

Process Perspectives on Service Offshoring

Brandl, Kristin

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COPENHAGEN BUSINESS SCHOOL
HANDELSHØJSKOLEN
SOLBJERG PLADS 3
DK-2000 FREDERIKSBERG
DANMARK

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Process Perspectives on Service Offshoring

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Kristin Martina Brandl

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Process Perspectives on Service Offshoring

Kristin Martina Brandl

Supervisor

Professor Bent Petersen
Professor Michael J. Mol

Ph.D. School in Economics and Management

Copenhagen Business School

Kristin Martina Brandl
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Abstract

The global economy is perpetually changing to a highly knowledge-based economy in which services and especially knowledge-intensive services are increasingly offshored (geographically relocated) to emerging market economies such as India. This trend is interesting as for decades services had been characterized as intangible, perishable, heterogeneous and inseparable from their sources of origin making a geographic dispersion of service production and consumption unimaginable. Thus, the geographic relocation of the services is expected to infer organizational and operational reconfigurations also impacting the service production. The thesis studies these reconfigurations by questioning: *how does offshoring impact on the production of services.*

In order to capture the unique characteristics of services and provide a thorough understanding of the phenomenon, detailed and dynamic analyses of activities and actors through process perspectives are argued to be necessary. Process perspectives allow studying relationships between actions and individual actors from an organizational and operational angle. Two process perspectives are applied in this thesis in three independent research papers. The first research paper studies the *offshoring process* as a strategic and organizational change process that leads to a misalignment of components of a services production system and questions how this impact elicits a reconfiguration of the system.

The second and third paper investigates the *offshored production process* of knowledge-intensive services with a focus on actors in the processes and their activities. That is, the second paper questions how the increase of cognitive distance between actors inferred by offshoring changes the production of the services including costs and value outcomes. The third paper questions how offshoring impacts client co-production, i.e. the transfer and co-creation of knowledge, in a similarly designed service production process of knowledge-intensive business services. Collectively, this research shows that process perspectives on service offshoring are essential to study the impact of offshoring on service production. It also allows an understanding on the importance of actors and the causal links between them and activities.

Abstrakt

Offshoring, eller udflagnings, kan defineres som relokalisering af forretningsaktiviteter fra hjemland til udland. Det er en relativ ny tendens, at serviceydelser, især vidensintensive, i stigende omfang udflages til udlandet – ikke mindst vækstøkonomier som Indien. Serviceydelser bliver traditionelt karakteriseret ved deres uhåndgribelighed, flygtighed, heterogenitet samt uadskillelighed mellem produktion og konsumtion. Ikke mindst den sidstnævnte karakteristik har i mange år gjort det svært at forestille sig en geografisk adskillelse mellem produktion og forbrug af serviceydelser – især de vidensintensive. De overvejende statistiske tilgange til relokaliserings-fænomenet har ikke tilført forskningsfeltet en fuld forståelse af, hvad der karakteriserer effektive udflagningsforløb. Der argumenteres derfor for nødvendigheden af dynamiske proces analyser, som muliggør en detaljeret kortlægning af årsagssammenhænge mellem praksishandlinger og de udøvende aktører. PhD-afhandlingens primære mål er således at *forklare hvorledes udflagnings indvirkning på produktionen af serviceydelser.*

Til at forklare udflagningsdynamikken er anvendt to forskellige proces-perspektiver i afhandlingens i alt tre forskningspapirer. Det første forskningspapir studerer udflagningsprocessen som en strategisk og organisatorisk forandringsproces, der medfører en ubalance mellem serviceproduktionssystemet grundkomponenter. På denne baggrund, undersøges hvordan produktionssystemet omstruktureres i bestræbelsen på at genskabe den initiale balance mellem grundkomponenterne. Det andet og tredje papir studerer produktionsprocesser i forbindelse med udflagnings af vidensintensive serviceydelser med sine aktører. Begge processtudier anlægger et aktør-perspektiv. De to papirer adskiller sig ved henholdsvis at studere kognitiv distance og samproduktion mellem klient og serviceleverandør.

Tilsammen afdækker de tre studier dynamiske processer i udflagnings af vidensintensive serviceydelser, herunder kausalsammenhænge mellem aktiviteter og aktører foruden samspil mellem organisatorisk forandring og stabilitet i udflagningsprocessen.

Dedicated to my father.

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The papers in this thesis would have been much drearier without empirical information from my case companies located in Denmark, India, Switzerland, the Netherlands and the US. I thank them for sharing their knowledge and time with me as well as allowing me to study their ways of working. These research stays and data collection trips to India and various locations in Europe would not have been possible without the financial support of numerous institutions. I am very grateful for support by the Department of International Economics and Management at Copenhagen Business School, the Otto Mønstedts Fond and the Danish Ministry of Research, Innovation and Higher Education that awarded me the EliteForsk travel stipend.

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Kristin M. Brandl, Copenhagen, August 2014

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CHAPTER 1

Process Perspectives on Service Offshoring: A Research Agenda

Thesis Motivation

In 2003, The Economist published an article about service offshoring titled “*The shift of service jobs to low-cost countries has only just begun*” (The Economist, 2003a). The article drew attention to a reorganization of the world economy that presented a new generation of offshoring - the relocation of services across country borders and often to emerging market economies. Remarkable in this trend is that the relocation of work across national borders and for that matter across firm boundaries is anything like a novel phenomenon. The choice to relocate production of goods to a different location than its consumption and every so often to emerging market economies to capitalize, for instance, on lower labour costs, has been an established strategy for internationally-operating firms for decades (Contractor, Kumar, Kundu and Pedersen, 2011); why should service offshoring be any different? In its most basic sense, offshoring is simply a form of trade, which has been central to business for millennia. The division or contracting of work to the potentially best and most specialized individual, firm or nation arguably harks back to Adam Smith’s (1776) and Ronald Coase’s (1937) observations in their foundational works, respectively, *The Wealth of Nations* and *The Nature of the Firm*.

The attention to the phenomenon is undeniably caused by the shift from the offshoring of goods to the offshoring of services. Services had long been characterized as intangible, perishable, heterogeneous and inseparable from their source of origin (Parasuraman, Valerie and Berry, 1985), thus making a geographic dispersion of service production and service consumption inherently infeasible. For decades, offshoring of services was simply unimaginable. The characteristics of the services reflected a dependency on human capital and their knowledge stock, which could not be readily transferred across geographic borders. These challenges are even more elevated when considering highly

knowledge-intensive services, characterized by a high degree of tacit knowledge and customization as well as a strong dependency on knowledgeable and professional experts. Especially the immense difficulties and costs to generate, transfer, measure and protect tacit knowledge from exploitation (Mudambi and Tallman, 2010; Szulanski, 1996) countered the idea of offshoring the services for decades. The essential change that instigated service offshoring, especially of knowledge-intensive services, was initiated by a growing global managerial mindset following the dictum “*if you can do it next door, you can do it offshore!*” concomitant with additional global developments such as technological advancements that facilitate the transfer of knowledge across distance (Metters and Verman, 2008). This global trend of service offshoring, especially of knowledge-intensive services, has generated my interest and motivated this PhD thesis.

Thesis Objective

Service offshoring essentially implies the disintegration and transfer of services from one location, and maybe even organizational context, to another location, leading to organizational reconfigurations (Jensen, Larsen and Pedersen, 2013). Moreover, despite the process of disintegrating and transferring the services from the onshore location, the services then need to be integrated and effectively produced at the offshore location. If firms are unable to depict the right processes to be offshored (Aron and Singh, 2005) or are challenged in effectively integrating the operational procedures (Jensen et al., 2013) that are required for the production of the services, service quality or managerial and operational control is lost (Kumar, van Fenema and von Glinow, 2009; Lewin and Couto, 2006). Consequently, organizational change processes or effective integration of production processes play a central role of the effective production of offshored services.

However, we know little about these by offshoring-imposed processes and their impact on service production. Previous offshoring research predominantly took a static perspective and studied offshoring at a given point in time, either prospectively (e.g. the reasons for offshoring or organizational preparation) or retrospectively (e.g. the financial or strategic implications of offshoring). But such synchronic approaches do only capture snap-shots in time and fail to explain the

impact of these processes on services and especially knowledge-intensive services. A more detailed and activity driven perspective on offshoring is needed to study the impact of offshoring on services, for example through a focus on actors and their activities. Hence, the guiding research question of the thesis is:

How does offshoring impact on the production of services?

In order to answer this research question, dynamic and process oriented perspectives are necessary, as a question on impact and production indicates change and movement. Thus, processes involved in offshoring such as the *offshoring process* and the *offshored production process* of services are investigated. The *offshoring process* is defined as the process of transferring services to a foreign location, which has some, though not complete, parallels with transferring services to another firm (Mol, 2007). However, the emphasis of the thesis is on the geographic relocation of services across country borders, whether this is to firm internal or to firm external service providers. A perspective on the offshoring process allows studying organizational reconfiguration that infers a change of actors and their actions in the production of the services. Insights are gained on the activities and practices of actors and how the geographic relocation of the services impacts service production systems leading to novel findings with implications for the offshoring as well as services operations management literature.

The *offshored production process* focuses on the production process of the services and activities of actors in this process in an offshoring context. The perspective allows insights to be gained at the individual level, such as the cognition of actors. For example it allows studying the impact of cognitive distance between actors on costs and value creation in a production process, leading to novel insights on the micro-foundational level related to service offshoring. Furthermore, the interaction between service provider and client in the form of co-production of services can be studied through a focus on the production process. This research angle allows distinguishing between activities of actors that are part of the service production process and their importance in the process, providing novel findings as the distinction was often neglected in academic literature.

Both of these processes significantly impact the degree of success or failure of offshoring and emphasize the activities and actors, as well as the causal relationship between them. The so far taken static perspective to offshoring would not be able to provide these insights, thus in taking an activity driven and process oriented research approach to service offshoring novel contributions to academic literature are possible.

In sum, the objective of the thesis is to gain a more dynamic, comprehensive, activity-based perspective on service offshoring, especially of knowledge-intensive services. Through three research papers that investigate different aspects of service offshoring, draw on different theoretical fields, take different process perspectives, and apply different research methods this objective is achieved.

Thesis Contents

The remainder of Chapter 1 is organized as follows. First, the thesis is placed into a common context that applies to all papers. Two key contexts of the thesis, offshoring and services with special emphasis on knowledge-intensive services, are accounted for. After a summary of trends in these research areas and insights into the fields, a careful definition of terms situates the reader within the overall objective of the thesis. This section also includes a detailed discussion on the theoretical contribution of the thesis and how the three research papers depart from existing literature.

A discussion of the theoretical approaches to offshoring follows, focusing on why process perspectives are invaluable for analysing the phenomenon. The two primary bodies of literature that ground these process perspectives, namely process literature in organization and strategy and service production process literature are reviewed. The chapter is concluded with an elaboration of methodological approaches chosen in the empirical papers of this thesis followed by a summary of each paper.

Chapters 2 to 4 of this thesis include three distinct research papers that contribute to the overall thesis aim to study the impact of offshoring on service production. Table 1.1 represents the chapters, titles, co-authors and research questions that are answered in the papers. All papers apply different angles to offshoring and take

different process perspectives, i.e. Paper 1 studies the offshoring process while Paper 2 and Paper 3 consider the offshored service production process.

Table 1.1: Thesis disposition

Chapter	Chapter 2	Chapter 3	Chapter 4
Paper	Paper 1	Paper 2	Paper 3
Title	Rocking and Rebalancing the Boat: How Offshoring Elicits Reconfiguration of the Service Production System	So Far, yet so Near: The Effect of Cognitive Distance on Production of Knowledge-intensive Business Services	Client Co-production in the Production Process of Offshored Knowledge-intensive Services
Authors	Brandl, Mol, Petersen	Mol, Brandl	Brandl
Research question	How does offshoring of a service elicit a reconfiguration of its service production system?	How does an increase in cognitive distance, through offshoring, change the production of KIBS, including cost and value outcomes?	How does offshoring impact client co-production in the production process of knowledge-intensive services?

Paper 1 perceives offshoring as an exogenous shock to a service production system consisting of task executions, resources executing the tasks and service output received by the client. The study draws upon practice theory and provides a theoretical and empirical grounded explanation through a multiple case study of how service production systems are impacted by a misalignment of these production system components. The paper has wider implications for the offshoring literature in allowing a more thorough understanding on the impacts of offshoring especially on the offshored production of services. It contributes to an understanding of the impact of offshoring and to practice theory.

Paper 2 builds on economizing approaches and especially on cognitive distance to understand how cost and value outcomes of knowledge-intensive business services change with a geographic separation. Although conceptual in nature, an illustrative case supports findings on activity decomposability, firm experience, and repeated relationships as drivers of cost and value outcomes. This discussion helps to understand when offshoring may take place and also how service production processes change over time. The paper contributes to the understanding of offshoring and service operations as well as to debates about the merits of integrating cognitive and economizing perspectives. The overall outcome of the paper is an activity-driven framework of cognitively distant KIBS production.

Paper 3 empirically examines the impact of offshoring on the co-production activities by client firms in the production process of knowledge-intensive services. The research allows investigating the transfers and creation of knowledge in relation to the interdependent tasks of the production process. Through a qualitative multiple case study it is found that offshored knowledge-intensive services will at all times require client co-production and that service characteristics change over time caused by a natural progress through repetition and learning. The paper contributes to international service management literature with a detailed explanation where, when and how clients are part of a service production process across geographic distance and to knowledge management literature with a distinction between knowledge transfers and knowledge creation in this process.

The papers are ordered according to their research focus and process perspective. While Paper 1 analyses the services from a broader production system level and examines the transfer process more than the production process of services, Paper 2 and 3 study detailed activities and actors in the production process of the services. Paper 2 builds the bridge between Paper 1 and 3, as it acknowledges to some extent the transition process and considers the organizational implications of offshoring, yet predominantly takes a production process perspective of the services with an emphasis on actors. The final chapter of this thesis concludes findings and discusses theoretical implications of this work.

THESIS CONTEXTUALIZATION

What do we know about offshoring and services, especially knowledge-intensive services? In this section, both contexts are discussed and reviewed.

Foundational Facts about Offshoring

Academic researchers, policy analysts and the business press have defined offshoring in multiple ways (Mol, van Tulder and Beije, 2005; UNCTAD, 2004; Manning, Massini and Lewin, 2008) and numerous terminologies exist that have been used to explain similar activities such as “global sourcing” (e.g. Kotabe, 1992), “international outsourcing” (e.g. Mol et al., 2005) and “international sub-contracting” (e.g. Welch, Benito and Petersen, 2008). Essentially offshoring is “a special case of the more general concept of global distribution of work” (Kumar, van Fenema and von Glinow, 2009: 642).

Related to and sometimes confused with offshoring, are terms and concepts such as outsourcing or insourcing, terms that relate to the relocation of tasks and services across organizational borders not necessarily across geographic borders. The consideration to make or to buy products or services dates back to Coase’s (1937) make-or-buy decision process and deals with governance modes of the activities rather than location choices. Mudambi and Tallman (2010) extend this discussion to a make-buy-or-ally debate as firms increasingly choose to form alliances that neither reflects a clear-cut firm internal production of goods or services nor a firm external purchasing approach. The decision to offshore firm internally (referred to as captive offshoring) or to offshore to an external service provider (referred to as offshore outsourcing) (Manning et al., 2008; UNCTAD, 2004) is dependent on various factors, for instance, costs, organizational capabilities or geography, culture and institutions as found by Gooris and Peeters (2014).

When discussing offshoring in both academic and popular media forums, it is often described as having emerged in three consecutive waves (e.g. Kotabe and Mudambi, 2009). In order to understand service offshoring especially of knowledge-intensive services, I continue with a brief outline of the historic development of offshoring. The first wave of offshoring was put in motion in the

mid-1960s by multinational firms from mature market economies that geographically relocated standardized and labour-intensive production processes to countries with a large pool of low cost labour such as emerging or less developed market economies (Moxon, 1982; Maskell, Pedersen, Petersen and Dick-Nielsen, 2007). The main driver of these firms was to remain competitive in the global market with lower production costs of goods, under the premise that transaction costs to relocate the production processes did not equate to cheaper production costs (Lewin and Peeters, 2006). The access to new markets and the availability of resources were also important drivers to offshore the production of goods (Hutzschenreuter, Dresel and Lewin 2011; Lewin, Massini and Peeters, 2009; Martinez-Noya and Garcia-Canal, 2011).

During the mid-1990s, technological advancements in information and communication technology enabled a new and better organization of service tasks (Kenney, Massini and Murtha, 2009; UNCTAD, 2004), setting in motion a new wave of offshoring. The technological development enabled firms to rapidly relocate service activities around the globe and allowed standardized and commoditized services to be offshored (Dossani and Kenney, 2007; Lewin and Peeters, 2006).

Moreover, various changes parallel this trend: a) services became economically more important in the global business arena; b) the nature of services changed to more variety, innovation and sophistication; c) in developed economies, productivity in services grew less than in manufacturing, which, in turn, generated a need for service offshoring in order to save costs; d) firms increasingly looked for ways to decouple services production processes thereby ‘fine-slicing’ the value chain (Mudambi, 2008; UNCTAD, 2004). Most significantly, the managerial viewpoint regarding service processes changed and services were increasingly considered to be replicable. Metters and Verma (2008: 142) describe this change, “...it was previously viewed in virtually all businesses that the processes now being performed 12,000 miles away just *had* to be ‘down the hall’”.

According to Dossani and Kenney (2007), the implications of service offshoring to the global economy are more profound than those of the offshoring of production activities. Offshoring of labour-intensive and standardized services, such as IT services, call-centre services and data-entry services are representatives of this development (Dossani and Kenney, 2007). These services were often

“shared” services, which multinational operating firms needed for daily operations at several locations. Thus, the services became more and more commoditized and allowed firms to gain economies of scale through mass production. The preferred location choices for these services were, similarly to manufacturing offshoring, emerging markets such as India (Lewin and Couto, 2006; UNCTAD, 2004). The countries tried to become attractive locations to relocate the standardized services and supported the activities with governmental regulations that, for example, improved language capabilities of domestic staff or technological and communication infrastructure advancements (Metters and Verma, 2008).

The initial objectives of offshoring including cost reduction, shifted progressively towards the access to talent, knowledge and expertise (Levy, 2005; Manning et al., 2008, Lewin et al., 2009; Dossani and Kenney, 2007). Firms were increasingly looking to accumulate a bigger knowledge stock or search for the access to new knowledge not readily available in their domestic market (Youngdahl and Ramaswamy, 2008). Contractor, Kumar, Kundu and Pedersen (2010) argue that this organizational and geographic distant information could lead to valuable additional knowledge for the offshoring firm. The firms could also expand relational ties and service customers more effectively and leverage capabilities of partners (Di Gregorio, Musteen and Thomas, 2009).

This development progressed further towards even more advanced offshoring contexts, “service offshoring will not only affect routine work, but will also affect many formerly protected highly skilled and well compensated jobs” as Dossani and Kenney (2007: 777) remark. The recently developing third wave of offshoring pushes boundaries and illustrates that even knowledge-intensive, value adding and complex services that were previously infeasible to be offshored are increasingly geographically relocated. The shift gained so much attention that in 2004, the United Nations Conference on Trade and Development dedicated parts of its annual World Investment Report (UNCTAD, 2004) to the trend. The report conservatively estimated that the annual growth rate of imports to the US of knowledge-intensive and professional services averaged 13 per cent (from 1992-2002) accounting to a value of approximately 10.7 billion USD in 2002 (ibid.).

Furthermore, the services were increasingly sourced from emerging market economies such as India, despite traditional service offshoring locations, i.e. Ireland, Canada and Israel. Challenges for these economies are for example

challenges to secure a high skilled labour force and issues with establishing credibility in foreign markets (Bunyaratavej, Hahn and Doh, 2008).

These knowledge-intensive and customized services are more challenging to offshore than routinized, standardized and less customized services. The services require advanced skills at high levels of specialization and education by experts who provide the services (see more characteristics in the following section). Moreover, a majority of these experts need to be available at the respective offshoring location, which makes it challenging especially for emerging market economies that only recently started to emphasize and nurture domestic education levels (Metters and Verma, 2008).

Additional challenges are caused by operational issues including the inability to control operations due to a lack of a common language or significant cultural differences (Lewin and Peeters, 2006) and the dependency on the generation, transfer and protection of knowledge from exploitation and opportunistic behaviour (Tallman and Shenkar, 1994; Mudambi and Tallman, 2010; Kotabe and Mudambi, 2009). Inherent in offshoring is the reduced possibilities of internal innovation and learning (Murray, Kotabe and Westjohn, 2009; Kotabe and Murray, 2004). If these challenges are not overcome or effectively dealt with, consequences can be drastic and quality is compromised, much more than in a manufacturing or standardized services context (Dossani and Kenney, 2007; Sako, 2006).

Academics have recently expressed more interest in the phenomenon, concomitant with the growing importance of the services in the global business arena. For example, the *Journal of International Business Studies* published in 2009 a special issue on the offshoring of administrative and technical services with studies focusing on the reasons, benefits and location choices of offshoring. A major challenge in the field is the classification of knowledge-intensive, value adding and technical services due to the ambiguous, unique and diverse nature of the services. Although there have been attempts to clarify the characteristics of the services (see next section or e.g. Løwendahl, 2005; Mills and Margulies, 1980; Thakor and Kumar, 2000; von Nordenflycht, 2009), a general accepted characterization does not exist yet, which makes a consistent and generalizable research on the services challenging. More discussion on this issue can be found in the following section on foundational facts about services.

Research on Offshoring

Offshoring research falls into various categories that apply different theoretical stances to the phenomenon. Academic literature has tried to unravel the puzzle of offshoring through investigating the objectives of firms to offshore and what the benefits of offshoring are. Researches also questioned the implementation of offshoring in organizational contexts, predominantly from the side of the offshoring firm. Thus, we know much about the antecedents and reasons of firms' offshoring activities, for instance, what enables offshoring (technological and institutional enabler) (e.g. Dossani and Kenney, 2006; Manning et al., 2008) or what the motives and drivers are for firms to offshore tasks or services, i.e. efficiency-, market- or resource-seeking (e.g. Kedia and Lahiri, 2007; Martinez-Noya and Garcia-Canal, 2011; Javalgi, Dixit and Scherer, 2009; Hutzschenreuter et al., 2008).

Known are also financial benefits of offshoring, for instance, cost savings, performance implications, return of investments and hidden costs of offshoring (e.g. Bertrand, 2011; Dibbern, Winkler, and Heinzl, 2008; Larsen, Manning and Pedersen, 2013; Lewin and Peeters, 2006; Mol et al., 2005). On the other hand, non-financial performance outcomes of offshoring often relate to learning, implementation time, quality and safety (e.g. Aron, Bandyopadhyay, Jayanty and Pathak, 2008; Gray, Roth and Leiblein, 2011; Jensen, 2009; Nieto and Rodriguez, 2011). Furthermore, academics increasingly analyse the long-term effects of offshoring on performance outcomes, including product and process innovation (e.g. Bertrand and Mol, 2013; Nieto and Rodriguez, 2011) or focus on the organizational implications of offshoring activities (Jensen et al., 2013). These implications are for example dependent on governance modes (e.g. Jensen and Petersen, 2012; Lewin and Peeters, 2006; Youngdahl, Ramaswamy and Verma, 2008), location choices (e.g. Bunyaratavej, Hahn and Doh, 2007; Hahn, Bunyaratavej and Doh, 2011) or value chain activities (e.g. Mudambi, 2008; Mudambi and Venzin, 2010; Maskell et al., 2007).

Organizational implications literature in offshoring also considers the activities related to coordination (e.g. Dibbern et al., 2008; Kumar et al., 2009; Srikanth and Puranam, 2011) or skill-sets required to exercise the activities (e.g. Jensen and Pedersen, 2011; Nieto and Rodriguez, 2011), considerations that come close to the research focus of this thesis on factors of production activity and change. Similar

to Paper 1, this literature considers offshoring as an organizational reconfiguration in which tasks are geographically relocated leading to disintegration, coordination, and (re-) integration challenges.

However, offshoring was predominantly studied from a strategic and organizational perspective without much attention given to the operational levels and especially the services operational level in regards to offshoring. Thus, academic research knows comparably little about the impact of offshoring on service operations and all three papers of this thesis try to initiate a discussion. In order to allow a theoretical positioning of the thesis and its three papers, I continue with a more thorough review on various academic fields that studied offshoring and discuss how the papers of this thesis contribute to these. A wide variety of disciplines, including economics, economic geography, international business, organization theory, operations management and strategic management have studied offshoring. I discuss the most important theoretical stances taken to explain offshoring with an emphasis on service offshoring and explain how the papers of this thesis contribute to their respective research fields supported by tables.

Offshoring as the geographic relocation of work across country borders naturally was studied from an economic geography (Krugman, 1990) or global trade (Veron, 1966) perspective (see Table 1.2), investigating regions that provide the necessary resources, infrastructure and governmental / policy support to the offshoring industry (e.g. D'Agostino, Laursen and Santangelo, 2013; Jensen and Pedersen, 2011; Levy, 2005).

Location choices are also a central component in the international business field (see Table 1.3); for instance, Doh, Bunyaratavej and Hahn (2009) find that the location choice is strongly dependent on service characteristics (e.g. need for interactions, possibilities of repetition or innovation). Despite of location considerations, other major international business concepts such as ownership and internalization advantages (Dunning, 1980; 1981) were rarely applied to the offshoring context as Doh (2005) remarks. International business research is also founded on different concepts of distance that impact offshoring, for instance, cultural distance (e.g. Hahn and Bunyaratavej, 2010) and institutional distance (e.g. Bunyaratavej et al., 2007).

Cognitive distance was not much applied to the phenomenon with the exception of Bertrand and Mol (2013) who find that people perceive, interpret, understand and evaluate the world differently in an offshoring context. Paper 2 of this thesis contributes to the field in combining cognitive distance with an economizing perspective to investigate the offshored production process of knowledge-intensive business services. The paper contributes to this research field with insights that a combination of two rather contentious fields such as economizing and cognitive theories can generate complementary insights and that a micro-foundational, individually based analysis through the focus on cognitive distance between individuals can help understand firm level processes.

Table 1.2: A review of offshoring research - Economics

Academic field	Economics	
Theory	Economic geography	Global trade theory
Seminal work	Krugman (1990)	Vernon (1966)
Basic premises	Places and organizations cause global activities	Countries trade with specialized products/services
Application to offshoring	e.g. D'Agostino et al. (2013); Jensen & Pedersen (2011); Feenstra (2010)	e.g. Levy (2005)
Application to offshoring	Offshoring location choice is based on offshored business activities	Offshoring allows balancing market power among firms, workers, and countries

Table 1.3: A review of offshoring research – International Business

Academic field	International Business				
Theory	Cognitive distance	Cultural distance	OLI (Ownership, Location, Internalization)	Institutional distance	Liability of foreignness
Seminal work	Montello (1991); Nooteboom (2009)	Hofstede (1980; 1984); Shenkar (2001)	Dunning (1980; 1988); Buckley & Casson (1976)	Kostova (1999); Kostova & Zaheer (1999)	Zaheer (1995)
Basic premises	People perceive, interpret, understand, evaluate the world differently	Cultural dimensions of countries impact firms	Firms have ownership, location and internalization advantages	Regulatory, cognitive, normative institutions impact firms	Social and economic costs impact firms in foreign markets
Application to offshoring	e.g. Bertrand & Mol (2013); Mol & Brandl (Paper 2)	e.g. Hahn & Bunyaratavej (2010), Peeters et al. (2014)	e.g. Doh (2005); Doh et al. (2009)	e.g. Bunyaratavej et al. (2007), Gooris & Peeters (2014)	e.g. Bunyaratavej et al. (2007), Graf & Mudambi (2005)
Application to offshoring	Offshoring creates value but also a need for absorptive capacity	Offshoring location choices are driven or impacted by cultural dimensions	Offshoring allows gaining location advantages	Offshoring location choice is impacted by institutional environment	Offshoring location choice is impacted by familiarity of cultures, setting, markets

A widely used academic field to offshoring originates from the strategic management field (see Table 1.4). The strategic intention in sourcing of resources or knowledge and the reflection on costs is argued to be at the heart of offshoring activities. For instance, transaction-cost economics (Williamson, 1975; 1985) is employed to explain financial considerations of offshoring, studying the trade-off of transaction and production costs. Initially and especially when considering manufacturing offshoring, financial considerations were the main driver to offshore to countries that allowed production cost reductions through low cost labour or lower costs of resources. In a service context, lower costs is still a main driver but the characteristics of the services do call for additional considerations as for example the transfer of the services is more challenging due to the inherent knowledge dimensions of services (Ellram, Tate and Billington, 2008; Mudambi and Venzin, 2010).

Likewise, resource-based theory of the firm (Penrose, 1959; Barney 1991; Wernerfelt, 1984) is often included in this discussion to emphasize the strategic importance of resources (either natural or of human nature) and their availability in foreign markets; if resource endowment (production costs) is better offshore than onshore endowments, offshoring occurs. Moreover, the strategic configuration of the value chain of the firm (Porter, 1985) is part of the strategic management field and offshoring infers the slicing of a firm's value chain into separable units that are then disintegrated and relocated across country borders (Mudambi, 2008).

