (except Vertic, that predominantly pursues the resource motivation), hereby regardless of the firm size. Secondly, we observed that the two researched medium-sized case companies - Designit and Vertic are still following a relatively conventional sourcing path and prefer to nearshore/onshore outsource their business processes, which supports Roza et al.'s (2011) remark that medium-sized firms favor close locations to exploit entrepreneurial opportunities and achieve resources (Roza et al., 2011). Thirdly, contrary to the findings of Roza et al. (2011), our data set of the mobile application industry implies that there is a growing interest of small firms (i.e.: Phases) to implement entrepreneurial strategies.

Only within the investigation of firms' prior experiences concerning offshore outsourcing do we find signs of unexploited potential. We found that firms' previous experiences seem to be a critical factor that influences their future strategies. Therefore, we suggest that enterprises' former sourcing experiences should be taken into consideration as an additional qualitative factor of future research projects.

In addition, our thesis offers a set of future research implications for the promising work of Rangan and Schumacher's (2012) entrepreneurial globalization. We have discussed the importance of the principles of entrepreneurial strategies in a global market. Specifically a

highly dynamic and fast changing industry such as the mobile applications development sector seems to be a favorable dominion for the concepts of entrepreneurial globalization. An array of potential research propositions has been presented in the previous discussion chapter (see Chapter 5).

We propose a long term investigation that includes the combination of the three main theories (two-stage strategic fit by Murray et al. (2009); outsourcing drivers by Roza et al.'s (2011); contingency theory by Woodward (1958)), since we have reason to believe that it could offer a more complete picture on the sourcing motivations (drivers), the internal and external conditions, and the resulting sourcing decisions of the enterprise with its implications for the business performance. The notion of a combined research approach makes sense to us, because it enables the researcher to investigate how firms are able to improve their value chain configuration, to be viable, competitive and continuously adjust to their changing environments.

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Appendices

Appendix A: Selected interview quotes from primary case study 1: Phases

Quote 1: "We started in Denmark first and then we created the company in India." (Phases, CEO and founder Daniel Horn, March 2012)

Quote 2: "the reason to outsource is. Our company is offering a lot of things. We are not specialized in one corner of the net development for example. We are offering dot.net, php, jgrail, front end work, we are offering a lot of things. And if i had to have developers doing all that, i had to have a big development team. And with the salary level in Denmark, it´s not possible to be a startup having all these services. So if i should start in Denmark i would be specialized in one thing and would have five guys working on that. Not twenty guys working on a lot of different things. But that is part of the way we work and that is one of the main reasons for outsourcing. […] We can be extremely flexible." (Phases, CEO and founder Daniel Horn, May 2012)

Quote 3: "It´s extremely difficult to be a startup and just hire people here in Denmark. In this area, it´s very difficult to get these big projects if you are not established in some kind of way. So that is why offshoring or outsourcing is extremely good in this business because it is possible. […] in IT it is a whole different thing. It works really well. If you focus on these things like. Don't get the cheapest work force you can get. Spend some time on making a nice environment for your people. For example in India." (Phases, CEO and founder Daniel Horn, May 2012)

Quote 4: "*[So you had outsourcing at first and you still sourcing from them sometimes…]* Yes, when we have clients… like Android and Apple apps, else we are actually having, we have a guy who is building up our internal app department right now." (Phases, CEO and founder Daniel Horn, March 2012)

Quote 5: "[…] Everything. I mean, we do the project management here in Denmark. We talk with the client, we make the project description. The rest is outsourced to India. […] We only do the project management up here and the design. The rest is done down there. All the technical aspects of the project is done in India." (Phases, CEO and founder Daniel Horn, May 2012)

Quote 6: "[*(Do you outsource)to your subsidiary mainly or also to the vendor?*] sometimes, if it is very specialized. Like specialized Android. Or if it´s some hardcore iphone development, we outsource it to some guys we have in India also, that are very good at what they do. We are not so specialized in each corner of iphone, Android. We can do most of the things. If we have some very difficult stuff, we talk with those guys." (Phases, CEO and founder Daniel Horn, May 2012)

Quote 7: "[*Which part do you think contributes the most in the mobile application development? Is it the offshore outsourcing?*] Yes." (Phases, CEO and founder Daniel Horn, May 2012)

Quote 8: "It´s very different. Sometimes we are able to use some of the code. Sometimes we are not able to use it, because we signed a contract, so we can not use the same code. Sometimes it´s just not something we have done before. Something new. So, very different from project to project." (Phases, CEO and founder Daniel Horn, May 2012)