Similarly, organizational theory (see Table 1.5) and in particular, knowledge-based theory of the firm, as a determinant of competitive advantage (Grant, 1996; Kogut and Zander, 1992), was applied to the offshoring context. Paper 3 of this dissertation makes a contribution to this literature stream in distinguishing between the transfer of existing knowledge and the creation of new knowledge in the production process of knowledge-intensive services and the impact of offshoring on both activities. Especially the distinction between the activities and the interesting finding that knowledge creation is less impacted by offshoring than the transfer of knowledge is contributing to knowledge-based theory of the firm.

Offshoring has further organizational implications on the management of human resources (Lewin et al., 2009) or the alignment of these with organizational actions and practices (see Paper 1 of this thesis). Paper 1 of this thesis

distinguishes between these resources and their actions and discusses the management of these resources. Although the paper does not clearly state that it is contributing to the human resource literature, the management of these resources and allocation to the right practices is at the heart of the findings and has implications to this literature stream.

Table 1.4: A review of offshoring research – Strategic Management

Academic field	Strategic Management		
Theory	Resource-based view of the firm	Transaction cost economics	Value chain configuration
Seminal work	Penrose (1959); Barney (1991); Wernerfelt (1984)	Williamson (1975; 1985)	Porter (1985)
Basic premises	Production costs are heterogeneous across firms and locations	Firms minimize the sum of transaction and production costs	Value chains are decision support tools leading to competitive advantages
Application to offshoring	e.g. Kedia & Lahiri (2007), Jensen (2012)	e.g. Mudambi & Venzin (2010), Ellram et al. (2008), Murray & Kotabe (1999)	e.g. Mudambi, (2008)
Application to offshoring	Offshoring occurs when offshore resource endowment (production costs) is better than onshore endowment	Offshoring trades production costs for transaction costs	Offshoring implies the slicing, disintegration and relocation of value chain activities

Table 1.5: A review of offshoring research – Organization Theory

Academic field	Organization Theory		
Theory	Human resource management	Knowledge-based view of the firm	Practice theory
Seminal work	Schuler & MacMillan, (1984); Huselid (1995)	Grant (1996); Kogut & Zander (1992)	Whittington (1996); Feldman & Pentland, (2003)
Basic premises	Superior HR management results in competitive advantages	Knowledge is determinant of competitive advantage	Actors and actions/practices are aligned
Application to offshoring	e.g. Lewin et al. (2009)	e.g. Brandl (Paper 3)	e.g. Brandl, Mol & Petersen (Paper 1)
Application to offshoring	Offshoring enables access to human resources and their knowledge stock	Offshoring impacts knowledge and capabilities of firms	Offshoring causes the re-alignment of actors and practices

Less often used theoretical stances are in relation to operational consideration (see Table 1.6) and the management of production activities. The production or business process systems literature (Harrington, 1991) and supply chain literature (Simchi-Levi, 2005) studies chains of activities, viz. processes, also studied by Kumar et al. (2009) in an offshoring context. Also supply chain literature was applied to an offshoring context in studying its impacts on storing or moving of materials and resources across global borders (e.g. Apte and Mason, 1995; Hallowell, Bowen and Knoop, 2002).

Paper 2 and 3 of this thesis are situated in this literature field with a detailed and dynamic analysis on business and especially production processes of the offshored services. Both papers discuss a production process and distinguish the process into

five production stages. This distinction is novel and allows conceptualizing and studying the service production process in more detail. It also allows contributing with detailed information on the chain of activities and their outcomes in an offshoring context, allowing for a much more thorough understanding of the implications offshoring has on services.

Table 1.6: A review of offshoring research – (Service) Operations Management

Academic field	(Service) Operations Management	
Theory	Production /Business process systems	Service concept
Seminal work	Harrington (1991); Simchi-Levi (2005)	Goldstein et al. (2002); Machuca et al. (2007)
Basic premises	Production of a product/service follows a chain of activities	Production/delivery of services follows a chain of activities
Application to offshoring	e.g. Apte & Mason (1995), Brandl (Paper 3); Hallowell et al. (2002); Mol & Brandl (Paper 2)	e.g. Brandl (Paper 3), Brandl, Mol & Petersen (Paper 1), Stratman (2008)
Application to offshoring	Offshoring of service/production influence chains of activities	Offshoring impacts the design of services, their production and delivery

Service operations management research that studies service concepts (Machuca, Gonzalez-Zamora and Aguilar-Escobar, 2007; Goldstein, Johnson and Duffy, 2002) such as the production or delivery of services, has also been applied to an offshoring context investigating changing characteristics, design, production and delivery of the services (Stratman, 2008). Paper 1 and Paper 3 of this thesis acknowledge the service concept and contribute to this academic field with insights on the impact of offshoring on services, their characteristics and their production process.

Both papers provide a detailed analysis and discuss their significant contribution to the service operations management literature in an international context. Especially the distinction of the service production process into five production stages and how offshoring impacts each of this stage as done in both papers allows for a contribution to this rather under researched field. In Paper 3 the special focus on the geographically remotely located co-production of the client in the production process allows additionally for a great contribution, as actors and activities of actors are distinguished and elaborated on in more detail then previously done.

Foundational Facts about Services

Throughout the last decades, the service sector has grown rapidly and started to dominate economic activities in most advanced industrial economies. The World Trade Organization found that the service sector contributes to 72 per cent added value to the GDP of the EU-27 countries in 2012 and that approximately 65 per cent of the total population works in the service industry (WTO, 2013). This trend has slowly started catching up to emerging market economies such as India, where, for example, the IT sector became one of the country's most important industries (UNCTAD, 2004; Dossani and Kenney, 2007). Moreover, manufacturing industries have experienced a servitization of activities mainly due to increasing technological advancements leading to reduced manual work and shifting importance towards services around production and retailing of goods. This shift also led to an increasing importance of service studies on a wide variety of firms, industries and economies (Machuca et al., 2007).

In a service context with no clearly defined and often unquantifiable inputs and outputs such as the inherently intangible concept of knowledge, finding a universally accepted definition and classification of services has been a challenge to academic literature for years. For instance, Starbuck (1992) outlined in the early 90s that there was no consistent definition of services and specifically referred to the varying degree of knowledge intensity of the services that make a consistent definition of characteristics infeasible. He recognized challenges to distinguish knowledge-intensive, professional and information-intensive firms, particularly differentiating knowledge as a physical capital, social capital, and routine or organization culture. These challenges have not changed till today and as a

consequence, I briefly discuss various definitions and characterizations of services in general before explaining characteristics of knowledge-intensive services that are important to the thesis.

As services do not have clearly defined inputs and outputs such as in the production of goods, various bodies of literature designed ways and concepts to classify services based on different indicators (see Silvestro, Firtzgerald, Johnston and Voss, 1992 for a detailed summary). For example, in the operations research field, Chase (1977; 1981) distinguishes services according to the customer contact needed in the service production process, i.e. front office services at bank counters and hair salons that often require intensive and direct client interaction, or back office services such as postal services with less intensive and direct interactions. He employs a quantifiable method based on time to measure the degree in which the customer is in direct contact with the service provider relative to the total time the provider needs to produce the service.

Other researchers take a less quantified approach to the activities and distinguish between the degrees of customization (high and low) (Grönroos, 1978; Maister and Lovelock, 1982) or knowledge-intensity (Alvasson, 2001). Then again others define according to the focus on people or equipment (Thomas, 1975), according to service outputs, i.e. processes or products (Johnston and Morris, 1985), or define service as a combination of processes, people skills and materials (Goldstein et al., 2002). Each of these attempts leads to some difficulties in clearly defining service characteristics as the degree and intensity of each of these attempts can vary significantly challenging the idea to develop one unified way of defining services. For instance, services have varying grades of customization, can mix process and product outputs or are based on peoples and equipment simultaneously.

Moreover, most services are based on some kind of knowledge and any evaluation of knowledge 'intensity' is often easily contested (Alvasson, 2001). There is a perpetual design and development of new services that make it difficult to generalize services in the long run and predict developments in the future. Thus, academic studies on services and especially knowledge-intensive services need to define the services or are often accompanied by a (detailed) discussion on the characteristics of the services, even research that remains on the firm level.

Consequently, it is challenging to define and characterize services and research needs to define the type of services or service firms under study. Having said this, I believe that more research is needed that does not shy away from these challenges. Services and especially knowledge-intensive services represent a new knowledge-based economy into which the global economy is slowly changing into (e.g. Empson, 2001; Løwendahl, Revang and Fosstenløkken, 2001; Gardner, Anand and Morris, 2008; Greenwood, Li, Prakash and Deephouse, 2005). Thus, in studying services, including knowledge-intensive services, insights can be gained that impact a wide variety of business actors. I also argue that studying especially challenging and unique cases such as knowledge-intensive services allows for interesting and valuable insights that will become increasingly important in future. Consequently, the services of interest to this thesis are predominantly knowledge-intensive services (especially Paper 2 and 3) that are different to simple, standardized services with a far reaching impact and effect on a variety of actors, industries and economies.

I follow a definition of knowledge-intensive services by Bettencourt, Ostrom, Brown and Roundtree (2002: 101), who state that these value-adding service activities consist of “the accumulation, creation, or dissemination of knowledge for the purpose of developing a customized service [...] to satisfy the client’s needs”. The definition emphasizes several main characteristics of the services. First, the services consist of tacit knowledge that needs to be accumulated, created and disseminated in the production process by professional and knowledgeable experts. This dependency also leads to socially constructed, context specific, and ambiguous dimensions of the services (Alvesson, 2004; Tsoukas and Vladimirou 2001; Starbuck, 1992). Second, educated employees, who are commonly linked to academic research and have systematic knowledge in their areas of expertise, produce the services (Bettencourt et al., 2002; Løwendahl et al., 2001).

This knowledge specialization and expertise is also instigating a high degree of information asymmetry between the client and the service provider generated through human skills, management capabilities and knowledge stocks of experts (Quinn, 1992; Prahalad and Hamel, 1990). These experts are the most important resource for the firms and infer a certain degree of authority. Third, the services are highly customized and require interactions between client and service provider (Edvardsson, Gustafsson and Roos, 2005; Roth and Menor, 2003; Maister, 1993; Maister and Lovelock, 1982). According to Løwendahl et al. (2001), the degree of

customization in knowledge-intensive services is dependent on the services offered. High degrees of customization also imply that the concepts of generalization and standardization are challenged in a knowledge-intensive service context and that each service is individualized, disallowing routines when producing the services (Maister 1993; Løwendahl et al. 2001).

Due to this customization it is argued that the services are dependent on the active participation by the client in the production process (see Paper 3; Edvardsson et al., 2005; Maister and Lovelock, 1982; Schein, 1990; Schön, 1983). These characteristics result in a value creation logic of the services that aims to provide clients with solutions to problems as well as reduce uncertainties (Normann and Ramirez, 1994; Wittreich 1966). The services reflect task interdependencies and especially reciprocity of activities. Fixed sets of clear distinguishable sequential activities that enable firms to produce a service in large numbers through standardization, routinization and generalization is improbably achieved in a knowledge-intensive service context (Løwendahl et al., 2001; Larsson and Bowen, 1989).

Research on Services and Knowledge-intensive Services

Research on services and especially knowledge-intensive services can be found across various academic fields in which predominantly firms that produce the services are studied and not the services themselves (e.g. Alvesson, 2000; Hitt, Biermant, Shimizu and Kochhar, 2001; von Nordenflycht, 2010). Numerous of these studies are conceptual and try to define knowledge-intensive, value-adding and professional service firms (e.g. Mills and Margulies, 1980; Thakor and Kumar, 2000; von Nordenflycht, 2010).

The newest addition to this literature by von Nordenflycht (2010) has widely been recognized as the latest research for orientation purposes. I use von Nordenflycht's (2010) examples of professional and knowledge-intensive services. He emphasizes knowledge intensity, low capital intensity and a professionalized workforce / knowledgeable experts as distinct characteristics of firms that produce knowledge-intensive services and cites as examples, accounting, legal, consulting (IT, HR, technology, engineering), advertising / marketing, architecture, research and analysis, and financial services (e.g. investment banking) firms among others.

Knowledge-intensive services share many similarities with professional services and researchers have often used these terms interchangeably. Starbuck (1992) as well as Bettencourt et al. (2002) argue that professional services are a sub-category to knowledge-intensive services and are considered a special kind of the services with an emphasis on professionals and their activities. While knowledge-intensive services can also be produced in-house, professional services imply that the services are produced by external professional service firms (PSFs) that have an ethical code to serve the client without self-interest, the professions cohesion, collegial enforcement of standards, and autonomous professionals (Starbuck, 1992). According to Løwendahl (2005), a firm belongs to the category of PSFs if the firm's majority of service offerings are professional services, which is the reason why I preferred the term knowledge-intensive services, as this criterion was not met in most of my studies.

I proceed with a discussion on the different academic fields and theories in which knowledge-intensive services were studied so far. Included in this discussion are explanations on how the papers of this thesis add and contribute to different theoretical fields, similar as done in the previous section on offshoring.

The theoretical application of knowledge-intensive services is found in the organization theory field (see Table 1.7). Due to the characteristics of the services, to be dependent on knowledgeable experts, theories around the management of knowledge and human resource are at the heart of discussions (Alvesson, 2000; Larsen, 2001). Moreover, the knowledge-based view of the firm (Grant, 1996) is used to examine the importance of knowledge transfers and creations beyond just being a competitive advantage (Empson, 2001; Løwendahl et al., 2001; Morris and Empson, 1998). Knowledge is the most important core competence of the firm and essential for knowledge-intensive services (as the term already emphasizes).

Table 1.7: Overview of the research on services and knowledge-intensive services (KIS) – Organization Theory

Academic field	Organization Theory			
Theory	Human resource management	Innovation management	Knowledge-based view of the firm	Practice theory
Seminal work	Schuler & MacMillan, (1984)	Abernathy & Clark (1985); Burns and Stalker (1961)	Grant (1996); Kogut & Zander (1992)	Whittington (1996); Feldman & Pentland, (2003)
Basic premises	Firms gain and retain competitive advantages through superior human resources	Firms respond to conditions of stability and change	Knowledge and capabilities cause sustained competitive advantages	Dualities of actions/practices stability/ change
Application to KIS	e.g. Alvesson (2000); Larsen (2001)	e.g. den Hertog (2000), Muller & Zenker (2001)	e.g. Empson (2001); Løwendahl et al. (2001); Brandl (Paper 3)	e.g. Brandl, Mol & Petersen (Paper 1)
Application to KIS	KIS are dependent on allocation, training and management of knowledgeable employees	KIS firms are seen to function as facilitator, carrier, source of innovation	Knowledge/ capabilities are central to KIS beyond being competitive advantages	Actors producing KIS influence practices with actions

Paper 3 of this thesis contributes to this literature streams with a distinction of the transfers and the creation of knowledge in the production process of the services. The paper distinguished between actors and their roles within the production process and focuses thereby predominantly on the activities of clients and their co-production of the services through interaction with experts of the service provider.

A similar emphasis on individuals and especially the knowledgeable experts is evident in theories that apply strategic management concepts to knowledge-intensive services contexts (see Table 1.8). Research uses a resource-based view of the firm (Penrose, 1959; Barney, 1991; Wernerfelt, 1984) to study knowledge-intensive services, especially the knowledgeable experts of the services (Hitt et al., 2001). The strategic consideration is how to retain and develop resources firm internally or acquire the right resources firm externally; considerations that are also somewhat related to transaction cost considerations (Ellram et al., 2008).

Table 1.8: Overview of the research on services and knowledge-intensive services (KIS) – Strategic Management

Academic field	Strategic Management	
Theory	Transaction cost economics	Resource-based view of the firm
Seminal work	Williamson (1975; 1985)	Penrose (1959); Barney (1991); Wernerfelt (1984)
Basic premises	Firms minimize sum of transaction and production costs	Production costs are heterogeneous across firms and locations
Application to KIS	e.g. Ellram et al. (2008)	e.g. Hitt et al. (2001)
Application to KIS	KIS emphasize production costs over transaction costs	For KIS, human resources moderate strategy and firm performance

Most important for this thesis is however, the operations management related research field (see Table 1.9). All three papers of this thesis study the service concept one-way or the other. The general perspective that services operate according to a chain of activities to produce and deliver services (Machuca et al., 2007; Goldstein et al., 2002) is reflected in all three papers. While Paper 1 studies the service production system of services in general also including several more knowledge-intensive services, Paper 2 and 3 focus on the service production process of knowledge-intensive services. Thus, Paper 1 contributes to this literature field with the development of a service production system that distinguished between the execution of tasks, the resourced that execute the tasks and the output of tasks of the services.

Table 1.9: Overview of the research on services and knowledge-intensive services (KIS) – Service Operations Management

Academic field	Service Operations Management	
Theory	Service concept	Service innovation / new service development
Seminal work	Goldstein et al. (2002); Machuca et al. (2007)	Miles (2005); Edvardsson & Olsson (1996)
Basic premises	Services operate according to a chain of activities in production / delivery	Innovation of new services, new service processes or new service firms
Application to KIS	e.g. Brandl (Paper 3); Brandl, Mol & Petersen (Paper 1); Mol & Brandl (Paper 2)	e.g. den Hertog (2002) Miozzo & Grimshaw (2005)
Application to KIS	KIS have special designs, production processes and service deliveries	KIS are facilitator, carrier or source of innovation

Paper 2 and 3 take a more production process oriented perspective and contribute with a detailed outline of activities in the production process and of actors that are part of the production processes. Seeing these production processes in an international context and distinguishing among individual actions significantly contributes to this literature with new insights and a broader applicability of the literature stream. Moreover, imperative in an organizational context is the design and innovation of new services in order to adapt to stable or changing conditions. These innovations could lead to competitive advantages and diversification factors and is often referred to as new service development (NSD) (den Hertog, 2000; Froehle, Chase, Roth and Voss, 2000).

Research fields in relation to knowledge-intensive services that are of importance to this thesis and have been taken into account as underlying concepts, are research that uses economics and international business theory (see Table 1.10). Economic geography for example studies the location that enables the production of services or knowledge-intensive services (e.g. O'Farrell and Moffat, 1995); Keeble and Nachum, 2002) for example the necessary infrastructure or resources. Similarly, the different types of market entry modes (Erramilli and Rao, 1993) or the impact of cultural distance (Voss et al., 2004; Donthu and Yoo, 1998) impact these location choices. The papers of this thesis do not directly claim to make a strong contribution to these literature streams. However, each paper implies an international business angle through the offshoring context and contributes to these literature streams (see discussion on offshoring above).

Table 1.10: Overview of the research on services and knowledge-intensive services (KIS) – Economics and International Business

Academic field	Economics	International Business	
Theory	Economic geography	Market entry modes	Cultural distance
Seminal work	Krugman (1990)	Agarwal & Ramaswami (1992); Kogut & Singh (1988)	Hofstede (1984); Shenkar (2001)
Basic premises	Places and organizations cause global activities	Risks, control, return on investments and resources lead to different market entry modes	Different cultural dimensions of countries impact firms
Application to KIS	e.g. O’Farrell & Moffat (1995); Keeble & Nachum (2002)	e.g. Erramilli & Rao (1993)	e.g. Voss et al. (2004); Donthu & Yoo (1998)
Application to KIS	KIS firms can be positively and negatively impacted by geographic dispersion	KIS firms choose market entry modes mainly based on the inseparability of the services and their clients’ activities	Cultural differences impact the perception of service quality in knowledge-intensive services

RESEARCH PERSPECTIVES

This section outlines the chosen research perspectives that allow studying the processes imposed through offshoring. First, the ontological and epistemological doctrines of process philosophy are discussed, followed by an explanation of the importance and history of process research and a discussion on two process perspectives that are applied in this thesis.

Process Philosophy

Process philosophy is founded on the premise that ‘being’ (the ontological constitution of the word) is dynamic and that the dynamic nature of ‘being’, viz. ‘becoming’, should be the primary focus of any comprehensive philosophical account of reality. This is counter to the static reality of Western metaphysics that see dynamic features only as appearances and ontological inferior. Thus, process philosophy describes truth as movement and change in and through factors (referred to as the Hegelian truth), in comparison to fixed concepts or ‘things’ (Aristotelian truth) and is characterized by its importance of activities accompanied by notions such as time, change, and innovation. It questions the changing role of mind, the uniformity or non-uniformity of activities, and varieties of ‘becoming’, all indicators that lead to an emphasis on change over stability, novelty over uniformity, and becoming over being (Styhre, 2002).

Process philosophy draws upon Hellenic philosophers that postulate that reality constitutes as a result of the multiplicity of processes such as Heraclitus who claimed “dictum panta rei” (everything flows). Accordingly, modern process philosophers such as Henri Berson, Alfred North Whitehead and William James do not deny substances, such as things, but see them as subordinate in status and ultimately part of processes. Thus, what ‘things’ are to processes is in terms of what they do. Whitehead (1929) explains in his book, *Process and Reality*, that processes must be prioritized over things and activities over distances. Rescher (1996: 28, emphases added) summarizes theses basic ideas into the two propositions “*things* cannot do without *processes*. Since substantial things change” and “*processes* are more fundamental than *things*”. Since substantial things emerge in and from the world’s course of changes, processes have priority over things.

Although this philosophical doctrine is the basic assumption for the thesis and guides all three papers, it is not my intention to advocate process philosophy as the ‘one and only’ philosophy, however, it does underlie the process perspective taken in this thesis. These considerations can then result in process models or indicate process methods but do not inevitably do so.

The fundamental distinctions between processes and things are the question of production and transformation, rejecting stability and persistence over change and development. Table 1.11 summarizes the differences between philosophical epistemologies that emphasize substances and things versus process philosophy. It becomes clear that process philosophy emphasizes activities, actions and causality. Consequently, processes can only be considered as a whole where each part is dependent on other parts. This also leads to the novelty and uniqueness of processes in contrast to uniformity and homogeneity of things and substances. Processes can be identified by its constitution of patterns and sequential and complex occurrences. It is a unity of distinct stages or phases that have temporal coherence and integrity. Through the structure of the process, specifically the patterning of occurrences, a temporal dimension is included that exhibits some form of fixed format (Rescher, 2000).

Table 1.11: Substance vs. process philosophy

Substance philosophy	Process philosophy
Emphasizes discrete individuality	Emphasizes interactive relatedness
Emphasizes separateness	Emphasizes wholeness (totality)
Focus on a condition	Focus on activities and actions
Uniformity of nature	Novelty of nature
Passivity (being acted upon)/stability	Activity (agency)/change
Being	Becoming

Source: adapted from Rescher (1996).

Processes generally involve human agency, which are needed to execute activities and actions. Certainly there are processes that are not based on actors and merely transform states of affairs such as earthquakes and windstorms (Rescher, 2000). However, in this thesis, I focus on human agency as in all three papers of the thesis human agency (individuals or groups of individuals) play a major role. Similar to Rescher (2000), I assert that processes and patterns of processes by either individual actors or a group of actors, i.e. patterned into skills or capabilities, are based on characteristics that define individuals.

Furthermore, I maintain that actions are conducted either intentionally by individuals / groups of individuals or by practices that are in turn results of intentional actions. These actions are based on acquired knowledge of the individual. I contend that the knowledge is not a product but rather, a process as it is not stable, novel and emerges in phases and stages through processes. In conclusion, process philosophy is an ontological and epistemological dogma that should not be mistaken with, for instance, process models that are applied when static and linear models are not satisfactory. It is a philosophical category that is neither a theoretical nor a methodological or primarily practical concept, yet is a philosophical doctrine that captures a dynamic and temporary quality of 'becoming' implying ontological and epistemological explanations.

Process Research

Process philosophy can be applied to a variety of different contexts and theoretical concepts beyond disciplines, for instance, evolutionary biology, history, industrial development and physics, to mention just a few. Some of these process perspectives even spanned across disciplines such as Van de Ven and Poole's (1995) process perspectives on firm strategies using Darwin's evolutionary biology theory of variation-selection-retention. Additionally, there has been a distinct research focus on process perspectives in management research.

Operations management related research takes a process perspective to study the production process of goods or services in supply chains (e.g. Woiceshyn and Falkenberg, 2008). Strategic management research studies changing strategies applying process perspectives (Styhre, 2002). Even international business theory has used process perspectives such as in the seminal work of Johanson and Vahlne

(1977) and their study on a firm's gradual internationalization process. This widespread use of process perspectives reflects the importance and vast possibilities in applying the perspective to a research context. Styhre (2002) argues that a process philosophical stance to management research allows for a more applicable framework in understanding challenges such as with dispersed, disintegrated and reconfigured organizational activities of firms, as evident in service offshoring.

However, researchers have often shied away from recognizing the benefits of process philosophy and mainly focused on established traditional philosophical doctrines that assume stability and unification, according to Aristotle. Specifically in relation to the fields of international and strategic management, process philosophical research is scarce (Styhre, 2002). One reason for the lack of research are for instance challenges when explaining process perspectives (Szulanski, Porac and Doz, 2005) as the term 'process' is used in a variety of different ways often without a consistent definition. Langley (2007) emphasizes the dynamics of the phenomenon in using expressions such as 'activities', 'movement', 'events', 'temporal evolution' and 'change' similar to the general definition of the term in the Oxford Dictionary, i.e. a process is '*a series of actions or steps taken in order to achieve a particular end*'. This thesis contributes to the lack of process perspectives in international management and more specifically, in offshoring research, and in services (operations) management research.

Various different process perspectives exist and can be applied to management literature. The thesis focuses its attention on transformation processes that are reflected in organizational or strategic change processes and service production processes. These process perspectives provide the possibility to look at causal and detailed levels of activities and allow dissecting activities into stages and tasks.

Process Perspectives in Organizations and Strategy

The offshoring process reflects a strategic choice of a firm to globally relocate services based on considerations related to investments, resources, governance structures, culture, infrastructure and regulatory issues. The process implies change, for instance the disintegration, transition and / or reintegration of tasks inflicting modification on the organization and the service. In order to explain the

impact of change, I draw on concepts related to organizational and strategy process literature (e.g. Langley, 1999; Pettigrew, 1992; Van de Ven, 1992).

From the initial static and narrow views, process research recognizes the implicit nature of processes to be dynamic through organic perspectives (Farjoun, 2002), evolutionary processes (Barnett and Burgelman, 1996; Burgelman, 1991) or iterative resource allocations (Noda and Bower, 1996). Various fields have capitalized on this work, i.e. related to internal corporate venturing (Burgelman, 1983) or management innovation (Birkinshaw, Hamel and Mol, 2008). A research focus that has not received much attention within the field is process implementations (Hutzschenreuter and Kleindienst, 2006).

I adopt Langley's (2007) conceptualization of processes and emphasize actions and practices of individuals and change on an organizational level when considering processes in the papers of this thesis. Additionally, I emphasize the sequential nature of these process stages and the causality of events. This connects to Van de Ven (1992) who discussed the sequential approach of events or activities to describe a process of change over a certain period of time or represent an underlying pattern of cognitive transition when dealing with problems. It is expected that as a result of predetermined factors and pre-programmed forces of external or internal nature, the stage model describes a developmental history that is influenced and changed by unforeseen environmental interactions (Melin, 1992).

Important for this conceptualization of processes is also the emphasis on actions and practices. These actions and practices are reflected in practice theory (e.g. Whittington, 1996; Jarzabkowski, 2003; Orlikowski, 2007; Feldman and Pentland, 2003; Feldman and Orlikowski, 2011), a discipline "that sees the world as an ongoing routinized and recurrent accomplishment" (Nicolini, 2012: 3). Practice theory emphasizes agents / individuals such as managers and structures that exist on an organizational level, perceiving them as a duality rather than a contradiction (Feldman and Orlikowski, 2011). Both, agents and structures, mutually reinforce each other. Moreover, practice theory implies inertia (Feldman and Pentland, 2003), also inferring that routines are implicated in organizational change as evident in Paper 1, where a routine, i.e. a service production system changes through offshoring.

Service Production Process Perspectives

Following the strategic offshoring process, I additionally chose to focus on the production process of the offshored services. This perspective allows investigating how a geographic relocation of the services impacts the production of the services. I maintain that in examining the service production process in detail, taking geographic dispersion into account, I am able to provide a thorough analysis of the offshoring phenomenon of services and especially knowledge-intensive services. The unique characteristics and design of services play a significant role in taking this perspective. As previously discussed, the services are unique in their production and delivery. A focus on different stages and tasks of the production process allows studying service operations of knowledge-intensive services in more detail.

Production and operations management literature, especially services operations management (SOM), have taken such perspectives and study the services production system including design and production processes of services (Silvestro et al., 1992). However, the research area has not received as much attention in academia as operations management researchers anticipated (Machuca et al., 2007; Roth and Menor, 2003). More recently, Machuca et al. (2007) reviewed service operations management research of all leading operations management journals and found that service operations management lags significantly behind, specifically in regards to the design of service operations. Moreover, the authors found that only 0.6 percent of the found research papers include an international business context. Roth and Menor (2003) found a similar lack of research in global SOM and called for more up to date and international SOM research. It is expected that a reason for the lack of research is accounted to the historically more important manufacturing sector.

SOM research focuses on questions such as how services will be produced and delivered, what expectations the client has, how and what the client contributes to the services and what value the services have to clients and providers. The challenge of SOM research is partly to combine the provider's strategic intent and the client's needs and to outline these features combined at the design of the services. This service design is the foundation for the service production and delivery system and provides the framework for the service evaluation during the entire service production process. It is also the foundation for the competitive

advantage of the service provider and consequently, includes strategic considerations (Goldstein et al., 2002).

Goldstein et al. (2002: 121) argue that in comparison to manufactured products, the components of services are often intangible but also dependent on “a combination of processes, people skills and materials that must be appropriately integrated to result in the ‘planned’ or ‘designed’ service”. Although the services consist of various components and processes, the end service is often perceived to be one service, delivered either as components or as a service package, where service provider and clients perceive the service in different ways. While the service provider likely sees the service as several components and processes, the client perceives the service as one singular outcome (Goldstein et al., 2002).

In comparison to manufacturing processes that are often highly codified, service production processes, especially of knowledge-intensive services, are different. In order to avoid the challenges in using a manufacturing model in a service context, I capitalize on models and frameworks that reflect service production processes. I particularly choose one model that is used in order to outline the production process of knowledge-intensive services (see Paper 2 and 3), the value shop (Stabell and Fjeldstad, 1998). Thus, Stabell and Fjeldstad (1998) designed a model that integrated the production process of knowledge-intensive services, as primary activities, as well as support activities using parts of Thompson’s (1967) findings of intensive technology services. While the primary activities focus on the five production stages, *problem-finding and acquisition*, *problem-solving*, *choice*, *execution* and *monitoring and evaluation*, the support activities include the organizational level, considering the firms infrastructure, human resource management, technology development and procurement.

The stages have a high degree of reciprocal interdependence and an iterative process structure and are set-up in a cyclical form; each output can become the input of a new cycle (Stabell and Fjeldstad, 1998). The primary activities of this framework are very similar to other service production processes discussed in academic literature (e.g. Aarikka-Stenroos and Jaakkola, 2012; O’Farrell and Moffat, 1991). Aarikka-Stenroos and Jaakkola (2012) use a similar five-stage production model (problem diagnosis, designing and producing the solution, organizing the process and resources, managing value conflicts and implementing the solution) to discuss value co-creation in knowledge-intensive business

services. Similarly, O'Farrell and Moffat (1991) design a service production process that includes interaction activities of service provider and client in professional services in 12 consecutive production stages.

THESIS METHODS AND DESIGN

After having discussed the philosophical stance, including underlying ontological and epistemological doctrines, the following section accounts for a general discussion on the chosen research methods of the research papers included in this thesis and provides a summary of the three papers.

Research Methods

Each of the three research papers of this thesis is an independent research that answers a distinct research question, and takes a specifically suitable research approach. Two of these papers (Paper 1 and 3) are empirical and one paper is conceptual in nature but uses an illustrative case (Paper 2). The discussion on applied research methods will remain general and reviews the overall research approach chosen to study process research. More detail on the data sources and analysis approach are provided in each paper. The aim of the thesis is to find the impact of offshoring on service production studying two processes, entailing both processual and evolutionary components, underlying the premises that temporal and spatial factors influence the phenomenon.

To enable this dynamic perspective, a process philosophical stance was chosen that implies the ontology of ‘becoming’ rather than a more static perception of ‘being’. This ontological position requests an epistemology that allows the generation of knowledge through process methodological approaches. Consequently, qualitative case study methods are used in both empirical papers of the thesis. Case studies allow examining a phenomenon in its naturalistic context that consents to confronting theory with empirical data and reveals the phenomenon under study (Welch, Piekkari, Plakoyiannaki and Paavilainen-Mäntymäki, 2011).

Neither the international business nor the operations management and strategic management fields have published much qualitative case study based research. Despite the publications of special focus papers and special issues including calls for more qualitative research papers in major journals of each field (e.g. Journal of International Business Study – Birkinshaw, Brannen and Tung, 2011; Journal of Operations Management – Stuart, McCutcheon, Handfield, McLachlin and

Samson, 2002; Strategic Management Journal - Gibbert, Ruigrok, Wicki, 2008), published qualitative and case based research remains meagre to present. With the papers of the thesis, I attempt to provide sound, reliable and valid qualitative research that responds to this call.

Reasons for a lack of qualitative research are often referred to the difficulties in conducting reliable and (construct, internally or externally) valid qualitative academic research and some of its limitations, such as the limited generalizability of findings. The following section briefly discusses these general characteristics of qualitative case study research in comparison to other research methods.

Of foremost importance is the aspect that rather than testing existing theory and the applicability of existing models as predominantly done in quantitative researches, qualitative case study research aims to develop new theory or further existing theory (Welch et al., 2011). Moreover, the research method allows studying the cause-of-effects (Ragin, 2009) rather than the more positivistic effect-of-causes (Mahoney and Goertz, 2006).

Thus, causation or even multiple causations (several causal paths are expected to come to the same conclusion) are possible to be studied through qualitative (case study) research methods. However, qualitative research is restricted when outlining average effects across a large population of cases for generalization of findings. It allows some generalization to the chosen research population (Eisenhardt, 1989) or to theory (Yin, 2003), but the selection of cases is seldom random and based on independent variables as argued to be necessary for a generalization to larger populations. Moreover, observations are not treated equally in qualitative research which allows choosing specific cases selected to reflect a certain aim, also placing special attention on cases that are unique and do not conform. This nonconformity of cases allows for closer examination and explanations, but not for generalization (Mahoney and Goertz, 2006).

Consequently, qualitative and quantitative research methods have advantages and disadvantages and are chosen for different purposes and research aims. For the empirical papers of this thesis, I chose qualitative case study research methods for the following reasons. First, qualitative research methods allow detailed insights and descriptions of “a contemporary phenomenon in depth and within its real-life context especially when the boundaries between the phenomenon and context are

not clearly evident” (Yin, 2003: 18) as is the case in this thesis. It allows confronting theory and developing it further by gaining a holistic understanding of a complex, context dependent and especially dynamic phenomenon (Welch et al., 2011). The possibility to gain a holistic and broad understanding is essential when studying a new and especially dynamic concept such as service offshoring.

Second, qualitative research captures the richness of organizational life and social behaviour on multiple levels (Frederickson, 1984), which is an important factor in the context of services with its dependency on human resources. Finally and most importantly, qualitative case study research is argued to be inevitable to research that implies a process philosophical stance (Schendel, 1992; Van de Ven, 1992, Langley, 1999, Pettigrew, 1992). Moreover, process research is very contextual in nature and an analysis on different (process) tasks and their interdependencies is required (Van de Ven and Poole, 2005).

This requirement is arguably only possible through qualitative case study research that allows studying causal links of actions also in relation to actors. Pettigrew (1992; 1997) claims that process research requires a full understanding of the complexity of the activities through a detailed view that allows for causation of activities and additionally enables deep insights into the phenomenon. Thus, both empirical papers of this thesis apply a narrative and temporal bracketing strategy that allows outlining the phenomenon in detail (Langley, 1999) including the possibility to breakdown these activities into phases or production process stages. Although, this strategy shows the impact of actions in consecutive phases and reflect a high accuracy to capture the phenomenon, lower simplicity due to these causalities and lower generalizability is the result.

As process research inherently includes time components a data strategy is required that allows generating longitudinal data, also through retrospective data collection and restricted episode analyses (Melin, 1992) as is the case in the papers of this thesis. Retrospective data collection of processes is beneficial when causes and effects within processes are studied (Van de Ven, 2007; Voss, Tsikriktsis and Frohlich, 2002). However, problems with memory loss and retrospective sense making bias (Voss et al., 2002) need to be minimized, to secure validity and reliability of the data. I triangulated data (Yin, 2003) with secondary sources, for instance, publicly available or firm internal information (e.g. publications,

consulting reports, white papers, time tables sowing transition processes or standard operating procedures) to reduce these issues.

Methods of Paper 1. The research setting is the global maritime industry and a multinational business conglomerate headquartered in Scandinavia. The business units of the conglomerate located in The Netherlands and Denmark, offshore service through the conglomerate's internal offshoring unit, the Global Service Centre (GSC). The GSC is based in Scandinavia and operates offshoring operations in India (Pune and Mumbai). Several rounds of data generation through semi-structured interviews (combined with some secondary data) were conducted in the onshore business units in Denmark and The Netherlands and at the offshore units in India between June 2012 and February 2013. All interviews were recorded, transcribed and then coded using NVivo 10. Five services were initially studied whereof three were finally chosen to be included in the paper, following a purposeful sampling approach. The cases were presented in a narrative manner and then analysed through cross-case analysis.

Methods of Paper 3. The research setting of this paper is the Indian knowledge-intensive services industry. Two Indian consulting firms that offer knowledge-intensive services to US and European firms are studied. Information was generated through semi-structured interviews and secondary data between November 2011 and March 2012 in India. All interviews were recorded, transcribed and coded using NVivo 10. Several services were initially studied but not all reached data saturation or were considered applicable to the context; only four services were eventually used. The collected data was analysed through a cross-case analysis that looked at the different production process stages and applied a temporal bracketing strategy (Langley, 1999) distinguishing between two phases of the production process.

Summary of Research Papers

Although the papers of this thesis have different foci and apply different methods, they all contribute to the overall aim of the thesis to understand how offshoring impacts the production of services. Through the application of two process

perspectives, I am able to contribute to this research objective with novel findings. The first paper investigates how offshoring of service production systems elicits a reconfiguration of the systems, and takes a transition process perspective. Papers 2 and 3 take a production process perspective of offshored knowledge-intensive services. To be precise, the second paper studies how the increase in cognitive distance inferred by offshoring changes the production of knowledge-intensive business services, including the outcomes on costs and value. Paper 3 follows on this with an investigation on the implications of offshoring on client co-production of knowledge-intensive services in the offshored production process. The papers are summarized in Table 1.12 and the following section.

Chapter 2: Rocking and Rebalancing the Boat: How Offshoring Elicits Reconfiguration of the Service Production System (with Michael Mol and Bent Petersen)

The offshoring process is the focus of this study where different services and their service production systems are studied. A service production system is seen as a structure composed of task execution practices, of agents executing the tasks, and of a resulting service output. Offshoring may be seen as an exogenous shock to this service production system as it involves changes in resources in order to lower costs and/or enhancing quality of the service offering (Aron, Bandyopadhyay, Jayanty, and Pathak, 2008; Lewin et al, 2009; Stringfellow, Teagarden and Nie, 2008). However, it is unclear how this employment of new resources affects task execution and, in turn, how new practices may prompt another reconfiguration of resources. In other words, the change of one single component implies a *misalignment* leading to a *reconfiguration* of the system.

In using practice theory (Feldman and Orlikowski, 2011; Nicolini, 2012), with its dualities of agents and structure as well as stability and change (Feldman and Orlikowski, 2011) we are able to investigate how offshoring leads to a misalignment of various system components and concomitant reconfiguration of the service production system. In applying a systemic approach to study the *interaction* of resources, execution practices, and outputs – rather than one of the three components in isolation we are able to provide a more dynamic perspective to the offshoring transition of services. In applying a multiple case methodology we generate rich data that reveals substantial managerial challenges in the

realignment process prompted by relocation of production from Europe to the emerging market economy of India. We explain how structures and agents interact to deal with this misalignment.

Our evidence suggests that the alignment process may not be particularly well planned, i.e. the orchestration of resources does not necessarily start from a firm's capabilities, but may have more of a bottom-up nature, where the change in resources that occurs when firms offshore leads to a subsequent change in task execution. Over time the task execution moved from discretionary services towards rules-based services. This suggests that offshoring may be a somewhat self-reinforcing process: Tasks can more easily be performed offshore if they are rules-based, due to the ability to codify such tasks, but the act of offshoring also makes tasks more rules-based, thereby making it easier to offshore them. The main contribution of this paper is a theoretically grounded analysis of the realignment between the components of the service production system in response to an exogenous shock. We also contribute to an understanding of the impact of offshoring and to practice theory.

Chapter 3: So Far, yet so Near: The Effect of Cognitive Distance on Production of Knowledge-intensive Business Services (with Michael Mol)

This paper studies predominantly the production process of knowledge-intensive business services (KIBS) but acknowledged to some extent also the transition process and especially the organizational impact of offshoring similar the preceding paper. The paper is initiated with the general belief that offshoring leads to changes in cost and value outcomes of the services, with costs being the overall expenses associated with a service for clients, including production and transaction costs (Williamson, 1985). But actors are not only concerned with transaction cost minimization; they equally pursue the creation of transaction value (Zajac and Olsen, 1993). Offshoring and perhaps any physical separation of production and consumption of high value activities challenge existing theories of organization. Thus, KIBS offshoring is perceived as a 'natural experiment' that allows investigating the impact of a physical separation of service production and consumption that was thought to be infeasible.

Table 1.12: Overview of research papers

	Chapter 2	Chapter 3	Chapter 4
Title	Rocking and Rebalancing the Boat: How Offshoring Elicits Reconfiguration of the Service Production System	So Far, yet so Near: The Effect of Cognitive Distance on Production of Knowledge-intensive Business Services	Client Co-production in the Production Process of Offshored Knowledge-intensive Services
Authors	Brandl, Mol, Petersen	Mol, Brandl	Brandl
Research question	How does offshoring of a service elicit a reconfiguration of its service production system?	How does an increase in cognitive distance through offshoring, change the production of knowledge-intensive business services, including cost and value outcomes?	How does offshoring impact client co-production in the production processes of knowledge-intensive services?
Process perspective	Offshoring process	Offshored production process	Offshored production process
Theories	Service production system, practice theory.	Service production process, cognitive distance, cost / value considerations.	Service production process, knowledge transfer / co-creation, task interdependence
Methods	Multiple case study	Conceptual with illustrative case	Multiple case study
Findings	Offshoring is a self-reinforcing process: tasks are easier offshored when rules-based but the act of offshoring makes tasks more rules-based	Economizing and cognition help us understand cost and value creation outcomes in KIBS production processes their decomposability, firm experience, and repeated relationships	Offshored knowledge-intensive services require at all times client co-production and change characteristics over time

While the commonly used “economizing” (Williamson, 1991; 1999) approaches of transaction cost economics and the resource-based view of the firm (RBV) allow good insights into the costs of offshoring, additional perspectives are required for understanding new knowledge creation (Argote, McEvily and Reagans, 2003). Thus, we argue that significant explanatory power can be obtained from cognitive theories that use different explanatory mechanisms and are focused on individuals (Gavetti, Greve, Levinthal, and Ocasio, 2012; Levinthal, 2011; Nooteboom, 2009). Specifically, offshoring involves an increase in cognitive distance (CD) because individuals involved have different backgrounds and experiences.

We discuss how this CD moderates economizing explanations of costs and alters value outcomes and the organization of KIBS production. Using an illustrative case we particularly focus on activity decomposability, firm experience, and repeated relationships as drivers of cost and value outcomes. This discussion helps to understand when offshoring may take place and also how service production processes change over time. We contribute to the understanding of offshoring and service operations as well as to debates about the merits of integrating cognitive and economizing perspectives. The overall outcome of the paper is that it provides an activity-driven framework of cognitively distant KIBS production.

Chapter 4: Client Co-production in the Production Process of Offshored Knowledge-intensive Services (single authored)

Similar to the preceding paper, this paper takes a production process perspective but uses empirical data to study the production process with its actors, focusing on the client. Clients are argued to play a significant role in the production process of knowledge-intensive services (Schein, 1990). Together with the unique characteristics of the services, such as the dependency on professional experts, high tacit knowledge intensity and specifically, the high degree of customization in the production of the services (Alvesson, 1993; Bettencourt et al., 2002; O’Farrell and Moffat, 1991), a strong interaction between clients and service providers is inevitable in the service production process (Edvardsson, Gustafsson and Roos, 2005; Maister and Lovelock, 1982).

Clients co-produce these knowledge-intensive services through the transfer of already existing knowledge and the co-creation of new knowledge (Mills, Chase and Margulies, 1983). These interactions are argued to require co-location (Howden and Pressey, 2008) that is not given when the services are offshored. Thus, I investigate how offshoring is impacting this client co-production in the production processes of the services.

The paper investigates the service production process in more detail and dissects the process into different production tasks. Such a process perspective enables distinguishing contributions and activities of the client in the production process and promotes a comprehensive perspective on the causality of tasks and actors. To exemplify a service production process, Stabell and Fjeldstad's (1998) value shop model is used that reflects five interdependent production tasks (*problem-finding and acquisition, problem-solving, choice, execution and monitoring and evaluation*). When the services are offshored, this process becomes even more iterative and repetitive, as offshoring of knowledge-intensive services is predominantly a longer-term commitment.

Through an empirical analysis of several offshored service production processes, I find that a) co-production (i.e. knowledge transfers and knowledge co-creation by the client) is differently impacted by offshoring and change over time but never decreases entirely, which means that the client will need to be part of the production process at all times and b) these changes of co-production in causation with features of the offshored production process result in modularization of production tasks and as a consequence, standardization of production processes and a change of service characteristics. I conclude that offshored knowledge-intensive services will at all times require client co-production and that service characteristics change over time. This work contributes to the international management literature and knowledge management literature.

CHAPTER 2

Rocking and Rebalancing the Boat: How Offshoring Elicits Reconfiguration of Service Production Systems

Kristin Brandl
Copenhagen Business School

Michael J. Mol
Copenhagen Business School

Bent Petersen
Copenhagen Business School

Abstract

A service production system can be seen as a structure composed of task execution practices, of agents executing the tasks, and of a resulting service output. Offshoring, as the relocation of business activities from one part of the world to another, acts as an exogenous shock to such a service production system. Drawing on practice theory, which leads us to consider the dualities of agents and structure and of stability and change, we investigate how offshoring leads to reconfiguration of the service production system and concomitant misalignment of its various components. Through a multiple case methodology, we explain how structures and agents interact to deal with this misalignment and find that agents undertake actions, both top-down and bottom-up, to realign components. The main contribution of this paper is a theoretically grounded analysis of the realignment between the components of the service production system in response to an exogenous shock. We also contribute to an understanding of the impact of offshoring and to practice theory.

Keywords: Service production system, offshoring, practice theory

INTRODUCTION

Offshoring of services is a prominent feature of today's global economy and there is still a large potential for relocation of service jobs, in particular from developed to emerging economies (Blinder, 2009; The Economist, 2013b; van Welsum, and Reif, 2006). Offshoring has implications for national economies, such as the emergence of business process clusters in India and China, but equally for companies. Firms are increasingly reconstructing themselves as a flexible, modular collection of services shored from various locations (Lewin, Massini, and Peeters, 2009). This is evidenced, for instance, by the rise of the term 'rightshoring' among practitioners, which suggests a footloose attitude towards location of activities. So, for good reasons, the offshoring phenomenon has received ample attention from academic researchers.

We know a great deal about *resources* deployed in the production of services – before and after offshoring. It is no exaggeration to say that service offshoring research has to a large extent revolved around human resources/agents: How labour cost arbitrage and the race for talent has driven the relocation of services from developed to emerging economies (Lewin et al., 2009; Stringfellow, Teagarden and Nie, 2008). What is also relatively well researched is the service *output* before and after offshoring: To what extent firms can maintain, or even improve, service quality in the new location (Aron, Bandyopadhyay, Jayanty, and Pathak, 2008). This research has been spurred on by media attention around less successful offshoring experiences. A famed case of service output deterioration is Dell's offshoring of call centers to India and subsequent 'reshoring' to North America and Europe as a consequence of rampant customer dissatisfaction (The Economist, 2003b). A similar case is GM's reshoring of outsourced IT services due to lower than expected speed, flexibility and innovation in India (The Economist, 2013).

What we know less about is the extent to which the *execution* of offshored service tasks, i.e. the practice used to produce the services (Goldstein, Johnson, Duffy and Rao, 2002), is subject to change during relocation. We know even less about how change in resources affects the way in which service tasks are executed. However, such changes do occur, as in the case of Outsourcia, a Moroccan provider of offshore services for French companies (Financial Times, 2013); "employees soon progressed beyond simply fielding complaints and inquiries to developing close

and continuing relationships with the clients”. Outsourcia wanted to provide clients with a tailor made testing and learning platform to explore new customer-relations management approaches, which extended well beyond the initial tasks.

Additionally, there is a need for increased study of service operations management (Machuca and Gonzales-Zamora, 2007). Thus, we suggest it makes sense to study resources, execution and outputs as components of a *service production system*. In this system, change in one component is likely to affect the other two, and these effects may well be recursive. In other words, the change of a single component implies a *misalignment* and *reconfiguration* of the system. Offshoring, the relocation of a task to another country, may be seen as an *exogenous shock* to this service production system. Offshoring always involves changes in resources. That, in a way, is the very means to an end of lowering costs and/or enhancing quality of the service offering. In contrast, it is rather unclear how this employment of new resources affects task execution and, in turn, how new practices may prompt yet another reconfiguration of resources.

Hence, the central research question of this paper is: *How does offshoring of a service elicit a reconfiguration of its service production system?* Our systemic approach requires us to study the *interaction* of resources, execution practices, and outputs – rather than one of the three components in isolation. In the offshoring context, this implies studying the interface of these components before, during, and after relocation.

We draw on practice theory (Feldman and Orlikowski, 2011; Nicolini, 2012) - a perspective well suited to investigate how practices inside organizations change over time. More specifically, we first study particular parts of a routine (i.e. the service production system) in isolation, before taking into account their relationship and the process through which the parts change, as suggested by Pentland and Feldman (2005). We apply a multiple case methodology of three offshored services from Europe to India. The cases comprise of rich data that reveal substantial managerial challenges in the realignment process prompted by the geographic relocation.

The paper proceeds as follows: Section 2 provides an overview of the literature regarding service offshoring and practice theory and its applicability to service production. We then present the structure of the service production system.

Section 3 accounts for the empirical methods employed. Section 4 presents the data analysis of each of the three cases. In Section 5 we analyse across the three cases and develop the implications of our work, before concluding with section 6.

LITERATURE REVIEW

Service Offshoring

The offshoring literature falls roughly into three streams. The first stream deals with the *antecedents* of offshoring questioning the reasons/drivers for offshoring (e.g. Dossani and Kenney, 2006; Manning, Massini, and Lewin, 2008). The second stream of literature examines offshoring *outcomes* or *performance implications*, for instance financial (e.g. Bertrand, 2011; Larsen, Manning, and Pedersen, 2013), non-financial (e.g. Jensen, 2009; Aron et al, 2008), and shorter or longer-term outcomes (e.g. Bertrand and Mol, 2013). The third, and most relevant, stream of literature, aims to uncover the *implementation characteristics* of offshoring. It studies characteristics of offshored activities in terms of the value chain focus (upstream-downstream, primary-secondary activity) (e.g. Mudambi, 2008; Maskell, Pedersen, Petersen, and Dick-Nielsen, 2007), skill-sets needed (e.g. Jensen and Pedersen 2011) or destination choice (e.g. Hahn and Bunyaratavej, 2010). It addresses questions regarding governance modes (captive, outsourced, hybrid) (e.g. Lewin and Peeters, 2006) and coordination of tasks (e.g. Srikanth and Puranam, 2011; Kumar, van Fenema, and von Glinow, 2009).

The relationship between offshoring and firms' task coordination and integration efforts comes especially close to the scope of this study. However, the offshoring literature does not offer implementation studies that examine aligning task execution practices and resources. In the study by Jensen and Pedersen (2011), the way the offshored task/activity is executed is considered a given, and alignment is exclusively a matter of deploying (human) resources with the right skill sets. Consequently, resources are assumed to fit with task characteristics. An opposite causal direction – that the task execution is adjusted to fit the human resources – is not examined or discussed. Many studies focus on manufacturing offshoring. However, service offshoring involves different challenges due to unique characteristics of services, especially their intrinsically tacit nature and the knowledge required by employees (Metters and Verma, 2008). Youngdahl and

Ramaswamy (2008) argue that although organizational factors may be the main success factor in service offshoring, human resources, organizational culture, transfer of best practices and competence building are crucial too.

What all of this literature suggests, is that moving service production offshore involves significant organizational changes and impacts upon both resources employed and the way they produce services. An answer to our research question by definition requires a process view of offshoring. Recently, some offshoring literature has embraced a process perspective. Jensen (2012) presents two longitudinal case studies on offshoring to India, which demonstrates that onshore activities, offshore activities and underlying knowledge resources are highly interdependent. Luo, Wang, Zheng, and Jayaraman (2012) examine how information is used in offshoring and recommend that process integration should be matched with task characteristics and task interdependence.

A practice theory perspective

In this paper we employ a practice theory perspective (Feldman and Orlikowski, 2011; Feldman and Pentland, 2003; Nicolini, 2012; Schatzki, 2001). Practice theory is thus named because practices inside organizations are its central concern, including the practices of strategy (Paroutis and Heracleous, 2013), transnational entrepreneurship (Terjesen and Elam 2009), and work (Nicolini, 2012), rather than organizational structures or decision-making. Since there are actually multiple practice theories (Nicolini, 2012), we describe our precise use of the theory below. Practice theory is particularly useful when operations are of a complex and emergent nature; this is the case with offshored services, as the complexity of tasks is aggravated by the geographical and possibly organizational separation of client and service provider. The offshoring literature clarifies that such separation can act as a major obstacle to effective service production (Lewin et al, 2009).

Therefore, in terms of service production, a first implication of practice theory is that services change shape continuously as a consequence of what those producing the service do; “social life is an on-going production and thus emerges through people’s recurrent actions” (Feldman and Orlikowski, 2011: 1240). Another important aspect of practice theory is its view of human agency/agents and structures as not being a dualism, i.e. a contradiction, but a duality (Feldman and

Orlikowski, 2011; Giddens, 1984). This implies that agents and structures mutually reinforce each other in the development of practices, or put differently (Nicolini, 2012: 3) that “behind all the apparently durable features of our world there is always the work and effort of someone”. This matters for the study of offshoring, as the organizational structure in which service offshoring occurs and the people producing the services encounter such mutual reinforcement; actions of agents confirm existing structures and these structures shape actions.

Central to our use of practice theory is the observation that routines, i.e. service production systems, do not necessarily imply inertia (Feldman and Pentland, 2003), and more specifically that “routines are implicated in organizational change. One explanation for change in routines was the existence of exogenous shocks” (Feldman and Orlikowski, 2011: 1248). If offshoring is an external shock, it ought to affect routines in use. We observe routines prior to offshoring and at various phases during offshoring, to investigate how and how much routines change. The practice perspective further suggests that practices help to create and modify organizational assets (Regner, 2008), i.e. there is a recursive relationship between how services are performed and the resources used to perform them.

Building upon this notion of routines, Feldman and Orlikowski (2011: 1250) maintain, “the development of the routine occurs through the enactment of it. There are two primary dualities engaged in theorizing routines as practices: Agents / structure and stability / change”. The identification of these two dualities, therefore, forms another important part of our empirical investigation; how do actions of agents and organizational structures mutually reinforce each other and to what extent are stability and change two sides of the same coin? A further aspect of practice theory is the significant role it assigns to technological artefacts in production (Orlikowski, 2007).

Service offshoring from a practice theory perspective

Building upon these insights, we now seek to characterize service production. A service production system is a set structure with different features that involves the transmission of demand signals from clients to providers. These demand signals are processed through a production system, i.e. a routine that draws on resources and execution processes to create outputs (Stabell and Fjeldstad, 1998). In other

words, we distinguish three central components, namely *resources*, *execution* and *outputs*. We now discuss the components prior to researching the entire system (following Pentland and Feldman, 2005).

Task resources: Resources are agents involved in the production of services, including both operational personnel and managerial staff. The knowledge they possess is crucial for service performance, especially in knowledge-intensive services (Alvesson, 1993). One key characteristic of offshoring is that offshore agents replace in most cases all onshore agents. Based on the literature (e.g., Lewin et al, 2009; Manning et al, 2008), we suggest that the key characteristics of these agents are their *education and training* and *experience*. Training involves both formal education and task specific training, while experience can refer to experience within the organization, within the broader industry, or with the specific task.

Task execution: Task execution sets boundaries around how the service may be performed by agents. However, our practice-based perspective suggests that agents also affect structures, and more particularly that the two act as a duality. Extant literature (Luo et al, 2012; Stabell and Fjeldstad, 1998; Jensen and Pedersen, 2011) suggests that task execution includes two dimensions: the degree of coordination with other tasks and the discretion delegated to the individual agent or team of agents.

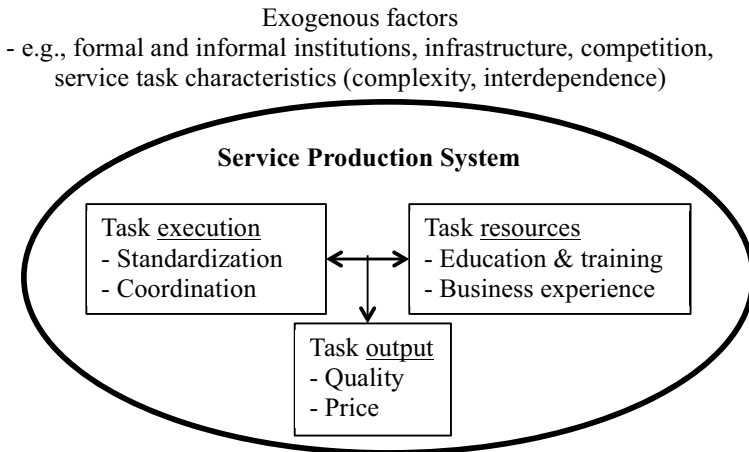
The degree of task *coordination* refers particularly to the task integration level, i.e. the potential to disaggregate the task from surrounding activities. Stabell and Fjeldstad (1998: 422) refer to bundled tasks as being “cyclical, iterative and interruptible activities”. We consider a task to be highly integrated when there is a considerable amount of interaction and knowledge exchange between agents who perform the task and agents who are not directly related to the task but provide the task’s inputs or use its outputs.