Quote 9: "Explaining the project is not so hard. Mainly the part after the project has been delivered from them. [...] So they say they understand the project, they do the project, and then there is some misunderstandings. And then we have to correct it afterwards. So there is a little bit of communication problems in that sense. Because they have another idea about how things are. They don´t focus so much on design for example. […] It´s mostly about the quality, that they don´t have the same sense of quality as Europeans have." (Phases, CEO and founder Daniel Horn, May 2012)

Quote 10: "How can we make it work that we are in different places? I think it is one of the success criteria is that we have good people in India. […] We have a very advanced hiring process. We really put a lot of effort in making sure that the people that we hire are very good. If they are not good, it would be a lot of work to communicate back and forth. They wouldn´t really understand, we would have to spend even more time on getting the information there and back again. So that is one of the

things that we have done to make it possible to do it like this. […] But today, the technology and the speed of the internet and everything made it possible to kind of have the same feeling as they were sitting next to you. So it´s mainly the social issues, that is much bigger that delivering the project and all. There is no problem in that. It´s mainly the social thing. That is why we are also, I am going down there a lot. To know these people. It´s very difficult to get to know people on skype. You can do it, but it is just not exactly the same as being there. That is the only problem i can see, that you don´t get the social part of working together. […] The design phase is a little bit different than the technical phase. Because we can describe the whole technical phase and then just let the developers work on that. The design phase is much more like collaborating with the client, sitting next to them, drawing, getting their expressions and understanding what they want. " (Phases, CEO and founder Daniel Horn, May 2012)

Quote 11: "We let them understand that we are working on our project which has some value […] all these things create another environment that they haven't seen before. […] We are making each person a project manager actually, we are not just giving orders and then they perform, they are actually given a project and then they have to think about how we handle them. They have personal responsibilities to deliver these." (Phases, CEO and founder Daniel Horn, March 2012)

Quote 12: "[…] we want quotes from the employees. We asked them to come up with 10 quotes each, and then we picked up the best quotes and print them on the walls. So we are kind of inspire them to think a little bit creative." (Phases, CEO and founder Daniel Horn, March 2012)

Quote 13: "[…] we put it all on Podio and everybody is collaborating and doing the best, the best solutions. Sometimes the designers had some really good idea […] or sometimes it's the technicians have something that designers should take in account." (Phases, CEO and founder Daniel Horn, March 2012)

Quote 14: "We had very good relationship to them so we also helping them to invent in Denmark for example. We helped them market themselves up here and we collaborate with them on projects. They don't have designers for example. They only have app development. We are really good at doing nice designs. Now they are pure engineers. They don't know how to get to Europe market for example. And how does people working in Europe. All these things. That's what we can do. So they want us. They want us to be a part of everything they do as well." (Phases, CEO and founder Daniel Horn, March 2012)

Quotes 15: "I always say that 80 percent of our success is his contribution. He is doing an extremely…a lot of work for us. Like getting the right people." (Phases, CEO and founder Daniel Horn, March 2012)

Quotes 16: "if I had to do anything out here, regarding like, innovativeness, if I had to innovate everything and think about everything, we all be the creative guy all the time. We couldn't…I couldn't manage that. For example, at the moment, we have 45 different projects at the same time, so if we have to be the guy doing all stuffs for all these projects, I wouldn't be able to do anything. So that's why it's really important for me that my employees and Indians also can do this." (Phases, CEO and founder Daniel Horn, March 2012)

Quotes 17: "I think you're asking about if we are getting better to absorb. I don't think so. I think we are on the same level but we have been extremely good at that from the start. And we're still like we always changing the way of doing things all the time. […] you're able to absorb them and integrate what's going on." (Phases, CEO and founder Daniel Horn, March 2012)

Quote 18: "It depends on the project. If it's an app we have like really good tools that make the project really, really good. In a sense, that we can prototype an app before we do it. In like one day we can prototype a whole app. And we can run it on our phone, we can give it to the client and say: 'Hey, is is it like this?' *[So it´s not just screen shots? You can really run it?]* It´s 100 percent like a real app. Just not working with real data. So you can give a phone to the client and say: "It´s like this?" And then they can say: "No I wanted the button to do this. And then we can change the prototype and get it accepted from the client. And say yes, this is what they want. Then they programme it, and we get way more out of it. *[That is pretty cool, because one of the other companies, they just mentioned that they use screenshots to explain]* Most company's doesn´t. I-rise is what we use for prototyping. […] We can actually supply prototypes without charging extra for it. " (Phases, CEO and founder Daniel Horn, May 2012)

Quote 19: "Don't just write five lines about the project and send it down to them, you will get crap back. It´s very logical. If you do your homework very good, you will get a good project. If you just […], and send it down, you won´t get anything good out of it. A lot of people outsource in that way, and blame the people down there for not delivering something good. […] With people in India for example, you have to describe what´s going on. But that's what a lot of companies doesn´t really. They think they can do it the same way, they do it up here. But it´s really not possible. Only if you train your people to be able to do that. But that takes a while." (Phases, CEO and founder Daniel Horn, May 2012)