The degree of *standardization* is another dimension of task execution; it runs from completely discretionary to completely rules-based tasks. Discretionary tasks are flexible and unstandardized, and depend on personal judgment as well as tacit knowledge possessed by agents. These tasks are dependent on the manipulation of existing knowledge or the generation of new knowledge by knowledgeable professionals (Faulconbridge, 2006). Still, standardized tasks depend on rules and

homogeneous work procedures, which are defined and often codified in standard operating procedures (SOPs). Division of labour is a dimension running from completely individualized to completely team-based processes. In the former case, the individual agent is in command of a particular aspect of the service task and only with great difficulties can he or she perform other task aspects. The division of labour can be vertical or horizontal. When vertically specialized, the task execution is divided into several sequential sub-tasks. When specialized horizontally, the task is divided among agents according to different clients; however, the individual agent performs all the sub-tasks related to that client. In the latter case, agents perform the service task as a team; the agents can replace one another without difficulties.

Task output: Together, task resources and task execution determine the outputs that the system produces. Effectiveness of the outputs depends on whether the service meets the initial demand signal sent by the client. Service effectiveness is often conceptualized through quality and price (Stabell and Fjeldstad, 1998). We define *quality* here as the difference between customer expectation and the perceived performance in line with Grönroos (1982). Quality depends on the client firm since service provider has limited control over client expectations and perception (McLaughlin and Coffey, 1990; Nachum, 1999). The so called technical quality, the actual outcome of the service for the customer, is connected to the functional quality, how effectively the service quality is delivered (Grönroos, 1982). Similar to service quality, the *price* of a task is context dependent and subjective, based on the perceived use value for customers (Bowman and Ambrosini, 2000). We expect the price to reflect this value, recognizing the difficulties with the concept of value and that some services might have industry based standardized fees (Nachum, 1999). Figure 2.1 depicts this service production system.

Production system. The components of the production system are interdependent and there may be changes in the nature of their dependence, as we investigate empirically below. We also query whether this dependence itself changes as a consequence of offshoring. At a high level of aggregation we seek to understand how structure and action interact and how the system moves from one snapshot to the next.

Figure 2.1: Main components of the service production system

Some change in structure will take place over time, regardless of whether offshoring or some other exogenous event is imposed on the system (Feldman and Orlikowski, 2011). Change can be a result of agents' actions (Giddens, 1984). Endogenous change may be more purposeful and incremental, focusing for instance on task execution improvements to increase efficiency. Offshoring, on the other hand, potentially elicits more significant changes in the service production system. Our framework suggests that changes may involve deployment of new human resources (agents), in execution, both through autonomous changes and through changes induced by reconfiguration of resources, and in outputs. For example, offshored service tasks may be performed in different ways depending on the skill sets of local staff. If people initially lack business experience, tasks have to be made explicit. Conversely, when using highly skilled offshore employees with sound industry knowledge the client may loosen rules and procedures and allow staff leeway for discretionary, individual decision-making. As noted above, change in service outputs is normally an explicit driver of offshoring, and we might expect prices and / or quality to differ after offshoring. In other words, change and stability can express themselves in any of the three components.

METHODS

Research Setting

The research applies a multiple case study approach (Eisenhardt, 1989) that enables extending existing theory (Stuart, McCutcheon, Handfield, McLachlin and Samson, 2002) through theory elaboration (Ketokivi and Choi, 2014). Qualitative research approaches foster a high level of detail and provide a multi-level, dynamic and micro-foundational perspective on the processes studied (Van de Ven, 2007; Langley, 2007; Pettigrew, 1992); such an approach is consistent with practice theory (Feldman and Orlikowski, 2011). This research approach also allows applying an abductive research methodology (Dubois and Gadde, 2002), a predestined methodology to refine theory and modify frameworks, “partly as a result of unanticipated empirical findings, but also of theoretical insights gained during the process” (Dubois and Gadden, 2002: 559).

We study services and their production process that where initially produced onside and their transition to an offshore location. Thus, we observe and analyse the services production process during three phases, namely pre-offshoring (from 10 months before offshoring), transition (from initiation until the provider takes full responsibility), and post-offshoring (until 10 months after transfer of responsibility). These phases reflect a synthetic research strategy (Langley, 1999) that implies clear process boundaries and sequences (i.e. pre-offshoring, transition and post-offshoring). The boundaries were only partly designed by the researchers (i.e. start and end date) the transition period was adapted from the firms’ official transition phases.

The case times were chosen in order to have a comparable time frame and secure that changes were only associated to the offshoring transition. It is expected that service production systems moderately change over time even without offshoring and to avoid that these changes impact the study, we restricted the case time to 10 months prior and after the offshoring transition. The unit of analysis is the service production system in the three phases, thus each case represents a service production system consisting of task execution, task resources and task output in each phase.

The research setting is the global maritime industry, which has witnessed substantial offshoring. Competition in the industry is global and the industry has

recently experienced a downturn. Clients for the service tasks are business units based in several European countries of a Scandinavian multinational business conglomerate that we will call 'Afloat'. The tasks are offshored through Afloat's internal offshoring unit, the Global Service Center (GSC), based in Scandinavia and with operations in Pune and Mumbai. We focus on three selected cases that best reflect our research objectives. These services were all offshored in 2010 or 2011 – enabling us to follow the cases partially in real time and to capture all phases of the offshoring process.

The cases vary in knowledge intensity and size and concern financial management reporting & reconciliation, market intelligence, and demurrage (see table 2.1). The cases were purposefully chosen to allow for a within and cross-case analysis. The services are termed financial management reporting & reconciliation, demurrage and market intelligence. As the unit of analysis is the service production the study goes beyond the organizational frame and focuses on the phenomenon on a micro foundational level, looking for example at activities of individuals, their background and experience.

Data sources

Data was collected from primary and secondary sources. Primary data was collected through 49 semi-structured interviews with individuals located onshore and offshore who produced and managed the service or coordinated task execution (financial management reporting & reconciliation service 5 onshore/11 offshore, market intelligence 6/11, Demurrage 4/12). Interviews lasted an hour on average and ranged from 30 to 105 minutes. Most interviews were conducted between June 2012 and February 2013. Where information was missing, follow-up or clarification interviews were conducted, until saturation of information was reached. Each interview was recorded and transcribed. The interview guide contained questions on the service production process, how offshoring unfolded and how offshoring affected the service production (see also Appendix 2.1 – Interview guide). Environmental factors were included when key informants made unsolicited references to them.

Table 2.1: Description of cases

	Case A	Case B	Case C
Service	Financial management reporting & reconciliation	Market intelligence	Demurrage
Description of service tasks	Collection and analysis of financial data	Report writing and design update of standard financial or operation models	Preparation of demurrage claims and negotiation with client
Service receiver division (location)	Operations (Denmark, Sweden and Singapore)	Strategy (Netherlands, global terminals)	Operations (Denmark)
Offshored since	2010	2010	2011
Offshored to	Pune/India	Pune/India	Mumbai/India
Transition start - end (month/year)	03/2010 - 06/2011	11/2010 - 08/2011	06/2011 - 06/2012

Although, the data reflects a longitudinal process, i.e. the production of the services onshore, the transition of the services to the offshore location and the production of the services offshore, the data collection was generated retrospectively after the services were fully offshored. Retrospective data collection allows gaining a complete understanding of processes (Van de Ven, 2007) and enables to analyse the relationship between causes and effects (Voss, Tsikriktsis and Frohlich, 2002), which are important for this study. However, we acknowledge that retrospectively generated data especially with a timeframe between the periods under study and the conducted interviews, memory loss and retrospective sense making biases can occur (Voss et al., 2002). We minimize this risk, through the study of data from secondary sources, including offshoring

timelines and SOPs that enable triangulation (Yin, 2009). These additional measures allow a more precise understanding of timeframes and activities, also increasing reliability and validity of the generated data.

Research process

Data is analysed in two steps. First, we provide an in-depth analysis of each case during three phases, i.e. pre-offshoring, transition and post-offshoring, focusing on the systems features task execution, task resources, and task output. We display these findings in tables (Miles and Hubermann, 1984). The systems features of task output (i.e. quality and audit price), task execution (i.e. integration level, improvements and size), and task resources (i.e. formal education, training, firm expertise, task expertise, and industry expertise) (see Appendix 2.2 for more detail on each indicator and how these were defined). An individual case description is necessary, as an analysis of the cases is dependent on the understanding of how the service production system is designed in each of the three phases and how its features change over time. Second, we outline the alignment of the production components through the three phases using narrative analytical replications. We aim to theorize from contextual explanations that are enabled through an emphasis on causal explanation as well as contextualization (Welch et al., 2011). This detailed and in-depth description of the cases, allows having a thorough analysis of the findings including theoretical contributions in the discussion section.

Our unit of analysis is the offshored service and its three components. Such a disaggregated analytical level may be criticized of being reductionist. Therefore, we recognize the relevance of contextual factors including formal and informal institutions, infrastructure, competition, and service task characteristics (complexity, interdependence). Our disaggregated level of analysis implies that the environment exists outside as well as inside the firm. Environmental volatility is to a large extent 'self-imposed' inasmuch as the need for reconfiguring resources, execution and output as a consequence of a strategic decision such as the relocation/offshoring of business activities.

DATA ANALYSIS

Financial management reporting & reconciliation service

This service involves collection and examination of financial data from the internal finance and operations team of an Afloat business unit. Information examined and combined is presented to the operations team of the business unit (in Denmark, Sweden and Singapore). The key tasks are the creation of monthly and quarterly reports, models as well as the daily reconciliation of transfers. The tasks require financial accounting and controlling knowledge. The offshoring transition started in March 2010 and was completed by June 2011.

Task components. The quality measures for the task outputs changed during offshoring (see Table 2.2). Prior to offshoring, quality was loosely measured without a clear set of KPIs. Once the offshoring decision was taken, the offshore provider and the Danish client jointly developed quality measures, resulting in a vast amount of KPIs. *“We have extensive KPIs in terms of what comes in, what they do, and what is leaving the [offshoring unit]”*, recalled the Head of Finance of the Danish onshore unit. The reporting task in the post-offshoring phase accounted for 17 KPIs with mainly quality parameters and a few time components. Furthermore the quality of the task was controlled with *“a survey that’s rolled out, which is more [...] a feedback from the business partner”* (Team Manager F&A, Indian offshore unit). In the transition phase, the audit prices increased slightly due to training efforts. This price increase was more than reversed in the post-offshoring phase.

Although these tasks are fairly standardized and require few judgments, the onshore business unit had limited SOPs prior to offshoring. The accounting manager at the time emphasized that in the transition phase, *“We had some SOPs but they were out-dated so we had some meetings where we discussed the procedure, then we typed the SOPs and discussed them afterwards”*. During transition, the onshore and offshore units developed SOPs and standardization documents. In the post-offshoring phase, the tasks were standardized further as it *“was argued that in transactional [work] it’s more to do with productivity and efficiency that we [the offshore unit] try to bring in”* (Team Manager F&A, Indian offshore unit).

Table 2.2: Financial reporting and reconciliation – Task outputs, execution and resources

			Pre-offshoring	Transition	Post-offshoring
Task output	Quality		Loose measures	Design of new measures	Extensive use of measures
	Audit		Average	High	Low
Task execution	Standardization		Rules-based without SOPs	Rules-based with new SOPs	Rules-based many SOPs
	Co-ordination	Integration level	High	Re-integration	Medium
		Improvements	Informal	Informal	Formal platforms
		Size (FTEs)	4	Up to 7	5
Task resources	Formal education & training	Formal education	B.Sc. (Finance, Accounting), practical education	Commerce graduates, MBA Finance, chartered accountants	Commerce graduates, MBA Finance, chartered accountants
		Training	Somewhat structured Shadowing	Somewhat structured Practical, shadowing	Somewhat structured Practical, shadowing
		Firm expertise	High	Low	Moderate
	Business expertise	Task expertise	High	Moderate	High
		Industry expertise	High	Low	Moderate

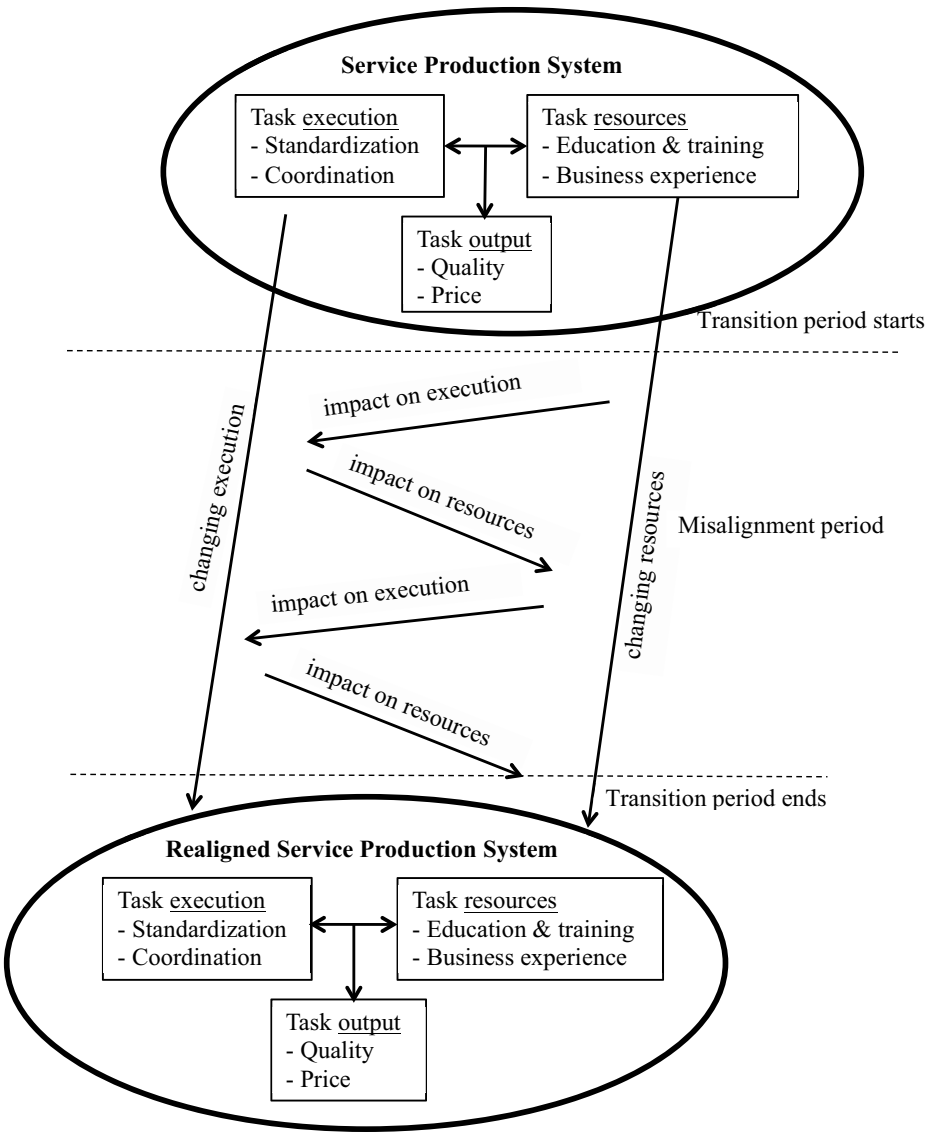
The coordination of tasks changed due to changes in the integration of the tasks, the improvements made to the task, and the number of agents. The task was highly integrated with overall operations of the business unit. Reports and reconciliations depended on information forwarded from the finance and accounting department in all three phases and were used to review the business unit's strategy. As large parts of the finance and accounting team had already been relocated to the offshore unit beforehand, a re-integration of tasks took place, instead of the decoupling of inputs from task execution activities, which commonly occurs in offshoring. Agents emphasized the benefits of this, like discussion between executing employees and those supplying data. Prior to offshoring improvements were informal.

The systems were not unified between locations and tasks were executed without following stringent procedures. During transition, opportunities for improvements were limited. However, offshore agents decided to *"meet a few guys from the day-to-day processes that were performing reconciliation [as well]"* (Reporting Team Member, Indian offshore unit) to gather ideas and information about improving efficiency and formalized these through Kaizen and Six Sigma process improvements. The task size did not change significantly between the pre-offshoring to post-offshoring phases. However, in the transition period there was an overlap of resources resulting in an overall FTE count of up to seven. The Head of Offshoring (Danish onshore unit) explained, *"We started with four people and it grew to six, as they [offshore location] came asking for more people. They took a long time to stabilize the process that we offshored, even though it was fairly simple transactional stuff. A lot of that was due to the fact that we didn't have clear SOPs or they were not the ones that were being followed."*

The task resources and their expertise changed from pre-offshoring to post-offshoring. Although the education level of executing and training employees remained roughly the same, their task expertise changed. Prior to offshoring, employees had worked on this task for years and possessed significant firm, task, and industry expertise. Newly hired employees during transition had some task experience, but were short on firm and especially industry knowledge. A controller from the Danish onshore team suggested, *"They didn't know what the shipping industry was at all"*.

Alignment of tasks. Although task expertise was low and firm and industry expertise were missing, formal education levels were much higher. Due to the lack of business experience at the offshore location, onshore agents developed SOPs with some help from offshore agents. This standardization impacted the task resources again as the employees became aware of the effectiveness of standardization and were highly motivated to further improve efficiency, resulting in further standardization. Once the transition period was over, the task execution and task resources had reached alignment again, as illustrated in Figure 2.2.

Figure 2.2: An interactive service production mode



Market intelligence service

This service is part of business implementation activities within Afloat's business unit. The task is to write reports and standard financial models (SFM) or operations models for stakeholders in terminals across the business unit's four regions (Europe, Americas, Asia, and Africa). The financial and operations model requires regular updating of information and improvements. Reports contain data from internal business unit sources or information on competitors, tenders, potential partners, and further opportunity assessments. Prior to offshoring, the stakeholders themselves undertook the service in an ad hoc manner. The service requires knowledge of the industry, financial modelling and business operations. The service was offshored in two phases, first the SFM offshoring in November 2010 and then reporting in April 2011. The offshore team took complete ownership in August 2011.

Task components. Due to the unstructured and uncoordinated nature of the reporting task before offshoring, task quality was not measured (see Table 2.3 for a summary). In the transition phase, the onshore business unit formalized the tasks and KPIs were formulated in line with the design of the reports and models. The General Manager Finance & Accounting of the onshore unit recalled, "*KPI indicators, which measure timeliness [...] and some key performance indicators on the quality on the reports and on the deliverables were designed*". Furthermore, feedback surveys were also implemented. Due to lower labour costs in India, the audit price was lowered once the service had been offshored.

The task execution marginally changed during the phases. In the beginning of transition, the tasks were already somewhat rules based, with set procedures only having to be updated. In the transition phase, further standardization was implemented when templates were introduced to the service. These templates were refined in the post-offshoring phase, as an Analyst of the Indian offshore business unit recalled, "*The first couple of reports were customized to each request that came in, but then over a period of time we also realized that for most of the requests, the kind of data that needs to be extracted or that needs to be delivered is quite common. So those common areas were identified and put up in a standard template*". Similar moderate changes impacted the coordination of the task execution. Initially, the service was not highly integrated with the business unit because of its decentralized structure and independence of locations around the

globe. In the transition and post-offshoring phases, the service became more formalized and this moderately increased integration. Stakeholders in different locations were more able to capitalize on the services, basing decisions and strategic activities on the reports. *“The project managers feel very free to approach us because we keep interacting with them not only for the official terms but otherwise as well”* (Analyst, Indian offshoring unit).

Similarly, due to the decentralized set-up of the task, improvements were informal and unstructured prior to offshoring. After offshoring and the formalization of the task, improvements and efficiency seeking became more explicit in the transition, and particularly the post-offshoring phase, with agents for instance suggesting improvements to respond to client surveys. Additionally, GSC started to internally communicate best practices. The Head of Delivery stated, *“They [accounts for other business units within GSC] do it like this, so maybe we should look at that too. Maybe we should do it their way”*. Thus, best practices were exchanged and discussion took place about the report-writing task.

While formal education varied widely in the pre-offshoring phase, the resources in the transition and post-offshoring phase were less heterogeneous with a focus on finance MSc and commerce graduates. Training was somewhat structured and involved a one-to-one session between an onshore and an offshore agent, who trained the other two analysts. *“It was more a practical training [...] she [Analyst from the onshore business unit] was also kind of developing it so we both were sitting together, she used to let me know that these are the things we want, then I used to work on them [...] then she commented: these are the things you need to improve and this is something you can include”* (Analyst, offshoring unit).

While reports were developed by managers and analysts without much task expertise before offshoring, task experience increased during transition and even more so post-offshoring. *“We hired people who had prior experience working on these areas [...] that really helps as you know they are already trained to quite an extent”* (Team lead, Indian offshoring unit). Furthermore, centralization allowed the analysts to become specialists in the development of reports and financial modelling. The industry expertise mattered as an analyst (offshore unit) recalled, *“You need to understand the technical terms that are used not only in the shipping industry but for ports, the equipment or whatever the technical words are”*. Prior to offshoring this expertise had been comparatively high.

Table 2.3: Market Intelligence – Task outputs, execution and resources

			Pre-offshoring	Transition	Post-offshoring
Task output	Quality		No measures	Design of new measures	Use of quantitative measures
	Audit		Average	Low	Low
Task execution	Standardization		Discretionary with some standardization	Discretionary with some standardization	Discretionary with some standardization
	Co-ordination	Integration level	Low	Moderate	Moderate
		Improvements	Informal	Formal	Formal platforms
		Size (FTEs)	Undefined	4	3
Task resources	Formal education & training	Formal education	Engineering degrees, MBAs, M.Sc., B.Sc.	M.Sc. Finance, Commerce graduates	M.Sc. Finance, Commerce graduates
		Training	No training	Somewhat structured Practical	Somewhat structured Practical
	Business expertise	Firm expertise	High	Moderate	Moderate
		Task expertise	Low	Moderate	High
		Industry expertise	High	Low	Moderate

Alignment of tasks. Due to centralization the resources changed from rather unskilled, yet knowledgeable, resources with significant firm and industry expertise, to resources with some task experience in the transition phase without much industry and only some firm knowledge. After offshoring, there was experience with tasks, the industry and the firm. Furthermore, this led to a change in task execution. The task characteristics changed during transition as the rather unstructured and discretionary services became more standardized and rules based, even more so in the post-offshoring phase when templates and SOPs were used. Similarly, the task output changed and the quality of tasks was now measured, through quantification of timely deliverables and client surveys, especially in the post-offshoring phase.

Demurrage service

Demurrage is the time when a charterer (the client) stays in possession of a vessel in a port when cargo is not unloaded on time. Demurrage incurs charges the charterer must pay the ship-owner. The charges are a fine that is calculated on a case-by-case basis, accounting for contract regulations, overtime, cargo/freight load, and seaport regulations. Knowledge of legal regulations and experience in the shipping industry are necessary to prepare the claims and negotiate with the vessel user (the charterer/client). The demurrage analyst bases this service task on judgment and the interpretation of contracts and regulations. The demurrage service was offshored in several phases; starting in June 2011 with claim preparations for the Danish business unit, continuing with claim preparations and claim negotiations for the Swedish unit and ending with claim negotiations for the Danish in June 2012.

Task features. Task outputs changed from the pre-offshoring phase, when no explicit quality measurements existed, to a documented and quantifiable measurement approach (see table 2.4). “*We did try to look at hard measurements, for example how quickly they could produce, how quickly their claims were out, the amounts they collected compared to previous work*”, the Head of Offshoring from the Danish business unit explained.

Table 2.4: Demurrage – Task outputs, execution and resources

			Pre-offshoring	Transition	Post-offshoring
Task output	Quality		No measures	Trial to establish measure	Quantitative measures / feedback
	Audit		Average	High	Low
Task execution	Standardization		Discretionary no standardization possible	Discretionary with some process standardization	Discretionary with some process standardization
		Integration level	High	Medium	Low
	Co-ordination	Improvements	Informal	Informal	Formal platforms
		Size (FTEs)	13	Up to 15	11
Task resources		Formal education	Business graduate, secretaries	Engineering-business-, commercial graduates	Science-, (nautical, marine) engineering graduates, MBAs
	Formal education & training	Training	Unstructured	Somewhat structured practical, shadowing	Somewhat structured practical, shadowing
		Firm expertise	High	Low	Moderate
	Business expertise	Task expertise	High	Hardly any	High
		Industry expertise	High	Moderate	High

This development was initiated in the transition phase when it was realized that no measures had previously been applied at the onshore unit. As emphasized by the Head of Delivery in the onshore unit, *“We believed that things were done in the most effective way”*. Similarly, the audit price changed during the transition to the post-offshoring phase. In the transition phase, people needed to be trained while production continued, leading to higher audits and increased travel costs. This price dropped back in the post-offshoring phase when it was estimated that approximately US\$100,000 in annual savings (salary, overhead and administrative costs) could be gained per Indian employee.

Additionally, the task execution underwent changes. The services were considered to be discretionary and non-standardizable in the pre-offshoring phase. Yet offshoring led to development of some rules and SOPs. A demurrage analyst from the Danish onshore business unit described the offshore agents as being *“very used to putting things into boxes and were very keen on doing the same thing with demurrage”*. The initial aim was to further standardize the service once full responsibility of the service was attained. However, in the post-offshoring phase, Indian operatives acknowledged the difficulties with full standardization of tasks and some difficult-to-codify elements remained. Nevertheless, local top management aimed to standardize further, contrary to the views of onshore agents. *“Now, we have become more process oriented and we're losing quality [...] it has become more of a speed thing, we have to send the claims fast, we have to recover fast”* (Demurrage Analyst, Indian offshore unit).

Prior to offshoring, the task was highly coordinated and integrated into the business unit. Demurrage analysts regularly met with the other employees of the business unit that worked in areas related to demurrage, such as the legal department, vessel contracting and the finance department. These departments were located in the Scandinavian headquarters and personal interaction was straightforward. This interaction became less frequent throughout the transition phase. Legal actions, to trace missing demurrage claims, were outsourced in the post-offshoring phase to a third party vendor, leading to a reduction in co-dependence of the Indian offshore business unit on onshore agents. Changes and improvements to task execution were initially discussed informally in the onshore business unit.

During transition, some changes were made as suggested by offshoring agents in order to standardize the tasks and create new SOPs. Furthermore, the agents initiated the development of an unofficial database to deal with repetitive issues. *"We're going to pick it up and put it in [the offshore unit] at the same performance level as you have it right now and then once the migration is complete, once we have made sure that everything has been picked up as it is and put in here then we will see how to improve it. So [the] very first time the SOP is the same as it is being done there, but later on once we go live and the process is all in, we improve it"*, recalled the Indian Offshoring Manager. In the post-offshoring phase, improvements were suggested through formal practices such as Kaizen and Six Sigma by offshored management. The initial count of 13 agents in Denmark and Sweden fluctuated during transition and levelled off at 11 agents in the post-offshoring phase.

In the transition phase, the educational background of agents changed from administrators to marine and business administration. During transition, special emphasis was placed upon engineering and technical degrees, as task expertise became the most important requirement. Task resources changed from possessing very high levels of task, firm and industry experience to low levels, where a clear need for training was identified. Although industry knowledge was a prerequisite for an individual to be hired, task experience was not a major requirement. The Head of Demurrage in the onshore business unit explained the misconceptions: *"Initially in the service centre some of the first people we had were not so good because they were hiring a little bit low for the kind of work we had. But then in the second and last batch when [the Head of Offshoring, onshore unit] had been involved in the hiring process they've got some really good people"*.

Alignment of tasks. The change of skillsets from onshore employees with considerable experience in the demurrage department to new, inexperienced offshore employees changed the task execution. New employees at the beginning of transition hardly had task experience and only some industry experience. This instigated offshore staff to develop standard manuals. The low level of task experience called for development of SOPs, supplemented by databases. The changed task execution prompted a quality analysis. Prior to offshoring, task quality was not subject to assessment, arguably due to the complexity of the task and ingrained reliance on personal judgment. Hence, standardization of the task execution towards more rules based decision making was aligned with

quantifiable measures of quality (delivery time, registered errors, customer complaints, etc.), which then led to another change of service execution in the post-offshoring phase, as attempts were made to further optimize tasks through practices like Kaizen and Six Sigma.

DISCUSSION

We now draw on these cases to establish commonalities and differences between them, presenting key findings that address how offshoring of a service elicits a reconfiguration of its service production system. We observe that the service production system was characterized by stability prior to offshoring, as the systems were not subject to active on-going improvement efforts.

Misalignment of the service production system

Institutional and factor endowment differences between the offshore and onshore locations, rather than any firm specific variables, played a key role in determining the extent of change of the service production system, particularly the resources deployed. The educational background of the agents hired at the offshore location was equivalent or even higher than that onshore (e.g. at the demurrage case), yet it came at a lower cost. However, a lack of industry and firm specific knowledge negatively affected the ability of offshore agents to undertake tasks as they were previously defined, even if they had task experience.

In fact, business experience levels of the agents dropped significantly in all cases, particularly in the transition phase. For example, the market intelligence service requires a deep understanding of the maritime industry. The more such knowledge and experience was missing, the more important the training of the agents became. The change of agents caused the production system to destabilize. The skill sets of the new agents did not fit well with the old way of executing tasks. The enforcement of a change of agents impacted structures, reflecting the duality between agents and structures (Feldman and Orlikowski, 2011). The systems equilibrium became unstable, causing change and the request to restore and reinforce stability. However these changes produced considerable confusion and

structural changes, inducing agents to instigate various responses (actions). Thus we find:

Key finding # 1: Offshoring of the service production system leads to misalignment between task resources (agents) and task execution (practices).

Realignment of the service production system

The changes inflicted on one part of the service production system created an imbalance of the system and misalignment of system components. These imbalances called for the need to realign the system components. Thus, actions of agents that combat this misalignment were needed, demonstrating that actions and changing structures mutually reinforced each other (Feldman and Orlikowski, 2011). This misalignment between resources and tasks produced responses from two types of agents- initially from management and, over time, from employees executing the service. The response came in the form of changes in the structure of the service production system.

We start our analysis with the response from the former type of agents – the management. To help cope with the lack of experience and inside knowledge of frontline employees, management introduced several changes, including the formulation of SOPs. This lowered the degree of coordination required, i.e. decoupling took place (Thompson, 1967), at the same time lowering the degree of discretion granted to those executing the task. Before offshoring occurred, the tasks lacked standardization. They were often highly discretionary and knowledge intensive. However, some standardization took place during the transition phase. Furthermore, the need for coordination decreased because tasks became less integrated and were unbundled. Although essential information for task execution was still often sourced from within the respective business unit, the integration level dropped during transition and even more so in the post-offshoring phase.

This rises the question what determines the extent of such changes. Our key observation here is that this change mainly depends on the initial structure of task execution. The more the execution process was documented, the lower the degree of coordination would be required. As a result, less structural change was evident

in our cases. More change was visible among those activities that lacked explicit and formal descriptions. Thus, we find:

Key finding # 2: The restructuring of resources (hiring of new agents) performing the service tasks prompted a top-down change of task execution practices during the offshoring transition phase.

In the transition phase, we observed actions by agents that were intended to realign the structure of the service production system. Specifically, frontline employees attempted to compensate for their initial lack of task experience and firm knowledge by demonstrating high levels of motivation. The offshore employees were highly motivated, especially for tasks involving a high level of discretion. Similarly, being aware of the loss of expertise, onshore employees tried to impose a more rigorous structure and started to document as many steps as possible in SOPs.

However, this standardization was influenced by initial service characteristics and a high degree of discretion. In some instances, standardization of the task and codification / documentation was difficult. In some of the more discretionary cases, this caused some of the SOPs and documents to lack clarity and detail. Once the offshore unit took over full responsibility of tasks, the degree of task coordination changed further. Offshore frontline employees tried to further standardize the tasks through formal efficiency improvements such as Kaizen or Six Sigma, often in conjunction with the development of more and clearer SOPs. These actions were formally supported by the Global Service Center in Afloat and even rewarded. Thus, the motivation to improve efficiency and, in most cases, to standardize the task was high. Thus, we find:

Key finding # 3: During the transition and post-offshoring phase frontline employees, both onshore and offshore, engaged in bottom-up changes of task execution.

The change in task ownership led to improvements and efficiencies in task execution. Hence, the components of the service production system, the task

execution procedures and the executing resources became more aligned over time. Thus, we find:

Key finding # 4: During the transition and post-offshoring phases, the stability of the service production system was re-established through top-down and bottom-up changes of task execution, which in combination realigned task execution and resources.

Changes in measures of output quality

The quality measures of the task output changed significantly through a sequence of structural changes and actions of agents. Since the quality of the tasks was never formally traced before offshoring, it was difficult for the onshore business unit to trace quality improvements. However, the change of agents highlighted the perception of task quality and there was an attempt to implement measures of quality. In the absence of previous experience with measuring discretionary services, the implemented measures were highly quantitative and focused on turnaround time, rather than the actual quality of the task. More qualitative measures, determining the client's perception of the value of the services, were, in most cases, implemented in the post-offshoring phase through client surveys.

Over the observed period, we also witnessed changes in the *costs* of measuring the output quality. In the pre-offshoring phase, audit prices were higher and high audit prices were also accepted during transition. These prices only really dropped to lower levels once the task had been offshored. This is consistent with hidden cost logic (Larsen et al., 2013). When offshoring is initiated, some unexpected transitioning costs occur. We see such costs as the costs of misalignment in the service production system. Thus, we find:

Key finding # 5: During the transition phase, measures of task output typically did not improve. In some cases, costs even increased due to hidden costs of misalignment between task resources and task practices. Quality measures of task output only improved in the post-offshoring phase as resources and tasks were eventually aligned.

Wider implications for offshoring

First, we suggest that over time, offshoring seems to produce a redefinition of service task execution towards more standardization. There is some irony in this, as we observed services that lacked standardization when performed onshore, were driven heavily by the experience of frontline employees, and should therefore be deemed unsuitable for offshoring. What appeared to be a ‘wrong’ decision to offshore these services turned out to work well, because the service production system has a large ability to correct itself through an interaction of structure and actions of agents.

Secondly, we observed that offshoring induced a change towards more highly educated resources (frontline employees). In other words, these employees appear ‘overqualified’ for the tasks they perform. Such use of overqualified staff will put significant pressure on the limited capacity of the labour force in emerging countries such as India, which in turn will lead to dwindling cost advantages of emerging countries over developed economies. Thus, we observe at a micro level what in some quarters is starting to be hailed as ‘the end of offshoring’ (The Economist, 2013), the prediction that the net flow of services activities from developed to emerging economies may no longer be positive in perhaps a decade from now. Related to this, we believe a third implication of our work may be that offshore providers of services will increasingly struggle to attain the desired price / quality relationship.

The importance of diligent human resource management appears as a final implication of our analysis. Particularly the demurrage service case points to the importance of balancing service task procedures and human resources of the offshore business unit. In a sense, task standardization may be considered a ‘double-edged sword’. Clearly, task standardization lowers the skill and experience requirements of the frontline employees offshore. However, given the employees’ ability to make workable, discrete decisions, task standardization may easily push beyond what is needed. A probable consequence of ‘over-standardization’ is a lower service level due to obstinate decisions in non-trivial client cases.

Another concern is demotivation of employees due to alienation and degradation of their skill sets, and consequently high attrition rates. The management implication is to either moderate the level of standardization, thereby retaining

highly qualified employees, or to push standardization to its limits and replace with less qualified (and cheaper) employees - perhaps retaining a few experienced individuals to handle non-trivial client cases. In any case, finding the right balance between task execution procedures and human resource qualifications in an offshoring context is a continuous adjustment and alignment process, presenting challenges for managers and frontline employees.

Contributions to practice theory and service production theory

This paper provides an application of practice theory in a novel area, the production of services. From the perspective of practice theory this is a very useful extension, as it demonstrates its wider applicability. Perhaps more importantly, we maintain that this paper provides key lessons for service production theory, which extend beyond how services production may be affected by offshoring. In particular, we have proposed a novel representation of the service production system, arguing that service task execution and task resources, within an environmental context, jointly determine task outputs. Using practice theory, we have explained how this representation is in essence a structure of service production, which has a mutually reinforcing relationship with the actions of agents, be they frontline employees or managers. This produces important insights into how service production systems change over time, namely through recurring loops between structures that enable and constrain agents and agents who shape structures. Furthermore, our work highlights how misalignment between service task execution and resources is corrected by the interaction between structure and agents. At last, a key conclusion is that service production systems are more robust than might be expected and has a strong ability to self-correct any misalignment that may emerge from exogenous shocks.

CONCLUSION AND LIMITATION

We have sought to answer the question how re-alignment of the components of a service production system, namely execution, resources, and outputs, takes place when this system is affected by an exogenous shock in the form of offshoring. We characterized these components and suggested that there is a continuing need to align them. Our evidence suggests that this alignment process may not be

particularly well planned, i.e. the orchestration of resources does not necessarily start from a firm's capabilities, but may be more bottom-up in nature, where the change in resources that occurs when firms offshore leads to a subsequent change in task execution. Over time, the task execution moved from discretionary services towards rules based services. This suggests that offshoring may be a somewhat self-reinforcing process. Tasks can more easily be performed offshore if they are rules based, due to the ability to codify such tasks, yet the act of offshoring also makes tasks more rules based, thereby making it easier to offshore them.

This research potentially suffers from some retrospective biases and does not allow us to engage in generalization. However, we investigated multiple cases, examined the production process in significant detail and were able to distinguish multiple phases of the offshoring process. The case studies were conducted in a rigorous and explanatory manner, providing rich data to further develop theory (McCucheon and Meredith, 1993; Stuart et al., 2002). Future research could analyse the effect of other exogenous shocks to service production, such as outsourcing. It could additionally take a comparative, cross-firm perspective, especially to assess the role of capabilities.

Our paper presents significant findings for practitioners and academics. It offers insights to practitioners regarding how to configure and re-configure service production systems in order to achieve a certain level of stability. We decomposed the service production system into its basic components: task output, execution and resources. Furthermore, we describe organizational and managerial processes towards the alignment of components in practice. Indeed, as the offshoring phenomenon continues to develop, we call on researchers to provide more such dynamic and in-depth insights.

Appendix 2.1 – Interview guide

General questions

- explain position, background and daily duties?
- previous offshoring activities (client/service provider)

Background information on the offshored service

- characteristics of offshored service
- reasons to offshore (to the GSC)
- decisions around offshoring
- time since offshored
- knowledge intensity of the service
- importance of the service to the client
- GSC involvement in decision making process

Service production process before offshoring

- previous production of service
- who produced service
- how was service produced

Transition process

- planning/strategy of transition
- execution of transition
- activities/responsibilities of client/service provider in transition
- interaction and communication between client and service provider
- uncertainties/challenges faced when transferring
- ship and fix or fix and ship approach

Re-integration of service

- planning/strategy of offshored production process
- execution of service production process
- monitoring of service production
- change of service production
- change of service characteristics
- impact of activities on organization

Appendix 2.2 - Definition of production system features of task outputs, execution and resources for data analysis

			Definition
Task output	Quality		Measurement of quality e.g. qualitative through discussions or quantitative through surveys
	Audit		Audits related to the services are low, moderate, or high
Task execution	Standardization		Services are discretionary (e.g. comparably much judgment) or rules based (e.g. based on SOPs)
	Co-ordination	Integration level	Importance of services to the day-to-day business is low, medium, high
		Improvements	Services are improved through formal or informal mechanisms
		Size (FTEs)	Number of full time employees producing the service
Task resources	Formal education & training	Formal education	Degree/education level and field of employees producing the service
		Training	Training is structured (e.g. seminars, classes, learning, certificates) or unstructured (e.g. practical, shadowing, learning-by-doing)
	Business expertise	Firm expertise	Experience on firm specific characteristics is low, moderate or high
		Task expertise	Experience on task is low, moderate or high
		Industry expertise	Experience in industry is low, moderate or high

CHAPTER 3

So Far, yet so Near: The Effect of Cognitive Distance on Production of Knowledge-intensive Business Services

Michael J. Mol
Copenhagen Business School

Kristin Brandl
Copenhagen Business School

Abstract

The rise in offshoring of knowledge-intensive business services (KIBS), with a physical separation between client and service provider, is a major trend in practice and challenges our existing theories of organization. In this paper, we build on economizing and in particular, cognitive distance, to understand how cost and value outcomes of such services change with separation. Using an illustrative case study, we particularly focus on activity decomposability, firm experience, and repeated relationships as drivers of cost and value outcomes. This discussion helps to understand when offshoring may occur and how service production processes change over time. We contribute to the understanding of offshoring and service operations as well as to debates regarding the merits of integrating cognitive and economizing perspectives. The overall outcome of the paper is that it provides an activity-driven framework of cognitively distant KIBS production.

Keywords: Cognitive distance, costs, knowledge-intensive business services, offshoring, services production, value creation

INTRODUCTION

Knowledge-intensive services are a major and increasing contributor to economic activity, particularly in advanced economies, and have therefore been studied widely in recent decades (e.g. Alvesson 1993; 2011; Kipping and Kirkpatrick, 2013; Muller and Zenker, 2001; Starbuck, 1992). For example, it was conservatively estimated in 2009 that these services make up 5.3 percent of U.S. economic activity (US Census Bureau, 2012). Knowledge-intensive business services (KIBS) have various characteristics, clearly setting them apart from less knowledge-intensive services and manufacturing activities, which are related to service contents, who produces the services, where they are produced, and for whom they are produced (Bettencourt, Ostrom, Brown and Roundtree, 2002; Bowman and Swart, 2007; Den Hertog, 2000; Murray, Kotabe and Westjohn, 2009; Mudambi and Tallman, 2010; Starbuck, 1992). These characteristics and especially the (tacit) knowledge inherent in KIBS (Alvesson, 2001; Empson, 2001; Kärreman, 2010), imply that producing KIBS poses more serious challenges for practitioners and that KIBS are worthy of continuous scholarly effort.

We define KIBS as “value added activities [that] consist of the accumulation, creation, or dissemination of knowledge for the purpose of developing a customized service [...] to satisfy the client's needs” (Bettencourt et al, 2002: 100-101). Examples include R&D activities in pharmaceuticals, equity research in banks, and internal or external consulting services. We acknowledge that the services are undertaken by a provider for a client, are embedded in the client's context, and depend on skills and judgment of experts (Alvesson, 1993; Maister, 2003; Starbuck, 1992)¹.

Undoubtedly the most important change affecting KIBS over the past decade has been the previously unimaginable rise in offshoring of KIBS production (Metters and Verma; 2008; Mudambi and Tallman, 2010; Youngdahl and Ramaswamy, 2008), including legal services (Harmon, 2008), research and development

¹ We prefer KIBS to the related term professional services (Löwendahl 2005; Von Nordenflycht, 2010) as KIBS clarifies that the services are produced for business clients, not consumers, unlike some professional services. Consumers as clients would not normally source services offshore. We acknowledge the importance of professionals, but focus on the services.

(Bertrand and Mol, 2013; Nieto and Rodriguez, 2011), and financial services (Jensen, 2012). We define offshoring as the sourcing of activities, either internal (captive) or external (outsourced), from another geographical location in order to support a firm's domestic or global operations, in line with Manning et al. (2008). We acknowledge differing degrees of complexity of offshoring arrangements and the fact that offshoring can take place in nearby and far-away destinations (where 'near' and 'far' refer to how distant individuals, on the client and provider side, feel they are from each other). We see geographic relocation of services across country borders as a drastic case of decoupling services production and consumption, which should significantly affect services. Note, however, that our arguments also apply to less drastic cases. Decisions to source services across country borders are often driven by the dual aims of capitalizing on cost advantages and obtaining access to skilled labour (Manning, Massini and Lewin, 2008; Maskell, Pedersen, Petersen and Dick-Nielsen, 2007; Farrell, 2005) and from an underlying belief that offshoring may help firms transform themselves (Lewin, Massini and Peeters, 2009).

There is, in other words, a belief that offshoring leads to changes in cost and value outcomes of KIBS. We interpret costs as the overall expenses associated with a service for clients, including both production and transaction costs (Williamson, 1985). In relationships between an onshore client and an offshore provider, parties are not only concerned with transaction cost minimization; they equally pursue the creation of transaction value (Zajac and Olsen, 1993). KIBS create rents through the exploitation of information asymmetries generated through selected human skills, logistical capabilities and knowledge stocks that are difficult to replicate (Quinn, 1992). The value creation logic of these services is the creation of value for the knowledge receiver and hence, in the KIBS context, we see transaction value as new knowledge creation for the client (Normann and Ramirez, 1994; Stabell and Fjeldstad, 1998).

Offshoring and perhaps any physical separation of production and consumption of high value activities, challenge the existing theories of organization. For instance, international business and economic theories have traditionally assumed that high value activities ought to be undertaken at home (e.g., Dunning, 1993). Additionally, they predict difficulties in offshoring of knowledge-intensive activities, as these employ specific assets that are costly to transfer across borders (Buckley and Casson, 1976; Williamson, 1985) and are based around a firm's core

competencies (Prahalad and Hamel, 1990). Consequently, we see KIBS offshoring as a ‘natural experiment’ that enables us to study the impact of a physical separation of service production and consumption that such theories considered unfeasible.

While the commonly used “economizing” (Williamson, 1991: 1999) approaches of transaction cost economics and the resource-based view of the firm (RBV) allow foundational insights into the costs of offshoring, additional perspectives are required for understanding new knowledge creation (Argote, McEvily and Reagans, 2003). We argue that significant explanatory power can be obtained from cognitive theories that use different explanatory mechanisms and are focused on individuals (Gavetti, Greve, Levinthal and Ocasio, 2012; Levinthal, 2011; Nooteboom, 2009). Specifically, we argue that offshoring involves an increase in cognitive distance (CD) because the individuals involved have varying backgrounds and experiences. We discuss how this CD moderates economizing explanations of costs and alters value outcomes and the organization of KIBS production.

Therefore, the central question of this paper is: *How does an increase in cognitive distance through offshoring change the production of KIBS, including cost and value outcomes?* This question is complex and multifaceted, involving factors at the national and organizational level, as well as a consideration of individuals’ cognitive frameworks. Our focus is predominantly on the service activities themselves, not on the firms producing and / or consuming them, and we compare offshoring to the default option of domestic (onshore) production. We focus on location as the driver of distance, ignoring questions of ownership (outsourcing), which the literature has previously addressed (e.g., Murray and Kotabe, 1999).

Our work produces several contributions. First, we enhance the international management literature on offshoring by taking a process view, applying the cognition perspective, and examining modular production in a stage-by-stage manner (e.g. Bertrand and Mol, 2013; Lewin et al, 2009; Luo et al., 2012; Mudambi, 2008). Second, we enrich work on service operations management (e.g., Den Hertog, 2000; Goldstein et al., 2002) in two ways, providing a detailed picture of services design and a stronger theoretical basis, as well as arguing that physical separation of clients and providers leads to changes in service design over time.

Third, we contribute to the wider strategy and organization literature by demonstrating that the economizing and behavioural as well as cognitive theories can generate complementary insights and that a micro-foundational, individually based analysis can help understand firm level processes (Felin and Foss, 2011; Levinthal, 2011). Ultimately, the contribution of the paper is its provision of an activity-driven framework of cognitively distant KIBS production.

Next, we discuss costs and value in the KIBS production process employing economizing and cognitive approaches before turning to three specific factors, which the governance literature (e.g., Barney, 1999; Dyer and Singh, 1998; Williamson, 1991) suggests affect costs and value; namely transactions (specifically decomposability of services), firms (particularly provider and client experience), and relationships (especially repeated production). This paper utilizes an illustrative case study. Finally, we develop the implications of our work in more detail.

KIBS: COSTS AND VALUE

There has been some work describing the design of KIBS and its production process (Den Hertog, 2000), however, research has mainly focused on the design of services in general (c.f. Goldstein, Johnson, Duffy and Rao, 2002; Mills, Chase, and Margulies, 1983; Sasser, Olsen and Wyckoff, 1978). For example, Goldstein et al. (2002) emphasize the service concept in the production and design of services and produce a service design-planning model with three consecutive stages including inputs and outputs. Similarly, Den Hertog (2001) emphasizes service innovations and client interaction, service delivery and technological dimensions of services design. However, this work does not incorporate the idea that a service production process consists of multiple stages (Stabell and Fjeldstad, 1998), nor does it examine physical separation of clients and providers.

The production of KIBS invariably involves tacit knowledge, which is difficult to transfer effectively across locations and organizations (Szulanski, 1996). Moreover, KIBS are often deeply embedded in client contexts through organizational processes and values and are used for the production of value in the client's operations or for its own customers. The service characteristics of KIBS inherently imply co-production between client and provider although the tightness

of the link between the client and the provider may vary from one service to the next (Bettencourt et al, 2002; Cohen and Levinthal, 1990; Landry, Amara and Doloreux, 2001).

The strong involvement of professionals in the production of KIBS results in a socially constructed, context specific, and ambiguous service context based on experts' personal judgments (Alverson, 1993). Combined with the difficulties of standardizing activities that arise from the need for service customization (Løwendahl, 1997; Bettencourt et al., 2002), this has long been seen to make KIBS offshoring impossible (Stabell and Fjeldstad, 1998). However, recent management practice of KIBS offshoring sheds doubt on this (Mudambi and Tallman, 2010).

In order to explain the phenomenon, we move on to discuss costs and value through economizing and cognitive perspectives. This approach is in line with recent theoretical developments in strategy and organization research. March (2006), to mention one example, provides a rich account of how managerial decision-making processes follow complex behavioral patterns where actors' limited cognitions affect both how choices are made and what decisions emerge. Work on CD (Nooteboom, 2009) stresses how differing cognitions of senders and recipients can lead to positive innovation and value creation outcomes, providing that such differences can be bridged through sufficient absorptive capacity (Cohen and Levinthal, 1990). Levinthal (2011) presents a general case for the complementarity of cognitive theories and economizing theories in strategy research, while Gavetti et al. (2012) makes a case for the use of cognitive theories in the study of governance modes, including offshoring. We believe, with one exception (Bertrand and Mol, 2013), that the cognitive approach is new to offshoring. Table 3.1 presents key characteristics of the chosen approaches to provide a summary and support our arguments.

Table 3.1: Characteristics and predictions of perspectives used

	Transaction cost economics	Resource-based view	Cognitive distance
Fundamental work	Williamson (1975, 1985)	Barney (1991); Wernerfelt (1984)	Montello (1991); Nooteboom (2009)
Basic premises	Firms minimize sum of transaction and production costs	Production costs are heterogeneous across firms and locations	People perceive, interpret, understand and evaluate the world differently
Application to offshoring	e.g. Lewin et al. (2009), Mudambi & Venzin (2010)	e.g. Kedia & Lahiri (2007), Jensen (2012)	Bertrand & Mol (2013)
Effect of offshoring on costs	Offshoring trades in production costs for transaction costs. Asset specificity and uncertainty, especially in joint presence of asset specificity, make offshoring harder	Offshoring occurs when offshore resource endowment (production costs) is better than onshore endowment	Offshoring increases costs of overcoming CD
Effect of offshoring on value	-	When recombination of existing knowledge assets through capabilities is complex, onshore production will be preferred	CD from offshoring creates value but also need for absorptive capacity
Effect of continued offshoring	Lowers transaction costs	Strengthens resources through experience	Bridges CD
Separation of stages	Possible only where these can be considered to be separate transactions	Resources may be deployed across multiple stages	Stages are interdependent

Costs

Our understanding of the sources of costs in KIBS starts with insights produced by what Williamson (1991) calls the economizing approach. This is “principally concerned with efficiency theories” (Williamson, 1991: 75) and incorporates transaction cost economics and the resource-based view (Williamson, 1999). However, we propose that additional insights can be gained from using a cognitive angle, especially the notion of CD (Bertrand and Mol, 2013; Nooteboom, 2009)². CD means, “people will perceive, interpret, understand and evaluate the world differently to the extent that they have constructed their cognition along different, weakly connected life paths” (Nooteboom, 2009: 66-67).

Resources owned, acquired and developed by a firm need to be strategically allocated in order to create value (Ansari and Munir, 2008). In a KIBS context, knowledgeable experts are considered to be the key resources, but it is equally the ability to employ and allocate those resources effectively that matters (Helfat et al., 2007). Furthermore, in offshoring in particular, cognitive differences may induce additional transaction costs (Nooteboom, 2009). Misunderstandings due to linguistic differences may, for instance, lead to the need to repeat parts of KIBS production.

As a result, production costs fluctuate significantly over time and across production processes. The effect of offshoring on the costs of KIBS should result in an increase in transaction costs, because of the complications of transacting across borders (Buckley and Casson, 1976). However, concomitantly there will be a decrease in production costs, the size of which depends on the relative strength of onshore and offshore resources that used to produce the service.

Value

In a services context, value creation is not easily deciphered, especially in relation to KIBS (Bowman and Swart, 2007). KIBS operations are not based on linear production processes with regular inputs, transformations and outputs, making reliable and consistent measurement of value challenging (Løwendahl, 2005). Additionally, it is generally not possible to accurately predict value *ex ante* as

² We note that the economizing and CD are different, yet share some of the same roots in the Carnegie school.

knowledge that has not yet been created has an uncertain value, particularly if it entails a high degree of novelty. Knowledge production, application and preservation are strongly intertwined activities (Starbuck, 1992). There is disagreement in the literature as to whether knowledge is primarily a firm level or an individual-level attribute.

We follow Grant (1996) in arguing for the latter, as KIBS are strongly reliant on individual experts (Bowman and Swart, 2007). Value creation in KIBS has various characteristics. First, the process of value creation is dynamic and either complements a client's internal activities or generates value for external use (Normann and Ramirez, 1994). Second, as Normann and Ramirez (1994) emphasize, in order to create value, the client has to capitalize on cost reduction, increased speed, quality, or reliability. However, the lack of measurability of services inputs, transformations, and outputs increases the analytical complexity of KIBS.

Building upon this understanding of new knowledge as the source of value creation in KIBS, we explore the consequences of using different production modes for value creation. The transaction cost perspective is not particularly helpful for understanding where and how value is created in transactions as it holds value constant (Williamson, 1991; Zajac and Olsen, 1993). The RBV, concerning the production of new knowledge, states that it is the recombination of existing knowledge assets through capabilities that helps firms to create new knowledge assets (Teece, Pisano and Shuen, 1997). If such capabilities are of major significance in an activity, i.e. when recombination is complex, onshore production will be preferred to offshoring.

From a CD perspective, organizations are seen as cognitive focusing devices (Nooteboom, 2009; Kaplan 2011), which somewhat limits CD within organizations. Likewise, CD within a country is relatively small, due to shared institutions and culture, in comparison to the CD between countries that is the result of offshoring. This larger CD, in the case of offshore KIBS production, can be beneficial for value creation purposes, because it allows for recombination of heterogeneous knowledge inputs (Bertrand and Mol, 2013; Rodan and Galunic, 2004).

However, distance often produces positive and negative effects simultaneously (Reus and Lamont, 2009). The more KIBS production gets offshored and the more distant the sources are, the more heterogeneous knowledge will be. Yet the marginal returns of adding further heterogeneity will decrease. This decrease is simply because as the stock of heterogeneity of knowledge in an activity goes up, any knowledge encountered from further sources is less likely to be novel – the more you know, the less there is to learn. More importantly, any knowledge recipient has a limited capacity to absorb new knowledge; beyond that threshold, additional heterogeneity may have a negative effect (Cohen and Levinthal, 1990). In other words, as the individuals within onshore clients and offshore providers become more distant, they are better able to jointly create new knowledge. However, if the distance extends beyond the absorptive capacity of individuals within clients and providers, knowledge creation actually suffers. It has, therefore, been suggested (Nooteboom, 2009) that the relationship between CD and knowledge creation is negative curvilinear (an inverted U-shape). This implies that decision-makers can choose ‘optimal’ offshoring levels for KIBS production, yet may also encounter a less than optimal or more than optimal distance.

Service Production Process

In order to illustrate what a KIBS production process could look like, we present an illustrative case from a Scandinavian shipping firm that we will call ‘Floatank’. Floatank offshored production process parts of its demurrage services³ to an Indian firm internal (captive) global services centre (GSC). In order to divide the service production process into underlying stages, we draw upon Stabell and Fjeldstad (1998: 423-424, emphases added), who suggest that there are five such stages:

³ Demurrage is the time period during which a charterer (the client) remains in possession of a vessel, after the vessel reached the port of destination by not unloading the transported cargo in the contractually agreed time. It refers to the charge the charterer (the client) pays the vessel owner as a result of the delay and the extra use of the vessel. These charges are ad hoc and consider contractual regulations, overtime, cargo/freight load, and seaport regulations. Demurrage charges require the analyst to have legal knowledge and experience in the shipping industry in order to prepare claims and negotiate with clients to agree upon the height of the demurrage claim.

- "*Problem-finding and acquisition*. Activities associated with the recording, reviewing, and formulating of the problem to be solved and choosing the overall approach to solving the problem". In Floatank, the demurrage production process starts with the identification of a contract violation equivalent to the problem-finding stage. Thus, the analyst identifies when a charterer / client remains in possession of a vessel and does not unload the transported cargo on time.
- "*Problem-solving*. Activities associated with generating and evaluating alternative solutions." In order to "solve this problem", the demurrage analyst at Floatank studies the contractual agreements and vessel, as well as port regulations, to calculate a demurrage claim for this overtime.
- "*Choice*. Activities associated with choosing among alternative problem solutions." At Floatank, the analyst decides upon the legal ground for the demurrage claim based on his or her own judgment and knowledge.
- "*Execution*. Activities associated with communicating, organizing, and implementing the chosen solution." At Floatank, the claim is calculated and distributed to the charterer. This execution stage often includes interaction between the demurrage analyst and a representative of the charter client, as the interpretations of regulations and contracts differ between the two parties due to diverging interests. The negotiations are settled once the charterer and demurrage analyst come to an agreement and the charterer pays the fine.
- "*Monitoring and evaluation*. Activities associated with measuring and evaluating to what extent implementation has solved the initial problem statement." In our demurrage case, the accounting department is responsible for monitoring the incoming payment. The overall claim preparation and client relationship is also monitored and evaluated.