Quote 20: "*[have you experienced any challenges or difficulties (when outsourcing to external vendors)]* they don´t have the same sense of quality and all these things. So, it´s the same thing for other vendors. They don´t even have maybe the European style coming into their work. They are just working like they have always done. So sometimes there is some small issues, but then we can fix it and that´s it. We have never been into like big problems and couldn´t deliver or something like that." (Phases, CEO and founder Daniel Horn, May 2012)

Quote 21: "Our goal, our concept is to create value or savings for the customer. And we do that with innovative solutions. So depending on the growth of the value we create, we can see if we have been innovative. If we are just doing the same thing as we have been doing all the time, they won´t get any value out of it, if we deliver the same. I mean, we have this app which does this thing. If we deliver the same thing, just with another design, we won´t create any value for them. So we can directly measure the value that we create for them. Not directly. Most of the time we can see some kind of. We had one company for example, while we had been working with them, they have grown thirty percent in turnover for example. With them we can see, we created this and this happened. *[So you get financial feedback as well from the companies´. Is that something you require or ask them to do, is it voluntary?]* It´s part of the process we do with each client. We sit down at the start and we look "what can we do for you guys?" We think we can move you from here to here in half a year for example. And if you do what we say, you will get to this point. " (Phases, CEO and founder Daniel Horn, May 2012)

Quote 22: "That´s what it is all about. Being innovative., working smarter. It´s like ongoing business forever." (Phases, CEO and founder Daniel Horn, May 2012)

Quote 23: "*[So you are satisfied with the level of innovation?]* Yes, we want to get to a level where we can handle all the projects we want in a good way and still have time to do our own projects. And that is why we are still expanding. I don´t think we will be one thousand employees in five years or something. One hundred maybe, or something like that. Enough people so that we can handle the projects we want and still do our own projects." (Phases, CEO and founder Daniel Horn, May 2012)

Appendix B: Selected interview quotes from primary case study 2: Designit

Quote 1: "i can assure you that a lot of that growth comes from mobile strategy or new digital offerings. New digital services. It is that part of the business that is growing. All of our business is growing. We have graphic design, classic product design, we have web design, we have service design and we design research. But obviously we have a lot of mobile development." (Designit, Design Manager & Senior Consultant Rasmus Møller Sørensen, April 2012)

Quote 1a: "*[What attracts you most to outsourcing]* First of all. Cost! […] Often we need the same profiles in our company to ensure that the people we are buying out there will have the right competencies and skills." (Designit, Design Manager & Senior Consultant Rasmus Møller Sørensen, April 2012)

Quote 2: "[…] we outsource both to Danish vendors and to not Asian at the moment, but eastern European vendors. We have outsourced parts of the development to India at one time. Our experiences weren´t that good. Then we have some developers, which we work together with, in the Ukraine. And the experience here is much better. But i know for a fact that market is also changing rapidly at the moment. And we are looking into finding Asian companies that we can work together with. But we need the right set up. […] we have to make sure that they have the right capacity first, because we are sort of relying on them in our type of project plans and what we commit to. We have to make sure that there is some liaison officer, which we can talk to and communicate easily with." (Designit, Design Manager & Senior Consultant Rasmus Møller Sørensen, April 2012)

Quote 3: "My experience from working with the vendors for example in the Ukraine, is that if they meet some sort of obstacle. And you will when you develop mobile applications. Especially since everything is in flux right. If they meet an obstacle they will just stop. And then nothing happens. One day might go or might pass and you come back to them and ask: "what´s the progress?" – "We haven´t worked on it." Also because they have other clients. They just move on to the next project they have. Maybe it´s the companies that we have been working together with. That they are not that good. I have heard it from other agencies as well, using some. It´s a problem. It´s not that they don´t think. It´s just the culture. And if there is not sort of a project manager taking complete care of the project from their side and understanding the project in depth, then there is a lot of problems when you do that." (Designit, Design Manager & Senior Consultant Rasmus Møller Sørensen, April 2012)

Quote 4: "Cost! A developer in the Ukraine costs, it´s not a precise price, but it´s one tenth or something like that of the cost of one of our own developers. We have the same profiles. Often we need the same profiles in our company to ensure that the people we are buying out there will have the right competencies and skills. […]We need to see some of their solutions and in order to validate that, we need some people on our side. So cost basically." (Designit, Design Manager & Senior Consultant Rasmus Møller Sørensen, April 2012)