Stabell and Fjeldstad (1998) use the term *value shop* to refer to the combined stages, and suggest it applies to all KIBS. Additionally, the authors argue that the stages are reciprocal and can be interdependent. KIBS production normally consists of both a hierarchy and a sequence of value shops (Stabell and Fjeldstad, 1998). A hierarchy implies that there is some overall service, which can be

conceived of as a value shop and can only be delivered through various smaller services, each of these being value shops as well. Stabell and Fjeldstad (1998) refer to this as "wheels-within-wheels". Some smaller value shops may occur in parallel. Similarly, in research regarding service innovations, Van der Aa and Elfring (2002) emphasize different forms of service innovation such as the reproduction of services in multiple units or the new combination of services activities, parts, or segments.

OFFSHORING, COSTS, AND VALUE CREATION

We are now in a position to investigate how offshoring affects cost levels and value creation in each of the stages and how combined cost and value outcomes make it more or less likely that a stage is offshored⁴ (Table 3.2 states the expected effects for each of the stages relative to other stages). Production cost gains and transaction cost losses, incurred by offshoring an activity, are not over in different production stages because they depend on the transaction characteristics of and relative resource endowments for a particular stage. For instance, some stages involve the use of large numbers of professionals or a great amount of working hours, thus, offering a larger potential for production cost savings through offshoring.

Returning to our illustrative case, in 2009, Floatank struggled to operate its demurrage services cost effectively and with the required quality level onsite. Floatank's Global Demurrage Leader (2012) explained, "*The main reason to offshore, I think, was the opportunity to improve the services without losing quality. The impression was that we could improve the service and for sure the costs were an issue*". As a consequence, external consultants and internal managers suggested offshoring of parts of the service production, such as the problem-solving stage (the search of contract, port, and vessel regulations, as well as preliminary demurrage claim calculations) to GSC located in India in search of production cost savings.

⁴ Stabell and Fjeldstad (1998: 421) maintain that KIBS production cannot be offshored as organizations "often both improve performance and reduce costs by incorporating the object worked on." This was perhaps a reasonable argument at the time of writing, however, empirical reality has changed and many offshored activities are ostensibly KIBS. We will, however, demonstrate that parts of KIBS are still difficult to offshore.

Table 3.2: Most Salient Features of the Stages of the Value Shop and Effects of Offshoring Relative to Other Stage

Stage	Illustrative case – Demurrage	Salient features	Effect on production costs	Effect of offshoring on value	Likelihood of offshoring
Problem-finding & acquisition	Identifying contract violation	High uncertainty Specific assets Context dependency Strong client resources	Negligible	Optimal level low and large drops from deviations	Low
Problem solving	Study of contracts, vessel and port regulations	Codified knowledge Strong provider resources	Significant reduction	Optimal level high and small drops from deviations	High
Choice	Decision to claim demurrage	High uncertainty Context dependency Strong client resources	Negligible	Optimal level low and large drops from deviations	Low
Execution	Calculating demurrage claim and negotiating claim with client	Codified knowledge Strong provider resources	Significant reduction	Optimal level high and large drops from deviations	High
Monitoring & evaluation	Monitoring claims and client satisfaction	Integrative capabilities Strong client resources Context dependency Specific assets	Negligible	Optimal level low and large drops from deviations	Low to moderate

Turning to value creation, the CD logic, supplemented by the RBV, suggests that the value effects are relatively complex. For the relationship between offshoring and value outcomes, we predict: a) a shape, namely the inverted U as argued above; b) an optimal point at the top of the curve; c) a steepness of the curve. The optimal point tells us how much offshoring ought to take place in a particular production stage, relative to other stages. The steepness of the curve, again relative to other stages, tells us how much value is lost if too much or too little offshoring takes place relative to the optimal point. So our argument is not necessarily that decision-makers strive to maximize CD. In the testing of new software by offshore engineers, very limited CD may be desirable as value creation is not a significant driver of offshoring, while cost reductions are.

After offshoring the problem-solving stage, Floatank still identified at the onshore location when freight was not unloaded on time (problem-finding), sent the offshoring provider information about the vessel contract and known regulation issues (supporting parts of the problem-solving stage), controlled the claims calculation and communicated with the client (part of the execution stage). Instead of making the service more cost efficient through the reduction of production costs, there turned out to be a significant increase in transaction costs and confusion of task ownership.

Offshore employees used information provided by onshore employees and information they gathered themselves to calculate the demurrage charge, but were unable to communicate these directly to the client for negotiations. However, this step is essential for the demurrage analyst to understand issues with the claim and to receive valuable feedback from the client, but also from the onshore location for future claims and (intangible) client specific behavioural knowledge. The GSC Demurrage Team Leader (2013) at the offshore location explained, *“We realized by splitting up the process they were sort of preventing to get the full learning, which occurs through the communication with the charterers. You really learn to operationalize the cases with their charter parties so in terms of how it worked out”*. In other words, the level of offshoring and accompanying cognitive distance were too low to achieve the best value outcomes.

Combining costs and value and following a straightforward alignment argument (Williamson, 1991), we further propose that the more positive the overall outcome associated with offshoring relative to other stages, i.e. in terms of costs *and* value

creation (Zajac and Olsen, 1993), the more likely it is that a stage will be offshored. In other words, the larger the net benefits of offshoring, the more likely a stage will be offshored. At Floatank, a similar argument led to the initial decision to offshore only the problem-solving stage. *“There was the impression that we couldn't offshore the entire service so there was the idea that the first part of preparing the claims and the analysis, which is quite work intensive and you have to review a lot of papers, could be offshored, but then the follow-up on the claims in getting the feedback from the customers and if they were happy or not was a double-check if the work was done good. We couldn't let the task be completely done there [in India] at the beginning it had to be a longer timeframe. Somebody from Copenhagen had to make sure that they were first on the right track”* (Floatank's Global Demurrage Leader, 2013).

The first problem-finding stage is highly uncertain, context dependent and important to the entire production process because the cyclical process format implies that subsequent stages will be influenced by previous decisions and activities (Mintzberg, Raisinghani and Théorêt, 1976). These characteristics require extensive organizational knowledge and a direct connection to projects (Lewin et al., 2009). Transferring such experts across geographical borders undermines potential production cost savings and alternative means of distributing information will likely fail due to difficulties in transferring the vast amount of tacit knowledge in this stage (Landry et al., 2001; Szulanski, 1996). Once experts become removed from the origin of the problem, they will find it (increasingly) difficult to produce valuable solutions due to increased CD.

The second stage of problem-solving, by contrast, involves more analytical work, which can be accomplished with limited direct customer contact (Stabell and Fjeldstad, 1998). There is significant involvement of professionals in this stage, but as the nature of the problem is now known, the codification of this knowledge into a set of problem responses can be developed in a relatively straightforward manner (Laundry et al., 2001). This shifts managerial attention toward the acquisition and allocation of appropriate resources, a task where the onshore client firm does not necessarily hold production cost advantages over the offshore provider (Maskell et al., 2007). This implies that the production cost advantages of offshoring are potentially large during this stage, while transaction cost disadvantages may be relatively limited. The CD associated with problem solving is relatively limited, because solutions have been framed and can be devised in a

fairly standardized manner (Stabell and Fjeldstad, 1998). However, the upside of creating new value could, therefore, also be limited.

The third stage, choice, requires high-level involvement in designing the service, an activity that is less labour and time intensive (Stabell and Fjeldstad, 1998). Hence, the potential for cost savings through offshoring of this stage will be limited. It is likely that optimal CD between an individual of a client and an offshore provider will be low for choice activities as the client context is of importance. Consequently, the impact of this stage on overall value creation is significant and—with the difficulties in overcoming CD—offshoring presents a risky choice. Due to the potential downside in terms of value creation and limited cost savings, decision-makers might hesitate to offshore the choice stage.

The fourth and largest stage of a production process will often be its actual execution, taking both the most time and the most human resources (Stabell and Fjeldstad, 1998). The implementation of strategy processes strongly depends on middle managers and frontline employees (Hutzschenreuter and Kleindienst, 2006), implying that production cost differences play a large role in determining the most appropriate production mode for execution and this provides a means to significantly reduce overall costs. There is evidence that clients overestimate cost savings to be obtained from offshoring by neglecting the hidden costs of offshoring (Teagarden et al., 2008). The actual cost savings obtained will depend on the nature of the service with more labour-intensive activities offering more opportunities. Another driver of offshoring is a desire for additional production capacity in the form of well-trained professionals (Manning et al., 2008). The increasing presence of professionals in far-off locations suggests that optimal CD through offshoring is relatively high for this stage, as the capacity to absorb relevant knowledge will be higher both onshore and offshore when such individuals are present. Yet the mere size of this stage also implies that getting the degree of offshoring wrong will have a large impact on value creation.

Finally, the fifth stage of monitoring and evaluation is an activity that normally requires the involvement of high-level decision-makers and uses only a limited amount of labour (Stabell and Fjeldstad, 1998). The monitoring and evaluation stage measures the extent to which the implementation has contributed to problem solving and involves further analysis to possibly initiate another production process. Thus, this stage can lead to a continuation of the strategy either as a

revision or as a new process. Based on the possibility of continuing a process, “outputs” of one process cycle can become inputs for another, the sequencing referred to earlier (Langley, 2007; Stabell and Fjeldstad, 1998). In terms of costs, the downside or upside of offshoring this stage is very limited because of its size.

Next we investigate the factors, which impact upon cost and value outcomes of the overall service. In line with the governance literature (e.g., Barney, 1999; Dyer and Singh, 1998; Williamson, 1991) we propose that there are three aspects that particularly affect costs and value, namely the nature of transactions, firms, and relationships. We discuss each of these in turn now, focusing on decomposability of the services into different stages as a key transaction (service) characteristic, on provider and client experience as a key firm characteristic and finally, on repeated production as a key relationship characteristic.

Decomposability into stages

We noted earlier that reciprocity between stages and the lack of perfect decomposability (Thompson, 1967; Simon, 2002) is one of the key characteristics of the KIBS production process. Decomposability refers to the extent to which stages can be undertaken on a stand-alone basis, without requiring inputs from the other stages, i.e. the more reciprocity, the less decomposability. As Simon (2002: 589) suggests, near decomposability occurs when interactions within a stage are more meaningful than those between stages. This perspective is further supported by the discussion around service architecture and modularity, which considers the degree in which components can be separated and recombined (Voss and Hsuan, 2009). We expect KIBS production processes to vary significantly on this dimension from low to high (or near) decomposability, depending especially on the nature of the activity but also on the organizational and environmental context in which it occurs. The key implication of this discussion is that KIBS production processes vary to the extent in which stages can be offshored separately or not.

In the Floatank case, decomposability was relatively low. The firm realized that while the initial offshoring set-up, to offshore only the problem-solving stage was perhaps more cost efficient, it did not produce the desired value outcomes. In the execution phase where client and demurrage analyst usually negotiate the charges, the demurrage analyst frequently had to communicate with the offshore service

provider to discuss the calculations of the charges; this additional communication created additional work for the onshore demurrage analyst, increasing production costs and lowering value. As a consequence, the firm decided to offshore the problem-finding, choice and execution stage as well. The GSC was then able to independently identify the incoming vessel, received full access to contractual agreements and was able to calculate and negotiate the demurrage claim with the charterer directly. Monitoring was still done by the accounting department and one remaining contact person at the onshore location.

Considering the illustrative case and the earlier discussion, we suggest three important consequences with regards to decomposability of the services. First, if decomposability is low, decisions on whether to offshore a given stage will need to depend more heavily on decisions made for other stages to maintain the integrity of a production process. In other words, if earlier stages are being offshored, this makes it more likely that later stages will be offshored too. Second, if decomposability is low, decision-makers will be more reluctant to transfer an entire production process to an offshore provider, as doing so significantly increases problems of knowledge transfer and fitting between onshore client demands and offshore service provision. Both arguments resonate with literature on the modularity of manufacturing production networks (e.g., Brusoni, 2005) or services (Voss and Hsuan, 2009), which argues that the more modular a production process is, the easier it will be to take separate governance decisions for each module.

Yet it also points to the importance of maintaining some overall control over the process, particularly where modules are complex and overlapping. Thirdly and linking back to the CD discussion, where decomposability is high, the relationship between CD and value outcomes will be more positive because the heterogeneous knowledge inputs that CD generates for individuals (Rodan and Galunic, 2004) can be matched more readily to the knowledge needs in a specific production stage and thus, can be absorbed more easily to create value. Likewise, with high decomposability and separation of stage, CD between individuals will not increase cost levels as much, because disruption costs (Puranam and Srikanth, 2007) will be easier to avoid. Thus, we propose:

Proposition 1a: The less decomposable a production process is into its respective stages, the more strongly decisions concerning whether to offshore each of the stages will correlate.

Proposition 1b: The less decomposable a production process is into its respective stages, the less likely it is that any of these stages will be offshored.

Proposition 1c: Decomposability will positively moderate the relationship between cognitive distance and value outcomes and negatively moderate the relationship between cognitive distance and cost outcomes.

Client and provider experience

A second aspect that the literature has highlighted is how prior experience and learning improves the ability of a firm to undertake further production processes, not necessarily within the same relationship, due to the presence of a learning curve (Yelle, 1979). Productive resources are typically accumulated over time (Barney, 1991). Even if each KIBS is unique and not generalizable, there is no reason to assume that individual and firm level learning does not occur and cannot be applied to different KIBS production processes within the firm again. For instance, individuals who have performed a service for one client could be reassigned to work for another client within the firm. The usefulness of such learning will of course vary from case to case. In the current context, given the observation of co-production, we must consider that individuals of clients and providers experience simultaneously.

Furthermore, given that increased CD of individuals is the key characteristic of offshored production of KIBS, we suggest that the key resource that clients and providers accumulate is absorptive capacity (e.g. Cohen and Levinthal, 1990; Zahra and George, 2002). More specifically, for the service provider, the ability to value, assimilate and apply gained individual knowledge will lead to innovative activities and the transfer of best practices (Szulanski, 1996) that can be reapplied. Similarly, individuals within the client firm learn how to better use knowledge gained which improves the relationship with the vendor, also regarding partnership management and inter-organizational trust (Lane, Lubatkin and Lyles,

2001). Thus, information asymmetries between client and service provider decrease through iteration and concomitantly the information that needs to be exchanged prior to offshoring of new services. Due to a lower need for knowledge, transfer costs will fall.

We note that this offshoring experience is not the only source of absorptive capacity, though. As the international business literature has discussed, there are spillovers from different types of internationalization. For instance, outward internationalization in the form of foreign direct investment, and inward internationalization, through offshoring, tends to go hand in hand (e.g., Bertrand, 2011). Again, the focus of our paper is not on multinational firms as such, however, multinational experience of any sort will help clients and providers build absorptive capacity for KIBS production processes.

We exemplify our argument about the reduction of CD through absorptive capacity with our illustrative case. After Floatank had gained experience in offshoring the demurrage service, it considered offshoring other service to India in order to try and operate at lower costs and benefit from trained individuals. The offshoring analyst at Floatank and the onshore GSC representative discussed these opportunities. Consequently, a part of the work by the technical operations team, which is responsible for all technical issues on vessels, was decided to be offshored. The service requires highly specialized technical and engineering skills with many years of experience and occasional travels to the vessels. The technical superintendents monitor vessel movements and ship performance on a daily basis from a mechanical and technical perspective. The same transition manager as in the demurrage case started to map out tasks and time and resources spent on each task in a more structured manner compared to earlier offshoring activities.

This mapping did not require the initial work of getting to know the company and general work processes any longer; as the transition manager outlined, *“We have a set way of doing transitions for the client now”*. Moreover, individuals in the onshore location were much more prone to offshoring the tasks and knew the offshoring transition manager from the time when the demurrage service was offshored. Thus, the offshoring transition was faster and more effective. This example outlines and exemplifies the individual learning and experience gained through a repetition of the offshoring relationship that also reduced the CD between individuals of the onshore and the offshore location. Thus, we propose:

Proposition 2a: Repetition of offshored KIBS production processes generates absorptive capacity for clients and providers, which helps to bridge cognitive distance between them.

Proposition 2b: Repetition of offshored KIBS production processes between a client and a provider helps to reduce cost levels during the various production stages.

Proposition 2c: When offshored KIBS production processes between a client and a provider are repeated, new value creation during all stages is contingent upon the extent of offshoring relative to the optimal point, in such a way that the more misaligned the degree of offshoring, the more positive value creation will be.

Repeated production processes

Repetition does not only lead to individual learning, through enhanced absorptive capacities, if a production process is repeated with the same relationship between the onshore client and offshore provider, costs and value will change. We do not dwell on the reasons why clients may decide to repeat production with the same provider, however, prior success is clearly one likely driver of such decisions although less ‘benign’ motives such as organizational inertia (Mol and Kotabe, 2011) may also play a role. The literature has presented a strong case that repeated cooperation leads to lower cost levels due to the development of relationship-specific assets, knowledge-sharing routines, complementary resources and capabilities, and more effective governance through trust (Dyer and Singh, 1998; Gulati, 1995).

Much of this argument rests on the notion of organizational routines (Nelson and Winter, 1982) and in the case of offshoring; development of new routines for working in geographically remote locations is particularly challenging (Lewin et al, 2009). When production is repeated, we expect cost levels to drop over time due to the development of such routines. Aside, prior to offshoring, similar reductions in cost levels are likely to have occurred onshore, meaning that when taking a static point of view the initial offshoring outcomes might not look very attractive, as we observed in the case for Floatank.

When it comes to value creation, however, the situation is paradoxical. On the one hand, those same knowledge-sharing routines (Dyer and Singh, 1998) and strong ties (Hansen, 1999) will facilitate more effective sharing of knowledge (Landry et al., 2001), which increases value. On the other hand, following our CD line of reasoning, the effect of repeated cooperation is to bring parties closer together, i.e., to bridge the CD between them (McAllister, 1995; Wuyts, Colombo, Dutta and Nooteboom, 2005). This closeness implies that the underlying heterogeneity in knowledge resources in the relationship will decrease, i.e. there will now be fewer possible novel combinations of knowledge inputs leading to less additional value creation.

Furthermore, repetition of production will lead to routinization and standardization of knowledge sharing in the relationship and also of the productive activity itself. In other words, the knowledge intensity of the production process decreases over time. Prior commoditization of activities is of course precisely one of the key drivers of the offshoring phenomenon (Lewin et al., 2009), yet commoditization of KIBS over time is equally a product of offshoring. The effect of repetition on value creation will, therefore, depend on which of these competing developments—better knowledge sharing through routines or less novelty due to decreased CD—occurs faster.

We suggest that whether value creation increases or decreases when a production process is repeated, depends on what the actual degree of offshoring of an activity is, relative to the optimal degree of offshoring (which reflects perfect alignment). Work in the behavioural and cognitive tradition has explained in detail how underperformance (or, in terms of our framework here, misalignment) helps produce additional effort to try and bridge the performance gap (Greve, 2003). Following this, we propose that there will be a catch-up effect if the distance from the optimal point is greater, i.e. when actual and optimal CD are disconnected, so that more opportunities for increases in future value creation exist. In other words, net value creation will be bigger the more misaligned actual and optimal CD are.

In the case of Floatank, when demurrage was first offshored in the problem-solving stage, a majority of onshore analysts were retained. Floatank's management was not ready to relocate the staff to other positions at that point, mainly due to inefficiencies arising from only offshoring the problem-solving stage. Onshore analysts supported the operations of the offshore analysts through

regular phone calls and almost daily messaging, which helped the offshore analysts to understand the requirements of the job beyond what initial training taught them.

However, this approach also caused work to take much longer. In spite of this inefficiency, demurrage claims that were sent out were more thoroughly researched and controlled as several analysts worked together on the claim and negotiations. When Floatank decided to offshore the choice and execution stage as well, this communication decreased as onshore analysts were gradually relocated to other positions or laid off. Only one manager was retained onshore to coordinate the connections between GSC and Floatank.

Proposition 3a: Repetition of KIBS production processes in an offshoring relationship helps to bridge cognitive distance.

Proposition 3b: As KIBS production processes are repeated in an offshoring relationship, cost levels during all stages of the process will fall.

Proposition 3c: As KIBS production processes are repeated in an offshoring relationship, value creation may go up or down, depending on the pace in which knowledge sharing routines are developed versus the remaining opportunities for knowledge creation afforded by the cognitive distance between client and provider.

DISCUSSION AND IMPLICATIONS

Having now discussed these three separate aspects of decomposability, client and provider experience and repeated production processes, we briefly assess their effects in conjunction. Firstly, they may affect each other directly. For instance, a client's experience with offshoring may stimulate that client to engage in more offshoring relationships. Secondly, the effect of these three aspects may vary depending on the specific production stage. Service design (decomposability) and client and provider experience will be especially important in the earlier stage, when KIBS production is being transitioned. Relationship experience, however, may have more of an on-going effect that extends beyond transition. Perhaps, therefore, service design and client and provider experiences act to a degree as substitutes in their effect on costs and value.

There are further considerations that affect the analysis of offshoring of KIBS. First, we note that there is great heterogeneity in the composition of production processes. For instance, some services, such as clinical trials in pharmaceuticals, will have a very large execution stage, making them more suitable for offshoring following our propositions. Other services, particularly those at the beginning of a sequence of production processes, may not proceed beyond problem finding and acquisition (Stabell and Fjeldstad, 1998), meaning they are less likely to be offshored. Moreover, the importance of costs and value will differ between production processes. The framework presented above is agnostic as to the precise nature of an individual production process but actual decision-making about offshoring must reflect such heterogeneity.

Next, our discussion did not fully acknowledge that KIBS production processes are likely to involve significant learning, discovery and experimentation. While we highlight how learning takes place in repeated production processes, individuals also accumulate knowledge across different, completely unrelated, production processes (Grant, 1996). The same will be true for firms as a whole; mistakes with prior production processes can be avoided if learning takes place across the firm, for instance through knowledge management systems.

Furthermore, individual cognitions are by definition limited, i.e. there is bounded rationality, and experiments with offshoring may be determined by ‘socializing’ factors as much as economizing factors (Mol and Kotabe, 2011). This suggests that perfect alignment is a feature of academic models more than of empirical reality and that decision-makers only act in case of serious misalignment due to limited managerial attention, which is what the behavioral and cognitive perspective would predict (Gavetti et al., 2012). An in-depth consideration of such factors exceeds the boundaries of this paper, as does a consideration of the effect of the governance mode (captive or outsourced).

Another consideration is in regards to the transfer of activities. Crucially, some activities may have recently been transferred from one location to another, transferred some time ago or first started in the offshore location. The transfer process has not received great attention in the offshoring literature, but is well understood in the information systems literature. For example, Leonardi and Bailey (2008) contend that new work practices may have to be invented by client and supplier to effectively transfer implicit knowledge.

The state of a transfer process has significant implications for the production of knowledge in offshored KIBS. An ineffective transfer process, i.e. the client's (knowledge) assets were not transferred across to the provider as needed, will undermine the cost advantages that come with offshoring, as additional efforts need to be made to compensate, as per the notion of hidden costs, particularly regarding tacit knowledge (Kogut and Zander, 2003). Larsen, Manning and Pedersen (2013) argue that offshoring involves a trade-off between easy-to-measure production cost improvements and hard-to-measure, hidden transaction costs, such as a decrease in learning and innovation.

Such measurement difficulties suggest that the effects of poor knowledge transfer will be strongest in the area of value creation. Ineffective knowledge transfer can be the consequence of having to bridge the geographical, cultural or institutional distance between sender and recipient, or the stickiness of internal knowledge (Luo et al., 2012; Szulanski, 1996). We suggest that knowledge transfer positively moderates the relationship between offshoring and cost, specifically value creation outcomes.

Implications

We provide a detailed picture of multiple stages of KIBS production and discuss how physical separation of clients and providers affects costs and value outcomes. This paper suggests that the key barrier created by physical separation is an increase in cognitive distance. We then explain why the previous assumption that such separation, for instance through offshoring, is difficult, if not impossible (Stabell and Fjeldstad, 1998; Starbuck, 1992), and no longer holds true in practice even though many (parts of) KIBS will remain onshore. In particular, we suggest that: a) where production processes are decomposable into their respective stages offshoring will be encouraged; b) individuals of clients and providers with previous experience build up absorptive capacity to overcome cognitive distance; c) repetition of a production process in an offshoring relationship will help to bridge cognitive distance. We maintain that these conclusions hold a number of important implications for various strands of literature and for practice.

This paper also helps to further develop the international management literature in several ways. First, our work enriches current conceptual and empirical work on

offshoring by being among the first to focus on processes (cf. Jensen, 2012; Luo et al., 2012). Second, we are among the first to apply a cognition perspective to offshoring (Bertrand and Mol, 2013), which provides a complementary lens to economizing (Levinthal, 2011), thus helping to further ground our conceptual understanding of offshoring. Third, and building upon these first two points, we confirm the notion that the production of KIBS may be becoming more modular (Voss and Hsuan, 2009), with some stages conducted onshore and others offshore (Lewin et al, 2009). But rather than thinking about such modularity along functional areas or bigger activities as is commonly done in the IB literature (Luo et al., 2012; Mudambi, 2008), we proceed to a deeper level of aggregation by separating activities into stages. By doing so, we are able to provide a more detailed and novel understanding of costs and value creation when KIBS are offshored.

Additionally, we enrich work on service operations management (e.g., Den Hertog, 2000; Goldstein et al., 2002) in two ways. First, we provide a detailed picture of services design, arguing that KIBS consist of multiple stages that can be decomposed to a greater or lesser extent. Second, we provide a sound theoretical basis, rooted in economizing, yet especially in cognitive and behavioural theory, to help understand what creates cost and value outcomes of services. Third, we go beyond discussing static services design to state that this design may change over time, particularly through the creation of a physical separation of individuals of clients and providers, as is the case with offshoring. At last, we believe this creates an enhanced and more theoretically sound view of services design.

A third area of the literature that this paper contributes to is the wider strategy and organization literature. In particular, we heed calls to combine economizing and behavioral and cognitive theories (Levinthal, 2011). The paper produces several interesting insights. We demonstrate through our application of these theories that they can generate complementary insights. Where economizing, especially transaction cost economics, is focused on explaining transaction and production costs of predetermined transactions, our use of the resource-based view, specifically cognitive distance, explained how new value may be created within KIBS activities even when these are offshored. In fact particularly when they are offshored, because offshoring helps clients access cognitive distance and heterogeneous knowledge resources that can be recombined to create value. Given that cognitive distance is essentially an individual level concept as emphasized on

several occasions in this research; our approach also provides a response to the call for a deeper understanding of the micro-foundations of strategy theory (Felin and Foss, 2005; Foss, 2011).

While the current paper is conceptual, there is a potential empirical research agenda. We note that it may prove difficult to empirically separate production stages due to limited decomposability, which may hinder empirical work. Having said that, qualitative approaches are the most appropriate means for studying process (Langley, 2007) and the obvious way to study the impact of physical separation on the KIBS production process is through in-depth case studies. Such studies would work best if they contain before / after comparisons that capture the activity over a significant period of time, if variance can be created in the knowledge intensity of the activity, the importance of the different stages or the importance of the actors.

Our ideas ought to apply as well to less knowledge-intensive services and manufacturing. The key observation we make here is that our analysis suggests offshoring of these activities is generally easier because execution is the largest stage by far. Execution is especially driven by production cost considerations, which are lower offshore. Thus, our paper explains why, historically, offshoring started with manufacturing, followed by business processes to now be extended to KIBS.

This paper offers practical implications for those involved in managing high value activities. We maintain that there are opportunities to benefit from CD, which exists between individuals, and by extension organizations, located onshore and offshore. In other words, offshoring of KIBS can be used not just to lower costs but also to harness the knowledge creating potential that may exist when cognitively distant individuals produce knowledge inputs that can be (re-) combined in novel ways (Bertrand and Mol, 2013). We also highlight that decision-makers ought to carefully analyse the different stages, the decomposability of a KIBS, prior client and provider experience and the effect of repeated production in an offshoring relationship.

CONCLUSION

To conclude, this paper analyses how outcomes from the production process of knowledge-intensive business services change when individuals of clients and providers are physically separated. We utilize two complementary theoretical mechanisms, economizing and cognition, that help us understand costs and value creation outcomes in different stages of the production process. Subsequently, we develop a set of propositions focusing on how activity decomposability, firm experience, and repeated relationships change these outcomes. We believe this paper contributes to academic discussions on KIBS production and offshoring by providing a dynamic account that builds on multiple theories and results in an activity-driven framework of offshoring of KIBS.

CHAPTER 4

Client Co-production in the Production Process of Offshored Knowledge-intensive Services

Kristin Brandl
Copenhagen Business School

Abstract

Clients co-produce knowledge-intensive services through transferring and co-creating knowledge. I study the production process of the services and how offshoring impacts client co-production in this process. Through an empirical analysis of multiple service production processes, I find that client co-production decreases in intensity over time, but never stops entirely concomitant with the challenges to overcome geographic distance. Furthermore, I find that the globally dispersed interdependent tasks of service production processes in causation with changing co-production result in modularization of production tasks, and as a consequence, in standardization of production processes as well as a change of service characteristics.

Keywords: knowledge-intensive service, offshoring, knowledge transfer, knowledge creation, service production, task interdependence.