Quote 5: "Designits` experience is limited when it comes to outsourcing. But when we outsource inside Denmark, we get a lot of knowledge. It´s not knowledge, maybe knowledge transfer. We learn a lot about their technologies. It probably doesn´t make that much sense in this project. We have some very good partners in Denmark, where we are the clients main contact, the main supplier of the solution, but we outsource to different companies in Denmark." (Designit, Design Manager & Senior Consultant Rasmus Møller Sørensen, April 2012)

Quote 6: "There are a lot of transaction costs when it comes to outsourcing. And i experienced that personally with the Ukrainean suppliers. First of all they just stop. That costs us a lot of money. […] But also the code wasn´t perfect. And since everything has to go through Emails and telephone conferences and these bug reporting systems. It just takes time. And then there is the language barrier as well. The developers in the Ukraine are quite good. They are highly educated, many of them. And many of them have also been to the US for example. The ones we work with at least. But not all of them. There are misunderstandings, especially if it is a Danish app. They don´t understand the language on the screens." (Designit, Design Manager & Senior Consultant Rasmus Møller Sørensen, April 2012)

Quote 7: "The heading could be, front-end development for mobile applications. Basically coding the apps." (Designit, Design Manager & Senior Consultant Rasmus Møller Sørensen, April 2012)

Quote 8: "We develop the concept for the app. […]That we develop in-house, we develop the information architecture around that. We develop the visual concept, design all the screens, all the different elements. We define the interaction designs." (Designit, Design Manager & Senior Consultant Rasmus Møller Sørensen, April 2012)

Quote 9: "And then they begin coding. Which is what i mean by front-end development. Because you also have the back-end. The back-end is sort of where the data resides, if it´s a server based solution. For example insurance data. And we haven´t used them for that. […] Yeah in-house or with other vendors here in Denmark. It´s often because of the client. They often have preferred partners when it comes to highly technical integration of their data onto other platforms." (Designit, Design Manager & Senior Consultant Rasmus Møller Sørensen, April 2012)

Quote 10: "Actually, I think we are very conventional. Because we don´t want to outsource innovation. We are the ones who need to be at the forefront of innovation for these solutions. It´s more sort of getting it to the market, when we have the innovative idea, the innovative solution. That´s where we can use cheaper labor. Maybe it´s becomes of our limited mindset, experience when it comes to outsourcing. […] But, in terms of Innovation, how much we sort of get from them, it´s limited. So we sort of tell them what we need and then we get that. Hopefully we get exactly what we need. We don´t want them to develop a completely new, another solution. The innovation level should be very high, when it reaches them. They might innovate in terms of technologies they sort of apply. And the coding technologies they use, but the solutions should be exactly what we tell them to." (Designit, Design Manager & Senior Consultant Rasmus Møller Sørensen, April 2012)

Quote 11: "You can also see the development inside at the moment, where we are expanding. Also to southern Europe, where labor is also cheaper. Maybe one fifth of the Danish worker. So we are also sort of outsourcing internally. I don´t know what

you call that in technical terms. We are the same company by name, but of course legally and, we are separate companies. […]Yeah, it is insourcing. And there are challenges with transfer pricing. But that´s something i think will happen much more. Because we share the same DNA, we share the same portfolio, when it comes to attracting clients. We share the same brand. But we don´t share the same costs.” (Designit, Design Manager & Senior Consultant Rasmus Møller Sørensen, April 2012)

Quote 12: “Yeah, i think it´s quite tacit. We don´t have established procedures. Also because it´s quite new. We have followed a strategy in Designit, of keeping as much in-house as possible. Because we don´t want to lose the knowledge, when a project ends.” (Designit, Design Manager & Senior Consultant Rasmus Møller Sørensen, April 2012)

Quote 13: “That is our competitive edge, that is also why Designit has gone from being three project, industrial designers to an international company. With 120 people just in Denmark. With i don´t know how many, thirty or forty educational backgrounds. It´s extreme, because they have taken chances. Seen new opportunities, and the attracted those people. Maybe also attracted some people which they found interesting, that had some skills in within certain areas, in certain business areas. Just certain capabilities and then built that business area around them. If we had outsourced everything we wouldn´t been here. We can´t do everything ourselves, especially when it comes to mobile development. Because it´s growing so rapidly at the moment. And there is a lot of people from other areas moving into mobile.” (Designit, Design Manager & Senior Consultant Rasmus Møller Sørensen, April 2012)

Quote 14: “They are highly skilled developers. […] We can´t attract them, we can´t pay them a competitive salary, basically. But it makes more sense for us to just sit on them, and hire them either through some contracts. Sort of, we have this amount of many, what can you develop? Or just on an hourly rate. What we learn is actually, it´s not internalized. Because we don´t have the same developers in-house, on the same level. So, we have some, but probably not on the same level. And they will be working on other projects. They might not be combined. But we can sort of tab into their skills, use their skills, right. Sort of extending our organization when we need it. […]Because we are always extending this network. Sort of a fluid organization. And sometimes we actually bring them on board, bring them to the meetings with the client and tell them, this guy is not from Designit, but he is a trusted partner.” (Designit, Design Manager & Senior Consultant Rasmus Møller Sørensen, April 2012)