INTRODUCTION

“If we allow clients to distance themselves, we have already lost the war, because it is, after all, the client’s problem we are dealing with” (Schein, 1990: 61). Schein’s (1990) quote outlines the significance of clients in the production of knowledge-intensive services and summarizes the value creation logic of the services, namely to satisfy needs or solve problems of clients (Normann and Ramirez, 1994; Wittreich 1966). Together with the unique characteristics of the services, such as the dependency on professional experts, high tacit knowledge intensity and specifically, the high degree of customization in the production of the services (Alvesson, 1993; Bettencourt, Ostrom, Brown and Roundtree, 2002; O’Farrell and Moffat, 1991), a strong interaction between clients and service providers is inevitable in the service production process (Edvardsson, Gustafsson, and Roos, 2005; Maister and Lovelock, 1982).

This client co-production, i.e. the transfers of existing knowledge or co-creation of new knowledge (Mills, Chase and Margulies, 1983), is based on interactions between clients and service providers, which is argued to require co-location (Howden and Pressey, 2008). However, what happens when the production process of the services are offshored, resulting in a geographic separation between the client and the service provider? What happens then to the client’s co-production of the services and concomitantly the production process?

A wide variety of business actors are impacted by such a global dispersion of knowledge-intensive services, such as advice seeking services, i.e. legal or consulting services, or research and analysis services, i.e. market research or competitive intelligence services (von Nordenflycht, 2010). There is an increasing trend to offshore these services to (geographic, cultural and cognitive) distant locations such as India (Apte, Mason and Richard, 1995; Lewin, Massini and Peeters, 2009; UNCTAD, 2004). A few examples of such activities include British Clifford Chance that offshores legal work to a firm internal knowledge center in India (Kriegler, 2012), or General Electric that offshores parts of its legal work to Indian Pangea3 (The Economist, 2010) and research/analysis services to own service centers in India (The Economist, 2003a). Offshoring, as the relocation of tasks across country borders (Lewin and Peeters, 2006; Manning, Massini and Lewin, 2008), is expected to impact the production process of the services as well as client co-production. However, academic literature knows little about these

offshored service production processes and has even less focused on the client's activities in this process. Consequently, the objective of this paper is to elucidate task and actors in globally dispersed service production processes and questions *how does offshoring impact client co-production in the production process of knowledge-intensive services?*

The paper investigates the service production process in more detail and dissects the process into different production tasks. Such a process perspective enables distinguishing the contributions and activities of the client in the production process and promotes a comprehensive perspective on the causality of tasks and actors. To exemplify a service production process, Stabell and Fjeldstad's (1998) value shop model is used that reflects five interdependent production tasks (*problem-finding and acquisition, problem-solving, choice, execution and monitoring and evaluation*). When the services are offshored the process becomes even more iterative and repetitive, as offshoring of knowledge-intensive services is predominantly a longer-term commitment.

Through an empirical analysis of several offshored service production processes, I find that a) client co-production (the transfers and co-creation of knowledge by the client) is differently impacted by offshoring and changes over time but never decreases entirely, which implies that the client will be part of the production process at all times and b) these changes of co-production in causation with features of the offshored production process result in modularization of production tasks and as a consequence, standardization of production processes and a change of service characteristics. As a result, I conclude that offshored knowledge-intensive services will at all times require client co-production and that service characteristics change over time.

This paper contributes to the international management literature by theoretically developing and empirically applying a dynamic process perspective to service offshoring. In drawing upon service (operations) management literature to outline a service production process of knowledge-intensive services, combined with established international business frameworks on globally dispersed interdependent tasks (Kumar, van Fenema and von Glinow, 2009), I provide a detailed and activity driven picture to service offshoring beyond firm-level factors. Particularly noteworthy is the detailed outline and discussion regarding the different production tasks and activities in an offshored service production. Such a

comprehensive and activity driven research perspective and approach also allows studying causation of tasks, activities and actors. Dynamic and process oriented perspectives have only recently started to gain academic attention in the international management and offshoring literature, with a focus on processes related to organizational configurations (e.g. Lampel and Bhalla, 2011; Srikanth and Puranam, 2014; Luo, Wang, Jayaraman and Zheng, 2013) with regards to learning (e.g. Jensen, 2009), relationships (e.g. Vivek, Banwet and, Shankar, 2008; Vivek, Richey and Dalela, 2009), management practices (e.g. Pereira and Anderson, 2012) and changes to offshoring intensity or reasoning (e.g. Clampit, Kedia, Fabian and Gaffney, 2014; Luo, Wang, Jayaraman and Zheng, 2013; Tate, Ellram, Bals and Hartmann, 2009).

This paper also contributes to academic knowledge management literature with a distinction between knowledge transfer and knowledge creation in the production process. Hitherto, the two concepts are either not distinguished as such and / or used interchangeably (e.g. Raab, Ambos and Tallman, 2014) or are studied on an organizational level (e.g. Nonaka, 1994) mainly through investigating knowledge conversion. This paper investigates the service level that goes beyond individual knowledge (Grant, 1996), yet remains beneath the firm level.

In using an offshoring context and a process perspective, I am able to make a distinction when knowledge is transferred and when co-created. The geographic distance between the client and service provider enables analysing the different activities of each actor in each task of a service production process and when existing knowledge is transferred from one location to the other versus new knowledge created through interaction between the two actors to amplify, enlarge and justify knowledge (Nonaka, 1994). This research is innovative in using a process perspective to offshoring that allows examining knowledge creation / transfers in the production process of services.

The paper continues with a theoretical background section regarding the nature of knowledge-intensive services, a discussion concerning co-production of the services and an explanation of offshoring as the global distribution of tasks. This discussion is followed by an outline of the applied methods of a multiple case study. After the data analysis, findings are discussed in line with their implications to academic literature and concluded with potential future research suggestions.

THEORETICAL OVERVIEW

The nature of knowledge-intensive services

An often used, yet rather general, definition of knowledge-intensive services is provided by Bettencourt et al. stating that the services 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” (2002: 101). Thus, knowledge-intensive services are based on information asymmetry generated through human skills, management capabilities and knowledge stocks of experts (Quinn, 1992; Prahalad and Hamel, 1990).

The services are either produced by one single professional, i.e. one lawyer or research analyst, or by a team of experts and thus, inevitably involve elements of tacit knowledge, leading to socially constructed, context specific, and ambiguous service dimensions (Alvesson, 2004; Tsoukas and Vladimirou 2001; Starbuck, 1992). It is argued that production tasks in the services are not linear, with fixed sets of clear distinguishable activities enabling firms to capitalize on economies of scale through standardization, routinization and generalization (Løwendahl, Revang and Fosstenløkken, 2001; Larsson and Bowen, 1989). Thus, the high customization and non-standardization of the services lead to increasing task complexity and uncertainty requiring more communication between actors (March and Simon, 1993).

Researchers have attempted to (although often only conceptually) define a production process of knowledge-intensive services (e.g. Stabell and Fjeldstad, 1998; O’Farrell and Moffat, 1991). Employing Thompson’s (1967) arguments on intensive technology, Stabell and Fjeldstad (1998) designed the value shop framework presenting primary activities of a five-task service production process. The tasks *problem-finding and acquisition*, *problem-solving*, *choice*, *execution* and *monitoring and evaluation* imply different activities and knowledge dimensions (see Table 4.1). This process is argued to be cyclical and iterative - each production process output can become the input of a new production process cycle. The framework corresponds with similar service production processes in the service operations management field (e.g. Aarikka-Stenroos and Jaakkola, 2012; O’Farrell and Moffat, 1991; Ordanini and Pasini, 2008) and was discussed in several industry contexts, i.e. IT (Maister, 1993), energy exploration (Woiceshyn and Falkenberg, 2008) and health care (Christensen, Grossman and Hwang, 2009).

Table 4.1: Production process, activities and factors influencing knowledge dimensions

Production task	Task related activities	Knowledge dimension	Factors influencing knowledge dimension
Problem-finding and acquisition	Problem identification and formulation	Client-specific Problem-specific	High knowledge uncertainty Human asset specificity ¹ Context dependency
Problem-solving	Framing and designing of problem-solving strategies	Problem-specific Process-specific	Resource dependency Context dependency Procedural asset specificity ²
Choice	Choice of problem-solving strategy	Client-specific Problem-specific Process-specific	High uncertainty Context dependency
Execution	Communication, organization and implementation of problem-solving strategy	Solution-specific	Resource dependency Context dependency Procedural asset specificity
Monitoring and evaluation	Monitoring and assessment if problem is solved	Solution-specific Client-specific	Integrative capabilities Context dependency

Source: adapted from Stabell and Fjeldstad (1998) and O'Farrell and Moffat (1991)

¹Human asset specificity is a dimension of asset specificity that deals with the degree to which skills, knowledge and experience of individuals of a firm are specific to a business process (Zaheer and Venkatraman, 1995)

²Procedural asset specificity refers to the degree that a firm's processes are customized to exploit its resources and capabilities (Zaheer and Venkatraman, 1995)

In sum, the production process of knowledge-intensive services reflects a work design that distinguishes the service production into tasks that are assigned to actors (individuals, groups or organizations). These tasks are interdependent as “the performance and outcome of one task is affected by or needs the interaction with the performance and outcome of other tasks” (Kumar et al., 2009: 644 based on Crowston, 1997 and Victor and Blackburn, 1997). The greater this task interdependency, the greater is the needed amount of interaction between actors as the likelihood of uncertainties increases with interdependencies (Kumar et al., 2009; March and Simon, 1958).

According to Stabell and Fjeldstad (1998) the production process of knowledge-intensive services implies a) reciprocal task interdependence, as borders of the five production tasks are interlinked and not clearly distinguishable, b) sequential interdependence, as subsequent activities (within and across production process cycles) are dependent on initial activities, and c) pooled interdependence, as coordination costs can only be reduced through the reduction of tasks.

Client co-production

After having discussed the production process of the services, I am now able to outline the actors that co-produce the services, viz. clients and service providers. The intensity of co-production is dependent on service characteristics, the problem that needs to be solved and the capabilities of service providers (Mills et al., 1983) and clients (Larsson and Bowen, 1989). If the client problem is related to search activities such as in a market research service, co-production is less intense in comparison to a client problem related to a quality consulting service (O’Farrell and Moffat, 1991; Mills et al., 1983). Chase (1977; 1981) claims that the higher the customer contact, the lower the possibility to operate on peak efficiencies, but according to Mills et al. (1983), the more the client is involved in the production process, the higher the productivity gains and value creation. This controversy highlights that a balance between client co-production and efficiency seeking is needed and that the more cohesive and the less fragmented the client and service provider, the better. Co-location of the two parties is counteracting such a fragmentation (Howden and Pressey, 2008).

The knowledge that needs to be used to solve the client's problem is according to Faulconbridge (2006) distinguishable into two epistemologies of knowledge leverage, the transfer of existing knowledge and the creation of new knowledge. These concepts have led to controversial and inconsistent definitions within academic literature, often due to the intangible nature of knowledge⁵. I define *knowledge transfers* as the transfer of existing knowledge from one actor / sender to another actor / receiver, such as the transfer of firm-specific information from the client to the service provider. This knowledge already exists and needs to be exploited for the production of the services.

Faulconbridge (2006: 525) refers to this knowledge as production "management" related knowledge rather than knowledge that is created to solve the client's problem per se. Although the knowledge is not directly used to solve problems, it is needed to allow, manage and support the creation of knowledge. While the transfer of knowledge (both tacit and explicit knowledge) within (e.g., Argote and Ingram, 2000; Mowery, Oxley and Silverman, 1996) and across organizational boundaries (e.g. Tsai, 2001), as well as across international boundaries (e.g. Simonin, 2004), has been studied extensively in academic literature, the creation of knowledge, in comparison, has not received the same attention and if so predominantly applied Nonaka's (1994) SECI⁶ model that considers knowledge conversion.

Through *knowledge co-creation*, the client and the service provider create new knowledge that directly helps to solve the problem of a client. As this knowledge is newly created by the combined application of knowledge sources of both actors, the outcome of this knowledge exploration remains uncertain until the knowledge is created. Knowledge creation is consequently an uncertain and dynamic process involving interactions of individuals and is dependent on tacit knowledge dimensions (Inkpen and Dinur, 1998; Nonaka, 1994). It is a central concept in the production process of knowledge-intensive services and is expected to require

⁵ I go in line with Polanyi (1966) and Kogut and Zander (1992) and perceive knowledge as "know-how" knowledge that is tacit in nature and "know-what" knowledge that is articulable and explicit in nature. Both knowledge dimensions are evident in the transfer and the creation of knowledge.

⁶ Organizational knowledge creation is based on the conversion of knowledge through socialization, externalization, combination and internalization.

reciprocal interaction and the development, exchange, sharing and judgment of knowledge.

Thus, knowledge creation is referred to as the *enlargement* of knowledge (constructed through the progressive development of knowledge), the *amplification* of knowledge (constructed through the exchange of already existing knowledge) and the *justification* of knowledge (constructed through the judgment of the truthfulness of knowledge), as defined by Nonaka (1991; 1994). As this paper focuses on the service level and not the organizational level, I disregard Nonaka's (1994) crystallization and networking as knowledge creation, both concepts reflect the integration of the created knowledge into organizational contexts. Knowledge transfer as well as knowledge creation in the production process (see Table 4.2) require an interaction between clients and service providers reflecting knowledge interdependencies. This interaction can take place through several mediums such as personal face-to-face/inter-sight interaction in meetings or the exchange of emails, depending on the knowledge dimension that is included in the transaction (Daft and Lengel, 1986).

Interdependencies of offshored tasks

Offshoring is expected to impact this client co-production as well as the production process of knowledge-intensive services. Reasons to offshore services are often the possibility to reduce costs or gain access to new knowledge and resources such as knowledgeable experts (Dossani and Kenney, 2007; Lewin and Peeters, 2006; Lewin et al., 2009). However, this global dispersion of service tasks can also lead to operational inefficiency, loss of control and loss of service quality for instance due to a lack of operational and/or managerial expertise of the offshore location (Kumar et al., 2009) or challenges to interact between actors that are geographically dispersed (Simonin, 2004).

Table 4.2: Conceptualization of client co-production in the production process

Production task	Knowledge transfer	Knowledge co-creation
Problem-finding & acquisition	Transfer of problem and firm information	Problem finding through knowledge amplification
Problem-solving	Transfer of best practices and firm information	Development of problem-solving strategy through knowledge amplification and enlargement
Choice	Transfer of decision	Decision on problem-solving strategy through knowledge justification
Execution	Transfer of best practices	Knowledge justification through interim discussions and knowledge enlargement through implementation of executed problem solving
Monitoring & evaluation	Transfer of firm information	Monitoring and evaluation of solved problem through justification

Source: adapted from Faulconbridge (2006), Nonaka (1994) O'Farrell and Moffat (1991) and Stabell and Fjeldstad (1998)

Research has argued that geographic distance is leading to weaker communication links (Ghemawat, 2001; Stringfellow, Teagarden and Nie, 2008) for instance through the prevention of direct task observations and infers other dimensions of distance such as cultural distance (Kogut and Singh, 1988) or institutional distance, i.e. cognitive distance (Nooteboom, 2009) that can influence the interaction between two dispersed actors. This distance, which does not allow common understandings and sense making, challenges especially the client co-production (Chen, Queen and Sun, 2013; Vlaar, van Fenema and Tiwari, 2008), also requiring the establishment of alternative mechanisms to bridge distance (Hinds and Bailey, 2003).

Similarly, the production process of the services with its different interdependent tasks, are expected to be impacted by the geographic dispersion of the tasks (Apte and Mason, 1995). Kumar et al. (2009) study such a geographic relocation of interdependent tasks through using Thompson's (1967) seminal work on task interdependencies outlining ambiguous, uncertain, equivocal and complex tasks as in knowledge-intensive services. The geographic relocation of these tasks is thereby increasing task interdependence, as well as complexity and uncertainty, resulting in the need for better management, support, coordination and collaboration systems between the actors (Luo, Wang, Zheng and Jayaraman, 2012).

This task interdependence is enhanced when considering that offshoring of knowledge-intensive services is predominantly done through establishments of longer term service centres that reflect a repetitive and iterative production cycle. In sum, two interdependencies are considered in this study that are differently impacted by offshoring but need to be considered in causation to each other as they are both central for the production of knowledge-intensive services, task interdependence in the production process of the services and knowledge interdependence through co-production of knowledge-intensive services akin to studies by Srikanth and Puranam (2011; 2014).

METHODS

Research approach and research setting

The aim of this study is to extend theory by gaining a holistic understanding of a complex and dynamic phenomenon using contextual explanations through multiple case studies (Welch, Piekkari, Plakoyiannaki and Paavilainen-Mäntymäki, 2011). A qualitative case study method allows analysing processes in detail and enables to investigate actions and actors in these processes as well as causal relationships of actions, a perspective strongly supported by various academics in the process research field (Van de Ven, 2007; Langley, 1999; Pettigrew, 1992). It also allows a research strategy that examines a phenomenon such as service offshoring in its naturalistic context. The research is set in the Indian offshoring industry and studies the production process of four knowledge-intensive services (see Table 4.3).

Table 4.3: Description of the five cases under study

Case	Case A	Case B	Case C	Case D
Service	Competitive intelligence	Intellectual property and R&D research	Market Research – Media Industry	Measurement science
Service tasks	Analysis of competition and merger / alliance possibilities	Analysis of patents, intellectual property, products	Analysis of media industry	Analysis of multimedia measures
Client industry	Chemicals	Chemicals	Business consulting	Multimedia
Client location	Switzerland	Switzerland	US	US/Europe
Year	2006	2008	2009	2009
Employees formal skills	Chemical engineering, business analytics	Chemical engineering, legal	Business analytics, economics	Statistics, research, analysis
Employees informal skills	Judgment on industry, potential alliance partners	Judgment on importance of global IP output and R&D potential	Judgment on industry	Analysis on media industry, statistical forecasting

The selected unit of analysis is the production process of the services and not the firms per se. This paper investigates these processes, viz. the actors and their activities, and does not focus on the organizational level. The services are offshored by a variety of different firms in different industries from mature market economies, i.e. US and Europe, to an emerging market economy, i.e. India. India provides a good context for the study, for several reasons. First, the offshoring industry of knowledge-intensive services in India has significantly gained in importance on the global business environment contrary to the previous predominant mature market economies such as Ireland (UNCTAD, 2004). Moreover, it allows for a more drastic offshoring context from mature to emerging market economies not evident when offshoring to countries such as Ireland, which is also geographically closer to other European countries. Most important to the research was the significant geographic distance between the two actors, which is given when European and US firms offshore to India.

The four services were chosen on a purposeful sampling approach (Eisenhardt, 1989) of a pool of available cases as they are all based on research and analysis related activities. It was anticipated that using four research and analysis cases with similar characteristics would allow for a stronger understanding of the phenomenon, moreover, the modelling of service production processes would be challenging when using very diverse services as knowledge-intensive services research acknowledges (e.g. Løwendahl, 2005; von Nordenflycht, 2010).

Prior to offshoring, the services were produced onshore in an unstructured and uncoordinated manner by the client and then relocated into so called “service centres”. These centres are established once and then followed by regular project based requests, representing iterative production cycles. The firms establish a service centre on a longer-term basis that includes contractual agreements, transition periods, ownership discussions and the hiring of experts. The transition processes to establish these service centres are not considered in this study. The chosen service centres provide competitive intelligence research (CI), intellectual property and R&D research (IP), market research (MR), and measurement science (MS) services. Due to confidentiality reasons, none of the company names is mentioned and the cases are referred to as Case A-D.

Data sources

The data was predominantly generated through primary sources in the form of semi-structured interviews with service providers. It was expected that clients exaggerate their involvement in the production of the services due to the perceived importance of the service, while service providers would be more reluctant to admit client co-production. Thus, the findings need to be interpreted as being the least extent of client co-production likely in the offshored production process of the services.

In total, 47 interviews with representatives of the service providers were conducted between November 2011 and March 2012 (see Table 4.4 for more details). Each interview lasted on average 50 minutes. Interviewees were chosen according to their job tasks in relation to the service production process. The interviews were steered by an interview guide (see Appendix 4.1) containing questions on the production of the services including the different production tasks and the interaction with the client. Each interview was recorded, transcribed and in vivo coded using NVivo 10.

Secondary data, such as documents outlining production processes, was available for most of the cases and was used to support primary data for triangulation (Yin, 2003). All data was generated retrospectively, also allowing a longitudinal overview of the production processes in different production cycles. The services were offshored for at least two years by the time of data generation as it was important for the study that the production processes went through several cycles reflecting the iterative nature of an offshored production process. Such a retrospective data generation is highly beneficial when applying a process perspective (Van de Ven, 2007) and allows studying causes and effects of activities (Voss, Tsikriktsis and Frohlich, 2002). However, I acknowledge the possibility of hindsight bias of the informants caused by the research approach. Asking specific questions to ascertain that the interviewee understood the process components and how activities have changed over time mitigated this risk.

Table 4.4: Interviews and interviewees

Case	Case A	Case B	Case C	Case D
Service	Competitive intelligence	Intellectual property and R&D research	Market Research – Media Industry	Measurement science
Number of interviews	12	13	8	14
Interviewees positions	AVP, Business analyst, Division mgr, HR mgr, On-side rep, Team mgr, Trainer	AVP, Division mgr, HR mgr, On-side rep, Research assoc, Team mgr, Trainer, Transition mgr	Business analyst, Client mgr, Delivery mgr, Division mgr, HR mgr, Team mgr, Trainer, Transition mgr	Business analyst, Client mgr, Delivery mgr, Division mgr, HR mgr, Operations mgr, Partnership mgr, Regional mgr, Service mgr, Trainer, Transition mgr,

Research process

Findings are outlined through a narrative cross-case analysis that outlines the co-production of all four knowledge-intensive services in the production process of the services. I apply a narrative and temporal bracketing strategy according to Langley (1999) that allows me to study phases in the production process and provides a sense making from meanings and mechanisms. I orient myself on Stabell and Fjeldstad’s (1998) value shop model to present the generated data. Thus, each production task is separately discussed and divided into two production cycles; the initial production process and the iterative production process. In the initial production process, each task analysis starts with discussing task activities

and characteristics and which actors are the knowledge source (e.g. top level or middle manager). In each task, the transfer and creation of knowledge is analysed.

I also acknowledge knowledge transfer mechanisms in the different tasks that were used in order to overcome challenges with offshoring-instigated interdependencies. I study the reasons of communication between client and service provider and how geographic distance impacts this interaction. Due to the long-term offshoring set-up in the form of service centres and the iterative and cyclical nature of the production process of knowledge-intensive services, the iterative production process is also discussed. This research approach allows outlining the task and knowledge interdependencies in the production process and their development over time. Case findings are supported by quotes from the interviews that can be found in Appendix 4.2, a presentation approach adopted from Jensen (2012).

CASE FINDINGS

Co-production in the problem-finding and acquisition task

Initial production process. The task to identify the problem and acquire problem-specific knowledge was mainly motivated by client firm interactions. The embeddedness of the problem in the client-specific context required that all actors of the task understood problem- and client-specific knowledge. Naturally the client firm impelled this task. The task was performed by top and middle managers that had certain seniority related to the respective firms or problems, for instance problem related managers or offshoring / outsourcing managers from the client side or sales representatives and transition managers from the service provider side. The cases indicated that the transfer of knowledge was very important to the client firm in this task and in some cases a hesitant and unwilling knowledge transfer was evident due to the importance of the services (see quote 1). Most of these transfers of knowledge on the problem requested a personal inter-sight interaction in the initial production cycle (see quote 2).

The clients wanted to ensure that service providers understood the problem and the context of the problem and needed to develop some sort of trust to the providers. Problem-specific and client-specific knowledge was important for the production of the services and was impacted by a geographic distance. This

distance hindered the clients to transfer problem-specific knowledge from the onside to the offshore location. The likelihood that the problem was misunderstood or the context was not grasped was considered to be high. In all cases, service providers used onside-stationed firm representatives that were able to travel to the location of the client and receive knowledge about the problem that needed to be solved. The representative of the service provider was the link to secure effective knowledge transfers by the client, without such an inter-sight communication, the clients did not have complete trust in the service provider.

Although in all cases, the client initially knew that there was a problem or need for information and transferred this information to the service provider, the experts of service providers required to discuss and create new knowledge that framed the problems through amplification. In particular, Case B reflected a high uncertainty concerning the problem by the client (see quote 3). When the IP service was initially offshored, the client side was unsure about what kind of problem-specific knowledge was needed and even what the problem exactly was. In this case, the client wanted to combine and centralize activities of the legal and IP department to gain structured information, i.e. patent related information on their own business operations or research activities of competitors and potential alliance partners. The service provider's experts used their proficiency together with the client to find the client's problem.

Thus, both parties drew on own experience and knowledge sources to create and amplify knowledge. The service provider asked questions regarding the possible outcomes and about the objectives of offshoring of the services for the client. The client used knowledge about the firm and the context of the problem to answer and discuss the issue with the service provider. A part of this discussion was conducted through an onside representative who went to the client location. This representative bridged the distance between client and service provider and was stationed in close proximity to the client firm, at least within the same country.

However, the onside person was never an expert that was part of the production process at the end and thus, additional experts often needed to become part of the problem finding process. The discussion with an additional manager / expert happened through personal interaction via telephone calls. Although it was argued that a personal inter-sight interaction initially helps to avoid misunderstandings and the efficient creation of problem-specific and client-specific knowledge

creation with the clients onside representatives were not considered as being satisfactory. The onside representative was seldom part of any following tasks that meant that the gained knowledge was used ineffectively. Thus, interaction that allowed a number of experts that would solve the problem to be part of the interaction, for instance via email or telephone calls, were argued to be preferred (see quote 4).

Iterative production process. Identification of problems was still motivated mainly by client firms but an increasing number of service providers offered suggestions of potential problems. The more client-specific knowledge they gained, the more they suggested problems they saw and could solve. With the iteration of this task, the activities of onshore representatives were progressively substituted for activities of team managers of the service provider. The iterative nature of the production process of the services changed the need for client-specific knowledge transfer and eased problem-specific knowledge transfers, thus knowledge transfer became less sensitive to geographic distance. Learning about firm contexts allowed the client to transfer knowledge in the following cycles through emails or written documents rather than through personal inter-sight interaction reducing activities to transfer knowledge.

For example, in Case A, the responsible CI manager from the client firm knew the entire team of the service provider and their respective task experience and skills, the company's strategies and managerial set-up. He was able to frame and direct queries directly to the employee with the best suitable skills and experience. The previous lengthy and activity driven interactions to transfer client-specific knowledge became obsolete and problem-specific knowledge transfers were reduced through this iteration. This co-location requirement and interaction did not change through an iterative production cycle. The cases indicated that for each service production process, the problem finding was new, based on the iterative and project based nature of the problems. Thus, the iterative nature of the production process did not change the need for knowledge amplification (see quote 5). What changed, however, was the necessity of inter-sight interactions. In relation to the wish of close proximity in this task see quote 6.

Client and service provider interactions usually happened in all cases via phone calls. Only in cases where there was a lot of ambiguity, i.e. the service provider feared to misunderstand the problem, inter-sight interaction was needed, even if

only for knowledge justification purposes. If personal interaction was required, in most cases, the team manager travelled to the client's onside location. The onside sales representatives of the service providers only participated in parts of the discussion concerning difficult situations and then only to support the offshore managers if needed. In most cases, the team manager was able to communicate issues with the client without the support of onside representatives.

Co-production in the problem-solving task

Initial production process. The transition from problem-finding to the problem-solving tasks was in most cases not easily distinguishable. Often, the client firm had a problem-solving strategy already in mind or the service provider started to create one during the identification of the problem. Nonetheless, the service provider mainly designed problem-solving strategies, as the clients did not know about the providers' capabilities and resources (see quote 7).

The services implied problem-specific knowledge and process-specific knowledge to solve the problem and required knowledge on experts that were planned to be part of the execution task. Thus, top manager, middle manager and team manager from the client and service provider were active in the task. Moreover, executing employees needed to be trained and educated on the problem, the client firm context and the problem-solving strategy. Particularly in the cases where the services or similar services were produced firm internally before, a considerable amount of knowledge transfer became evident. The clients often wanted to have the problem solved through the same problem-solving strategy as done onside, i.e. Cases C and D (see quote 8). In Case C, these analysts were trained for three weeks at the client location. Similar training was evident in the other cases, although in these cases the service provider went to the offshore location rather than the other way around.

All cases indicated that this knowledge transfer required a co-location of client and the service provider. The services were planned to be relocated in exactly the same manner as done onshore. Case A and B were different as the services were not produced in a central and coordinated way onside. Thus, the managers did not have much experience with best practices before the services were offshored and could only transfer minor process related knowledge to the service provider. In

order to design a problem-solving strategy that was suitable to the client, the service provider had to understand the problem and its context.

The knowledge that needed to be transferred in this task, i.e. best practices or firm- and problem-specific knowledge, requested a transfer via personal interaction. Depending on the tacit dimension of the knowledge, this transfer frequently required inter-sight interaction especially when there was the need to demonstrate best practices or less rich mechanisms such as telephone conferences, if the client had no previous personal experience and could not elaborate much on problem-solving strategies. The knowledge co-creation in this task is based on a knowledge amplification approach (see quote 9).