Quote 15: “Not all of our projects unfortunately have the right innovation level. You can´t be innovative all the time, because it might not be what the client is sort of asking for. So of course it depends on the project. But then you can be innovative when it comes to handling the business processes, but the solution itself might not be innovative. So when it comes to sort of inside the company, how innovative we are in handling our projects. That´s basically how satisfied are the designers. So employee satisfaction measurements.” (Designit, Design Manager & Senior Consultant Rasmus Møller Sørensen, April 2012)

Quote 16: “. It might be very innovative what we do, but the final result might not be that innovative, because of strategies or cost cutting issues or branding issues or what have you. But some projects we can measure of course. That´s both on the business impact side of it. So, how much extra revenue did they get from an innovative, new beer bottle design, for example. Or how many new customers did Danske Bank, the biggest Danish bank, get from the mobile service, which we developed. And that is actually something we have numbers on.” (Designit, Design Manager & Senior Consultant Rasmus Møller Sørensen, April 2012)

Quote 17: “Mainly qualitative, we go out when a solution has been offered to the market. We go out for the client and do research. But mainly qualitative. We are not that hard core number crunching. I think it is an area we need to develop more. Especially in these times, we need to justify every dollar, euro spent.” (Designit, Design Manager & Senior Consultant Rasmus Møller Sørensen, April 2012)

Quote 18: “If we find the right companies to outsource to, it gives us a competitive edge in terms of cost. We can spend some of the resources, we can lower our costs, which is necessary in many cases. Due to crisis and competition. A lot of companies are moving in. So there is a gold rush, but there is not that much gold anymore. That´s what happens in gold rushes right. So we can still be competitive, because we can´t get the right people to work for us, at the right speed. And then suddenly, things change. The coding frameworks change and suddenly all apps should be Html 5 maybe, and natively built for a

specific IOS, ah OS. And then we would have to let them go again. Then hire some new ones. That is very expensive for us. So that is also competitive edge, that you can sort of shift horses immediately. But only if you have the right partners out there. You need to trust them 100%. And that has been a challenge for us." (Designit, Design Manager & Senior Consultant Rasmus Møller Sørensen, April 2012)

Quote 19: "Often not on big projects. You have some small scale projects. And then from my own perspective, I am also a project manager. Communication is everything. To know where they are. I need to trust that what they say is correct. And if we have a deadline, the deadline is met. So again, trust and transparency. "(Designit, Design Manager & Senior Consultant Rasmus Møller Sørensen, April 2012)

Appendix C: Selected interview quotes from primary case study 3: InSilico Aps

Quote 1: "Now we are about 9 people, still a small company, but we are one of the largest here in Denmark about the mobile app development. I mean, I think we have done most mobile apps. A lot of companies would like to do mobile apps, a lot of small scale, you know basement companies but I think we are the oldest and biggest company right now." (InSilico Aps, CEO Anders Cervera, May 2012)

Quote 2: "The reason why we started back then was that primarily because of the price. We could hire, so to speak, a couple of guys to third or fourth of the original salary level comparing to here. So we could save, we could of course save a lot of money and then I also knew a team in Pakistan, so I had the contact and the relation. Then you trust the guys. So it was easy for us to start up very easy like this and we could do it cheaply. So it was and it's difficult to find local resources here doing exactly mobile app development so it was you can say time to market, price, and also we had the relation […].(InSilico Aps, CEO Anders Cervera, May 2012)

Quote 3: "the project we did through them, was not very good. […] but the main thing is that it took extremely long time from the start to deliver it to the client. There was a lot of miscommunication and… it was just difficult to manage and we were not ready local to project manage the outsource development. That requires more resources, local, to develop, of course. […] The quality of the code, the programming was not good enough […] It was just our specific team in Pakistan was not good enough. […] So it was a mix of all those things but primarily I mean ok it could take a little bit more time, we could work harder here to have the app development down there but still when you also get bad quality then it doesn't make any sense so we cut down almost the whole team." (InSilico Aps, CEO Anders Cervera, May 2012)

Quote 4: "very very customized. So it's primarily, we have only one product or you can say one solution that we have resolved. It's called Sales tool. […]So nine out of ten is a tailor made, customized app." (InSilico Aps, CEO Anders Cervera, May 2012)

Quote 5: "The biggest challenge is the concept and concept is done here totally I mean. We doing that with our clients, either we come up with something, they pick us to do some thinking, creative thinking about how should that be, or they have done that themselves and then they provide us with flow chart something like that. […] And what we also have learnt about in the outsource setup if we should do that again, probably move to somewhere else, we will do it with a project where we have completely designed all screens. […]And this explains how to code that. But then it is much more easy and easy to outsource, because then they don't have to think about how visual things should be because they have it already. So they only need to focus on how to make the code, how to make things happen." (InSilico Aps, CEO Anders Cervera, May 2012)

Quote 6: "[…] it's very simple, they don't send the code, they send the program, so they send like…they send a file and we install and then we run and see it does the correct thing.[…] we test it and we give feedback." (InSilico Aps, CEO Anders Cervera, May 2012)

Quote 7: "Many many loops before we even send it to the client. […]So we test internally and loops doesn't work correctly, doesn't show this and this. Loops suddenly it works and we send it to the clients. Then there are still loops because they've got other things. Probably they want to change the position of one button, and then go back to the programs, go back to us again, to the client and then we have a sign of ok it's ready […] " (InSilico Aps, CEO Anders Cervera, May 2012)

126

Quote 8: "It's just see some problems. One, as you mention, was cost. The other is time to market, growth, you could grow quicker and easier because it's very difficult to find people here. Like who is capable of doing Android, and iOS programming. So cost and then quicker growth. Of course, cost, I mean is our expensive to salary but it should also reflect on our price to the client. Perhaps it could also give us a…Ok, that could give us a competitive advantage in price. But not in quality. We cannot go out and say we have now better quality because we outsource." (InSilico Aps, CEO Anders Cervera, May 2012)

Quote 9: "Companies are using outsourcing as a price parameter. We use outsourcing so we can get much cheaper. So that could be an opportunity. So it's growth in the end. More clients, because you are cheaper. In the end, you still need to be good quality because otherwise it would backfire. You will lose a lot of clients, you will get a bad coding." (InSilico Aps, CEO Anders Cervera, May 2012)

Quote 10: ", how to hire more innovating people, not hiring just the same kind of people, you know, app developer, designer, I mean, maybe some people with more crazy background, but still good at designing, good at what they do, they should be able to put some twists to raise the level of what we are doing with other views and understanding. But still, the best of the best, of course. But the best of best is also people have different backgrounds. But these things we are much aware of that, but we are not good yet at innovating. Implementing ways of innovating." (InSilico Aps, CEO Anders Cervera, May 2012)

Quote 11: "the central programmer and he puts down the logic when you click on that button everything happens, he compiles it and then the app is ready (22:04). So they send it to us, we install it and we test it and we give feedback."

Quote 12: "The biggest challenge is the concept and concept is done here totally I mean. We doing that with our clients, either we come up with something, they pick us to do some thinking, creative thinking about how should that be, or they have done that themselves and then they provide us with flow chart something like that… so we have the concept already here."

Quote 13: "we are not good yet at innovating", "Because when you are a small company, it's also difficult to spare time for that. You need to focus on delivering to customers or paying for app development. So it's difficult to take some time out of the concept, then we want to innovate, we want to make some cool products or whatever." (p-6)

Appendix D: Selected interview quotes from primary case study 4: Vertic

Quote 1: "Approximately we're 60 employees, divided in 2 offices. We are around numbers 40 here in Denmark and 20 in New York. There's a lot of different people here, there's a good combination of…" (Vertic, Head of Development and Partner Henrik Ebbesen, August 2012)

Quote 2: "we actually take pride in having most competencies in house. So actually we come to that, we are not very big fans or users of outsourcing, actually. So we have every role here basically that is needed to make interactive solutions digitally" (Vertic, Head of Development and Partner Henrik Ebbesen, August 2012)

Quote 3: "we consider ourselves as pretty much, full service. Because we try to have all the competencies in house that is needed to execute, the kind of solutions we want to do. And you can see…I won't say as part of the full service, but we work within many different industries and we do many different kinds of solutions. So we are not narrowly to be specifically within apps or particularly in e-learning. But we work quite broadly and both in terms of industries and solutions. I would really think it is a key strength because you're able to bring knowledge and experiences from one industry bring one solution into another one. […] I would say Vertic is a very strong in our business understanding. We were very business-driven and that's sort of what we try to keep in mind whenever we develop some kind of solutions with our clients." (Vertic, Healthcare Director Mikkel Arnoldi Pedersen, August 2012)

Quote 4: "So we need to have, our initial thought was that we want to outsource this because we need to have too many people here in order to take that demand of apps. So we actually did that on and off for a year or one and a half maybe. We tried three

different companies I think, smaller basement agencies that has 2,3,4,5,6,7 people that are focused on this area." (Vertic, Head of Development and Partner Henrik Ebbesen, August 2012)

Quote 5: "the core conclusion of that is, it didn't work. It was some very painful processes and we thought initially well maybe it's this company that doesn't know what they were doing. We tried another one. We found out they don't really know what we were doing. […]We always take fixed price if we do outsourcing normally. So they have to give us a fixed price, as we also have to give fixed price to our customers. They set the price too low. So when they went out of hours they are like starting to be the sub-contractors, they start to be difficult to work with because they are like "we are spending so many hours on this" and Vertic is still demanding that we change this and that. And part of the problem is that because we are industry professionals, we have a very high level of, or demand for quality. […] So we fight until it's the way we want it and that makes us potentially difficult to work with. But that's the same demand that we put on ourselves. We put on our sub-contractors." (Vertic, Head of Development and Partner Henrik Ebbesen, August 2012)

Quote 6: "so we had a hard time with that using these guys so we actually more or less decided that we want it to have this competence in-house instead. So we are starting in building up these competencies by partly recruiting and partly by training already existing colleagues to have this knowledge also. It's easy to find programmers that would like to do that. It's an interesting area. They want to do it, and they are motivated for it. That's what we are working with now. We still start to do a little bit of outsourcing because it's hard to keep up with demand. And now we are started to look a little bit into outsourcing possibilities again and see how it goes now." (Vertic, Head of Development and Partner Henrik Ebbesen, August 2012)

Quote 7: "that's what we are testing now. But still with Danish, that will always be. I don't think we will go another way than that. We want Danish representation of these guys. Otherwise they are just not reading their emails and getting a new phone and they are off" (Vertic, Head of Development and Partner Henrik Ebbesen, August 2012)

Quote 8: "But now when it is offshore, we of course understand more that they cannot read what we've put in and copy. They are putting in. They don't really understand what it says. They had to be more involved in the process. That of course takes more time and in the end we'll have to see if there is a business case. Because there is no doubt that the cost of developing is very much cheaper but the question in the end if the project manager goes nuts and it all comes down to that the business case is the same if we did ourselves. […] what product what project it is. Some projects is more likely to have a success if they are outsourced than others, because we do a lot of things that are really complex here." (Vertic, Head of Development and Partner Henrik Ebbesen, August 2012)

Quote 9: " The apps we've been doing are typically not sort of no brainer apps, which just have three pages of text and mini-website with You know, images and text. It is often complex across many countries with different kind of core activities, registration, database behind the stuff." (Vertic, Healthcare Director Mikkel Arnoldi Pedersen, August 2012)

Quote 10: "The stuff that we then do outsource are not what we consider, not core competencies but some of the strategic stuff, such as the concept behind that. We never take a full client project and outsource that" (Vertic, Healthcare Director Mikkel Arnoldi Pedersen, August 2012)

Quote 11: "Everything stays here apart from the programming in this one case, basically. So we are doing the user experience (abbreviated as UX) which is very important in apps, the design and the UX. The UX and design we are doing here, we also of course, the vendors have to test themselves. We are testing it with many many phones and everything we testing on the multiple platforms and we deploy ourselves in the app market. (Vertic, Head of Development and Partner Henrik Ebbesen, August 2012)

Quote 11a: "Especially they sort of in navigation and the UX part cause a lot of problems because we were like when we receive something back we are like "come on guys it's so obvious." (Vertic, Healthcare Director Mikkel Arnoldi Pedersen, August 2012)

Quote 12: "I take great pride in the developers that I have here should be…they should be really proactive. If they are not proactive, they are not here. […] Shall I really program this because it doesn't make any sense? And that's what we demand our people here and that is very hard to find outside in Denmark also work in outsourcing in different technical areas and I had a problem when I interview people, no matter what I ask, these guys, if I said: "can you do iphone?" "Yes, no problem." "Can you

do java?" "yes, no problem." "Can you do flash?" "Yes, of course." "(Vertic, Head of Development and Partner Henrik Ebbesen, August 2012)

Quote 13: "As soon as you outsource, does some of that discussion that is difficult to transfer. Even making meeting minutes that's delivered, but all the context that has been, it's been discussed within this difficult to transfer." (Vertic, Healthcare Director Mikkel Arnoldi Pedersen, August 2012)

Quote 14: " we normally have a work with a waterfall-model here. So there's like different waterfalls where you get approve of design, stuff like that. Even though you are doing that, still, we are, as I also mentioned with the developers that we are looking at the things we are doing and evaluating them while we are doing, and we might change something even though it has been approved 5 times." (Vertic, Head of Development and Partner Henrik Ebbesen, August 2012)

Quote 15: "The first thing that came to my mind was that people are professionally curious. People share a lot of thoughts and ideas and I hope it is not an expression of people having too much time at hand. But people find a lot of great articles and cases. And they send them and share them with each other. And for me that is an expression of professional curiosity, which is really important." (Vertic, Healthcare Director Mikkel Arnoldi Pedersen, August 2012)

Quote 16: " I think our ability to innovate or the level of innovation is at a very high level. In relation to what it is we are doing and what it is we want to do. You could find someone, who could think up a more innovative, crazy concept to dance with your phone to unlock or something like that. We could probably also think of that. But we are tied to very big projects, that have a strategic approach and big clients." (Vertic, Head of Development and Partner Henrik Ebbesen, August 2012)

Quote 17: "We would have our developers evaluate it. And that is also one of the strategic approaches of having senior developers here, that they are able to say "this is not good enough" or "Yeah it looks nice". And they are also able to guide. The other day we had certain functionality that the vendors that we are using had a hard time programming. They spent three days on trying to get it right and weren´t even close to being right. One of our guys spent 35 minutes making it the way it should be. And then we sent that source code to them and say, it was just modeled together, "here is the approach that you should you for getting this right". And that is the power of having senior resources here, that we can do something like that." (Vertic, Head of Development and Partner Henrik Ebbesen, August 2012)

Quote 18: "our initial thought was that we want to outsource this because we need to have too many people here in order to take that demand of apps. So we actually did that on and off for a year or one and a half maybe. We tried three different companies I think, smaller basement agencies that has 2,3,4,5,6,7 people that are focused on this area." (Vertic, Head of Development and Partner Henrik Ebbesen, August 2012)

Quote 19: "we basically have these developers. They have a team of developers that are residing offshore, but the company as such is a Danish company with Danish representation." (Vertic, Head of Development and Partner Henrik Ebbesen, August 2012)

Appendix E: Executive Summary

This research project takes a strategic fit perspective to examine the features of firms' knowledge-intensive business services (KIBSs) and their chosen sourcing strategy. The investigation of various KIBS attributes and their potential strategic fit with certain sourcing strategies provide the foundation to hypothesize about the implications for firms' performance.

With the development of the research on enterprise sourcing performance, contingency theory has received growing attention. The main concept of contingency theory is that firms need to obtain "strategic fits" with their external environment through the implementation of a proper strategy (A. Lewin Y. & Henk, 1999). Murray et al. (2009) base their work on the conception of contingency and formulate a two-stage strategy fit model, which has been used as the main theoretical foundation of our

project. This paper offers a further contribution to the research field by taking the analysis onto a more practical level. This is achieved by investigating if and how the theoretical propositions apply to small and medium-sized enterprises (SMEs) in the highly volatile Danish mobile application industry.

Besides the primary focus on the first stage of Murray et al. (2009) strategic fit model, the paper explores possible linkages with the research on sourcing drivers by Roza et al. (2011) and the concept of entrepreneurial globalization by Rangan and Schumacher (2012). Interviews were conducted with company representatives from four selected case firms in order to collect first-hand data. The results indicate that the case firms possess strategic fits between most KIBS attributes and their sourcing strategies, in accordance with Murray et al.'s (2009) viewpoints. These identified strategic fits are considered as factors that could positively influence firm performance. Our interviewed data also suggest that other factors, such as "dynamic capabilities", "firm size", "entrepreneurial strategy" are considered to be critical for firms' superior performance. Moreover, we noticed that the two-stage strategic fit model of Murray et al. (2009) seems to lack an industry perspective, as limited discussion can be found concerning the characteristics of the industry and we therefore propose the implementation of an industry angle in future research.

An additional finding relevant to Roza et al.'s (2011) research was that offshoring can be used as a cost- and resource strategy, as illustrated in all case companies. One case firm, Phases, which belongs to the small firm category, shows a prominent focus on utilizing offshoring as entrepreneurial strategies, whereas micro- and medium-sized case firms (Designit, Vertic, InSilico Aps) are driven by cost and resource factors. Two medium-sized case enterprises (Designit and Vertic) are following a relatively conservative sourcing approach, which is consistent with the empirical findings of Roza et al. (2011).

With regards to the entrepreneurial globalization concept of Rangan and Schumacher (2012), only one of the case enterprises, Phases, exhibits an extended set of entrepreneurial characteristics. The remaining investigated firms (i.e.: Designit, InSilico Aps, and Vertic) on the other hand are less entrepreneurial in terms of their sourcing strategies and thereby undertaking relatively traditional approaches to internationalize.

The paper in the end highlights potential implications for future research that could expand the understanding of sourcing processes in highly volatile environments. Managerial implications from the firm's perspective are also discussed for companies' future sustainable business growth.

Keywords: contingency theory, knowledge-intensive business services, global sourcing strategies, mobile application industry, two-stage strategic fit model, dynamic capabilities, entrepreneurial globalization, offshoring drivers