Each party used their own experience and knowledge related to the problem, both firm contexts and their own experience on production processes in order to collaboratively design a problem-solving strategy. Like the client, the service provider had often produced similar services before and developed capabilities that helped to design a problem-solving strategy. In some cases, not just a team manager was part of these discussions, but also the analysts and executing employees allocated to the execution task of the services. These co-creation activities were strongly driven by the service providers. The clients left the design of the problem-solving strategy to the provider before interacting and co-creating the problem-solving strategy. Knowledge creation activities commonly happened once the service provider had transferred knowledge for instance trained the experts.

Iterative production process. Through iteration, problem-solving tasks became decreasingly evident as the problems of clients were often not greatly diverse and thus, it was unnecessary to design new problem-solving strategies. Evident were modifications to strategies, however, these were made by the service provider and did not include the client firm. In particular, client-specific knowledge and process-specific knowledge became obsolete. Due to decreasing activities in the task, the team manager or executing experts from the provider remained active in the tasks. Through iteration, the transfer of client-specific knowledge and process-specific knowledge diminished. Once the service provider had completely understood the client context through repetitive learning, subsequent production processes did not require any related knowledge transfers in consecutive cycles. Once best practices were understood in the first cycles, the subsequent production

processes decreasingly required additional knowledge, thus reducing the need for personal interaction.

Similar to the knowledge transfer, the need to create knowledge through amplification was gradually reduced through iteration. Once the service provider understood the problem-solving strategies, there was no need for the two parties to further amplify knowledge. As the client had no experience and knowledge with the capabilities of the service provider, it was not possible in the consecutive production processes to even suggest new problem-solving strategies for efficiency improvements. Although the service provider gradually attempted to increase efficiencies in problem-solving, the client was not part of this improvement attempt any longer.

Co-production in the choice task

Initial production process. The choice task was in the first round of the production cycle motivated by the client (see quote 10). Top-level managers or middle managers that were already part of the problem-finding and problem-solving tasks took the choice of the problem-solving strategy and how the following tasks should be executed. The task was often not clearly separable from the problem-solving task as decisions of how to solve the problem was already decided upon during the previous task. Similarly, the more knowledge was transferred and co-created, for example through training sessions in the previous task, the more clarity existed in the production process, making the task less significant. Once the problem-solving strategy was decided upon, the client manager transferred the decision to the service provider through a phone call or via email. No inter-sight interaction was needed in this task.

As this task was mainly located at the client side, not much knowledge creation was evident. The cases reflected that if there was co-creation between the service provider and the client then it was mainly clarification or justification based knowledge co-creation. The clients either needed more information on the suggested problem-solving strategy or suggested changes leading to knowledge justification. Knowledge related to the suggested problem-solving strategy needed to be justified and secured in a more tangible explicit form through documents or contracts.

Iterative production process. Through iteration, in some cases such as in Case A, this task shifted from the client to a service provider responsibility. Once the service providers became more familiar with the firm context and the characteristics of the iterative and often repetitive service requests, service providers took over the ownership of the task. All cases also reflected that this task was considered to be rather unimportant and only took a short amount of time as the problem-solving strategy was discussed in the previous task and no surprises were expected.

Co-production in the execution task

Initial production process. The data indicated that the execution task was driven by actions of the service provider and implied several different activities. Firstly, the actual problem needed to be solved. Secondly, the client wanted to be updated on the progress of this execution. Finally, the problem needed to be delivered to the client. The task required activities by experts and team managers from the service provider side and middle managers from the client side. The actual problem-solving activities did not require much active knowledge transfer from the client in any of the cases. In all cases, the service provider executed the actual problem-solving, such as the data collection, presentation and analysis (e.g. as required in Case A); if there were knowledge transfers in this task, then it was only additional knowledge on best practices or process-specific knowledge.

However, the clients still interacted with the service providers on a regular basis and regularly controlled the progress of the service provider in order to govern the execution process. The service provider used these calls to see if activities are completed according to the clients wish reflecting knowledge justification activities. The calls mostly included discussions concerning global industry activities enlarging the knowledge of both actors (see quote 11). This information was then used in the deliverables to the client. These interactions are either in form of phone calls as discussed in the quote but were equally often through other mediums (see quote 12 and 13). Moreover, the delivery of the final report from the service provider to the client required the active knowledge co-creation. The cases indicated that without the integration of the information and enlargement of client knowledge, the problem could not be solved (see quote 14). The delivery was sent via email and then followed up by a telephone discussion. Co-location

and inter-sight interaction was considered to be unnecessary in all four cases for this enlargement of knowledge.

Iterative production process. With iteration of the production process, the execution task started without much delay after the problem was identified. Problem-solving and choice tasks gradually reduced or were totally taken over by the service provider without any co-production. There was a clear distinction of activities evident, i.e. once the problem was found, the execution started. The relationship gradually changed (see quote 15).

Despite the changes in the set-up of the production process, the co-production of clients remained mostly the same as in the initial production process. The transfer of knowledge reduced to almost nothing while the creation of knowledge remained the same. Regular phone calls still ensured that both client and service provider co-created knowledge either through knowledge enlargement or justification. Additionally, delivery activities did not change much through iteration and depending on the knowledge that needed to be transferred, together with the final problem solving delivery; different types of communication mediums were used with preferences made for telephone calls.

Co-production in the monitoring and evaluation task

Initial production process. The monitoring and evaluation task was mainly motivated by the clients and performed by middle managers (see quote 16). As all cases are parts of long-term offshoring centres, this task led to new cycles of service production processes often starting with a new identification of problems. During the task, the client informed the service provider if the problem was solved via a telephone call or an email. This transfer of knowledge was important for the service provider as it allowed understanding the effectiveness of the service production process. In Case A, the service provider stirred the feedback through surveys or feedback forms (see quote 17).

These forms were a documentation of the generated knowledge and did not require any further interaction if satisfactory to the client. If there were issues with the feedback, follow up calls, or even in cases of drastic issues, personal interaction was needed, which turned into knowledge creation activities. This

feedback led then to knowledge justification activities in which the client co-created knowledge. In some cases, also the clients coordinated feedback forms and evaluated the service themselves (see quote 18).

Iterative production process. The monitoring and evaluation task changed in the knowledge creation part, but there was no change evident on the knowledge transfer interactions through iteration. This task also remained distinguishable from the execution task but often blended more into the problem finding task. The unification happened especially once the service provider knew the client-specific knowledge and could also provide the client with potential problems the client might not recognize yet. The task dependency between the monitoring and evaluation task and the problem-finding task became, in some cases such as Cases C and D, increasingly reciprocal. It was argued in all cases that the client continued to transfer knowledge on the satisfaction of the problem-solved to the service provider mainly via email. This knowledge transfer was important for the service provider to improve operations as well and operate more efficiently. Knowledge creation, on the other hand, decreased as through a better relationship between client and service provider, problems in earlier process rounds were already eradicated.

DISCUSSION AND IMPLICATIONS

In studying knowledge transfers and knowledge co-creation as activities of co-production in each offshored task of various production process cycles, I found that a) client co-production is impacted differently by offshoring, depending on the epistemology of knowledge leverage and the knowledge dimension in the task, and b) the result of this impact on co-production in relation to the repetitive nature of the offshored production process result in modularization of tasks, and as a consequence, standardization of production processes and a change of service characteristics

More precise, the transfer of client- and process-specific knowledge in various tasks implied predominantly tacit knowledge and was challenged by the geographic distance between the client and service provider. The knowledge dimensions did not allow a codification that could simplify the transfer as the client either could not manage or did not want to codify this knowledge effectively

(Szulanski, 1996). For instance, client-specific knowledge such as firm internal information on strategies, organizational set-ups, or operational management was feared to be transferred to outsiders. Similarly, process-specific knowledge required training and the transfer of best practices that needed co-location to allow hands-on training and shadowing approaches. In order to overcome distance to reduce these offshoring enhanced barriers, actions and travels were needed. Although clients predominantly motivated knowledge transfers, these actions were mainly executed by the service provider, which took the lead and travelled to the client location or used onshore representatives based on the value creation logic of the services (Normann and Ramirez, 1994; Wittreich, 1966).

With a repetitive production process, clients were able to reduce the transfer of especially client-specific and process-specific knowledge, also implying the inherent necessity of co-location. The client and service provider developed a stock of common ground and trust through experience-based learning (Arrow 1962; Jensen, 2009; 2012; Nickerson and Zenger, 2004), a finding that goes in line with theory on alliances and how they evolve and sustain over time, i.e. generation of robust relationships through a decrease in cultural distance (Meschi, 1997), increasing trust (Gulati, 1995b), and stronger attachments to partners (Inkpen and Beamish, 1997). Any further repetitions of the task helped the service provider to develop routines and repetitive practices (Nelson and Winter, 1982) that did not need any process-specific knowledge transfers by the client any longer, indicating the firm's absorptive capacity (Cohen and Levinthal, 1990).

Contrary to knowledge transfers, the service provider motivated knowledge co-creation, emphasizing the need to integrate clients in the process not only to avoid mistakes and clarify problem- or process-specific knowledge, but also to secure transparency and knowledge justification regarding service-specific knowledge creation. Most importantly, it enabled the provider to take advantage of the client's knowledge stock and organizational / managerial capabilities (Lahiri and Kedia, 2009). Based on these dependencies, the service provider perpetually stimulated the client to co-produce the services and commit to knowledge creation as knowledge-intensive service literature indicates (Stabell and Fjeldstad, 1998); a finding that goes in line with recent work by Srikanth and Puranam (2014) who emphasize the need for on-going communication between actors when offshoring business processes especially regarding tacit knowledge.

Despite the expectation that this interaction and knowledge creation needed inter-sight interaction, telephone conferences were predominantly preferred as various experts could be reached at the same time. Instead of emphasizing the need for collocation, the need for effective interaction that allowed multiple actors to be reached was stressed. This finding juxtaposes studies that emphasize the “importance of face-to-face interactions in the production and distribution of new or complex ideas” (Leamer and Storper, 2001: 650) and concludes that knowledge creation does not necessitate inter-sight interaction. This is an interesting finding and allows furthering the understanding of knowledge management theories while contributing to the knowledge-based theory of the firm.

This finding is also applicable to iterative production processes. Although knowledge co-creation disappeared entirely in the problem-solving or choice task, where the service provider had perpetually taken over full task ownership, it remained strong in the problem-finding and execution task. Clients continued to co-create knowledge through amplification and enlargement as the accurate phrasing and understanding of the problem through knowledge amplification and the enlargement of knowledge in the execution was still needed. Existing theory on knowledge-intensive services support this continual need for knowledge co-creation (e.g. O’Farrell and Moffat, 1991; Schein, 1990; Mills et al., 1983).

Moreover, co-creation of knowledge will remain part of the responsibility for the client, indicating that knowledge-intensive services should never be entirely relocated and always remain an alliance between service provider and client (Mudambi and Tallman, 2010), applying a hands-off approach would be fatal. This finding might be the missing link to understand why some services are not successfully offshored beyond the questions of managerial issues such as hidden costs (Larsen, Manning and Pedersen, 2013). In summary, client co-production is part of the offshored production process of knowledge-intensive services during all times with less intensity over time, mainly due to reduced knowledge transfers, but will never decrease entirely. As knowledge transfers were more impacted by the geographic distance than knowledge creation, this change implies that challenges with geographic distance concomitantly decrease.

There are several implications of this finding that allows furthering academic literature. First, previous theoretical discussions on the management of knowledge in an international context has argued for a loss of knowledge or a lack of effective

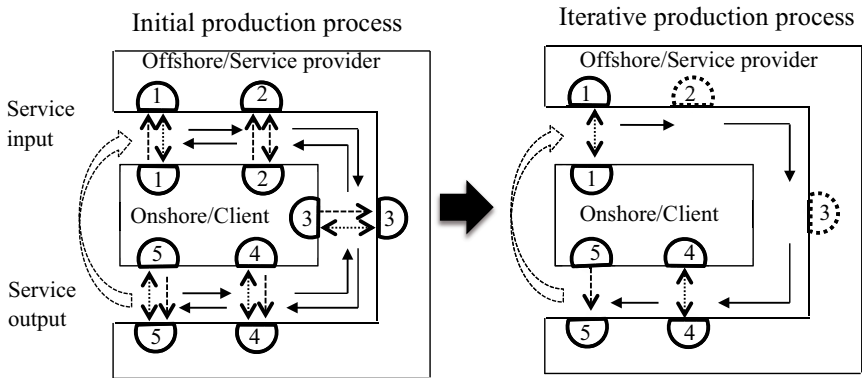
cross national transfer of knowledge (Simonin, 2004). The finding that knowledge creation is not much impacted by offshoring does counter the idea of a negative impact of distance on knowledge management. Moreover, the aspect that even though there is an iterative production process that reduces the transfer of knowledge, for example through learning the creation of knowledge is not impacted by this change. Continues knowledge co-creation by the client is essential for the production of the services at all stages. This finding adds to already existing literature that considers offshoring as a form of active alliance partnerships (e.g. Mudambi and Tallman, 2010) with a nuanced and fine-grained picture of how co-production actually looks like.

The second main finding of the study is related to the iterative and cyclical nature of the offshored production process in causation with the above discussed client co-production (see Figure 4.1 for a graphic representation). The finding builds on the first major finding of this paper. In the initial production process, tasks are reciprocally interdependent and task borders are difficult to discern. As a consequence of the changing co-production over time, some tasks gradually diminished and disappeared such as the problem-solving and choice task, while others became (accompanying this omission) more modularized such as the problem-finding and the execution task. This modularization results from the clear distinction between finding the problem and starting to execute the problem as the tasks in between these two tasks decremented. The development is a 'natural' progress and did not reflect a coordination to redesign and simplify processes to minimize dependencies like found by Srikanth and Puranam (2011).

The initial reciprocal task interdependence in the production process, reflecting no clearly defined task borders, transformed to sequential task interdependence with distinguishable and consecutive tasks, moving even towards pooled task interdependence. According to Voss and Hsuan (2009), this decomposability of services into different modules leads to standardization, which is counter to the discussed unique characteristics of the services that reject standardization, routinization and generalization (Løwendahl et al., 2001; Larssen and Bowen, 1989). Correspondingly, Wright, Sturdy and Wylie (2012) found that consulting-led services involve significant standardization despite the fundamental contradiction between standardization and innovation. I conclude that globally dispersed interdependent tasks in relation with changing knowledge

interdependencies within these tasks result in modularization of production tasks, standardization of production processes and change of service characteristics.

Figure 4.1: Offshored co-produced service production processes



Source: author's own - Rectangles indicate location, half circles indicate actors that (combined) produce task (1-5), dashed arrows represent knowledge transfer, dotted arrows (with 2 arrow heads) represent knowledge creation, task activities 1-5: *problem-finding and acquisition, problem-solving, choice, execution and monitoring and evaluation*

This finding has theoretical implications for literature on knowledge-intensive services, especially with regards to the management of production processes. Moreover, services operations management has comparably recently started to discuss service modularization (Voss and Hsuan, 2009). The paper contributes to this discussion as it empirical shows modularization of a service production process. Thus, the empirical outline of service modularization that is possible through the identification of client co-production is an advancement of service operations management literature.

Managerial relevance

The study holds various implications for client and service provider firms. First, it outlines the activities of the client and the service provider and how these activities will impact the successful or unsuccessful co-production of the services by the client firm. It provides client firms with the insights that co-production, and especially knowledge co-creation, will need to remain part of the entire offshored service production process during all times. A hands-off approach, once the service is offshored, is not feasible when knowledge-intensive services are offshored. The service provider will need to support this client co-production activity and motivate the client to remain part of the production process although clients often perceive offshoring as buying a ready product or service. Offshoring of knowledge-intensive services does not allow this approach.

Moreover, the study provides insights on how the services might automatically change characteristics and its structure despite the intent, often by the service provider, to change the production process (Srikanth and Puranam, 2011) and standardize the processes. Through learning and the development of routines leading to changes in the client co-production of the services, the services became ‘naturally’ more modularized and standardized. Finally, the study provides information on the different knowledge dimensions included in the production of the services and how these are effectively transferred and created in an offshoring context. This detailed picture can prevent service providers and clients from making mistakes in the production process or help planning and executing offshoring activities from the initiation over the transition of the services to the actual offshored service production.

CONCLUSION

This paper set out to study how offshoring impacts client co-production in the production process of knowledge-intensive services. Through an empirical analysis of several service production processes, I found that the different epistemologies of knowledge leverage in client co-production, knowledge transfers and knowledge co-creation, are impacted differently by offshoring over time. Contrary to what was expected, knowledge transfers were challenged more by geographic distance than knowledge co-creation, but also decreased more

significant over time reducing the challenges implied through geographic distance. Knowledge co-creation was not much challenged by geographic distance or by the iterative nature of the production processes.

Moreover, I found that the globally dispersed interdependent tasks of the production process in causation with these changing knowledge interdependencies in co-production within the tasks, resulted in modularization of production tasks and as a consequence, standardization of production processes and a change of service characteristics. I conclude that offshored knowledge-intensive services will at all times require client co-production and causes a change of service characteristics over time.

The study is subject to a number of limitations. First, I note the inherent limitations of the chosen research methods that allow gaining a holistic and dynamic perspective on the phenomena, but do not aim for generalization. The study provides a rich and detailed depiction of production processes of knowledge-intensive services including participating actors, activities and their causal links. Due to the special characteristics of knowledge-intensive services and the wide variety of services with different levels of knowledge-intensity, generalization within this context is generally challenging to achieve as researchers have noted (e.g. von Nordenflycht, 2010). However, this opens up more possibilities for future research that could study the production process of diverse services in more detail.

Second, the study did not take into account the outcome and antecedents of the production process; it solely focused on the process itself. Much research already studied these outcomes as the creation of value for the client and the client's integrative capabilities to acknowledge this value (e.g. Vargo, Maglio and Akaka, 2008; Prahalad and Ramaswamy, 2004; Grönroos, 2011). Moreover, antecedents of the process are the establishment of relationships between client and service provider that also were extensively studied (e.g. Vivek et al., 2008).

Third, although I contend that my findings are relevant to other knowledge-intensive services future research could vary service contexts or offshoring contexts and study for instance co-production when services are offshored firm internally and not across organizational boundaries. I would expect that the transfer of client-specific knowledge, and maybe even to some extent the transfer

of problem- and process-specific knowledge, is reduced or non-existent when the services are offshored firm internally. This change would concomitantly reduce actions to overcome geographic distance and counter my findings that the transfer of knowledge is more impacted by offshoring than the creation of knowledge.

Another contextual change goes in line with Jones, Hesterly, Flandmoe-Lindquist and Bogatti's (1998) suggestion that actor constellations impact the production of knowledge-intensive services. This argument indicates that a distinction on the amount and professional level of participating actors impacts the production process of the services; or that the individuals that converse and interact influence knowledge transfers and creation as Harada (2003) argues. Similarly, Dibbern, Winkler and Heinzl (2008) as well as Manning (2014) argue that personnel turnover imply increased client challenges and costs for offshoring. A micro-foundational study on actors and knowledge transfers / creations could elucidate these issues such as done by Minbaeva, Mäkelä and Rabbiosi (2012), who studied the motivation of knowledge transfers by actors.

Appendix 4.1 – Interview Guide

The interviews started with general questions on the position, background and daily duties of the interviewee, as well as a free description on the characteristics and production process of the specifically chosen knowledge-intensive service that was produced in the service centre. Then the interviewer explained the value shop tasks and asked if the described production processes reflect the five tasks.

Then questions on the task activities were raised:

Problem-finding task

- activities to identify client problem
 - communication with client (what/how/where/who)
 - knowledge gained and exchanged
 - concerns/challenges voiced/formulated
- changes over time

Problem-solving task

- activities done to design problem-solving strategy
 - planning of problem solving strategy (how/who/where)
 - employees involved in planning of problem solving strategy
- activities done to converse problem-solving strategy
 - communication of the strategy (how/who/where)
 - challenges faced when explaining the strategy to the client
 - concerns from service provider/ client
- activities done to enable problem-solving
 - enabling problem-solving (training etc.)
 - executing problem-solving
- changes over time

Choice task

- activities to decide upon strategy
 - what choices and who decided
 - communication of choice
- changes over time

Execution task

- activities done to execute problem

- execution of service (how/where/who)
 - communication of information/knowledge (mechanisms/who/how)
- kind of information that was communicated
 - client role/service provider role
- activities done to deliver problem solving
 - service delivery (how/where/who)
 - reaction on problems with delivery/service
 - client/service provider role
- changes over time

Monitoring and evaluation task

- activities done to control execution
 - control of the execution task (how/who/where)
 - communication with client
 - client/service provider role
- activities done to evaluate task
 - quality evaluation (how/where/who)
 - communication of evaluation (how/where/who)
- changes over time

General questions

- experience of cultural/language/additional difficulties
- challenges to transfer/codify/de-codify knowledge

Appendix 4.2 – Quotes

Quote 1: *“some SMEs are very cooperative they are teaching us, they are trying their level best to educate the associates and [...] pass on their great knowledge to their associates, but there is certain reluctance, we have experienced and we are experiencing still from some associates, for them it's like a mother and child relationship”* (Regional Delivery Manager of Case D)

Quote 2: *“These communications make you understand the client's perspective and [...] you know what the client is looking for, then it becomes easier”* (IC Manager of Case A)

Quote 3: *“They [the client] weren't sure what they are looking for then we had a discussion with them and gave them some ideas regarding what we can do, also depending on their requirements and what the end requirement is [...] So we posed some questions for them and we narrowed down the search focus. These things are usually request client calls, to understand what strategy we follow and what will be the end objective of this output, what they want from us.”* (IP analyst of Case B)

Quote 4: *“We will also use office communicator but we are minimizing that because we consider that mail is a more powerful media of communication as it will be going to multiple, I mean many different, amount of people, if it is communicator it is one to one same with meetings.”* (Regional Delivery Manager of Case D)

Quote 5: *“Now before starting with any project, we usually have a client call in order to understand their objective behind performing this search and their requirement, because usually a new search request comes now through email. We go through that search request and the process that they send us via mail about the search request. In some cases the search request is very clearly explained and in some cases not. We go through a client call in every case before initiating a search.”* (IP analyst of Case B)

Quote 6: *“it's easier when you talk to him [client project manager] because you can directly ask him questions, in an email it becomes subjective and you have alternatives as to how you could interpret the service and what needs to be done, so that's always ambiguous, but you lose that over time.”* (Team Leader of Case C)

Quote 7: *“you look at the capabilities of your employees, who can do what kind of work and accordingly you choose the team members to work on the project. Then you get started,”* (CI manager of Case A)

Quote 8: *“I and four others went to [the onshore location] to actually directly sit with the client and understand more about how do they do the reports and how do they research. [...] So initially we did go and take a look at what are the different sources that they use to actually get the information required for the products [...] So initially for a couple of days we underwent briefing sessions where we were told about how [the client company] works and what are the different processes within [the client company] and how my clients [direct contact person] fits into that bigger organization. So after getting that overview we underwent tools training [...]. And after that I sat directly with my end client who also actually made these reports that I'm currently doing. So I sat with him for about a week or so, kind of like a shadowing process; he took time out and explained in detail the certain nuances in terms of presenting or analysing certain situations, why is he taking that stance and what kind of information do you put versus how much do you filter.”* (MR Senior Business Analyst of Case C)

Quote 9: *“The request comes in and we try to understand with the team, how to solve the issue and try to understand what are the requirements. Then eventually when we have a common understanding of what we are going to search for and what is required, then we will start the project and have some discussions with the client....”* (IP manager of Case B)

Quote 10: *“...with that proposal, you go back to the client executive and say that this is what we propose, this is what we understand of what you want. This is what we propose to deliver to you and this is what we will charge you for it.”* (CI Manager of Case C)

Quote 11: *“...weekly we will have two calls, one hour long. In that one hour the initial 10-15 minutes we'll spend discussing the work that I'm currently doing, so getting feedback directly and then the rest of the 40 minutes we would discuss what is happening in the industry sector and how does it actually affect different companies.”* (Business Analyst of Case B)

Quote 12: *“it is depending on what needs to be discussed. See because many times the client counterparts are also on a travel, so email often.”* (CI Senior Practice Expert of Case A)

Quote 13: *“I mean having good communications is the best thing you should have, have people come over, visit each other. Now we have a lot of these videoconferences and webinars going on. So we insist on at least a webinar if not a videoconference with the client so that we can share screens, show exactly what we mean. The interaction easily goes several notches higher if you are able to see the face of the individual.”* (IP AVP of Case B)

Quote 14: *“you directly send the report you have done and send it across to the client. You explain what you were supposed to do [...] and then you discuss it with the client and send the final delivery if the client is satisfied, we sometimes do not have a final discussion call but sometimes we do.”* (CI Group Manager of Case A)

Quote 15: *“I would say the work we do for [the client firm] now is more a rapport based partnership. Previously, it was very automated. Whatever deadlines we have been communicated, you have to meet it come what may. This has changed a lot.”* (CI Business Analyst of Case A)

Quote 16: *“the client would come back to me saying that look this is not working well, maybe we need to look at it from a different perspective, maybe increase the efficiency or maybe the team requires some kind of training so that in next projects we don’t repeat this mistake.”* (CI Senior Practice Head of Case A)

Quote 17: *“Once we completed the project to the satisfaction of the client then we share the feedback form, where we have various parameters where we are judged on project methodology, the way we communicate our governance call, return communication or verbal communication, interaction with the client. Those are the various parameters on which a client evaluates us.”* (CI Senior Practice Head of Case A)

Quote 18: *“we always try to get feedback from them [the client firm] most of the times there is no feedback of such [...] but certainly if there is some issue or something which we need to discuss, something which might have been important for this case then we have a call and discuss the various scenarios how it can be done by using our information.”* (IP Manager of Case B)

CHAPTER 5

Conclusion

Summary

I set out to study how offshoring impacts on the production of services. The objective was to investigate two processes that cause organizational and operational reconfigurations due to the geographic relocation of services. This perspective allowed furthering the understanding of activities and actors, going beyond the already existing static perspectives on offshoring that predominantly discussed the antecedents and benefits of offshoring hitherto. Two process perspectives were emphasized; the *offshored transition process*, which relates to a strategic and organizational change process and the *offshored service production process*, which reflects the management of service operations. In studying these processes, I was able to gain dynamic and detailed perspectives on offshoring, especially on activities and actors that are part of these processes and their impact on the production of services.

The three research papers of the thesis with their individual findings make distinct contributions to academic literature. The first paper finds that offshoring acts as an exogenous shock to a service production system consisting of task execution, task resources and task outputs. The changes of one of these features prompts a misalignment of the system that requests a realignment process via constant reconfigurations of actors and practices, till the system is stable and realigned. This realignment is incited through a bottom-up rather than a top-down approach, depending on executing employees from the onshore and offshore location.

The second paper builds on economizing and cognition to understand how cost and value outcomes of knowledge-intensive business services change with a physical separation of client and service provider. Propositions about task decomposability, firm experience, and repeated relationships as drivers of cost and value outcomes are designed. This discussion helps to understand when offshoring may take place and also how service production processes change over time.

Following these conceptual findings and using a similar production process framework, the third paper studies actors and their actions in the production process of knowledge-intensive services. I find that the different components of co-production, knowledge transfers and knowledge creation are impacted differently by offshoring over time. Counter to what was initially expected the co-creation of knowledge by clients was not greatly impacted by geographic distance or by the iterative nature of production processes, contrary to knowledge transfers, which were more challenged but also decreased over time. These knowledge interdependencies in connection with the nature of the production process caused modularization of production tasks, resulting in standardization of production processes and changing service characteristics.

Together, these papers outline three major impacts of offshoring on the production of services. First, offshoring is an endogenous or exogenous shock to service productions caused by changing components of a service production system or changing service production processes. These changing systems and processes predominantly resulted in modified service characteristics. Second, actors that are part of the service production, whether they are individuals or teams, predominantly cause these shocks. Third, offshoring impacts the causal links of activities and actors that influence the service production. Each of these general findings holds implications for theory and possibilities for future research, which are explored in the following section.

General Findings and their Theoretical Implications

The first finding indicates that offshoring implies changes to components of service production systems or service production processes, which lead to changing characteristics of the services. This exogenous or endogenous inflicted change needs to be managed efficiently in order to overcome organizational and operational challenges. Notably these changes predominantly culminated in a modification of the characteristics of the services from being unique, complex and highly context dependent to more routinized, standardized and generalizable services. For example, the relocation and transfer of the services across geographic space implied that the realignment of service operation systems led to the standardization of the services (see Paper 1). Similarly, the production process of the services changed through the disintegration, transfer and reintegration of the

services in another organizational context (see Papers 2 and 3). Both papers indicate that the service production process adapts to new actors and changes towards a new production process demonstrating varying degrees of standardization. Considering the knowledge-intensity of the services under study in both papers, this is a finding with remarkable implications, especially for service (operations) management theory.

As the global economy is changing to a highly knowledge-based economy (Empson, 2001; Gardner, Anand and Morris, 2008), the findings concerning globally dispersed services are expected to have wider implications for theory and practice. Furthermore, service operations management concepts have not found ample attention in international business research and consequently, I presume benefits in combining both fields. As mentioned before, the majority of research on offshoring so far, studied manufacturing contexts or did not acknowledge the unique characteristics of services in offshoring. Nonetheless, this thesis exemplifies that the characteristics of the service play a major role in offshoring.

The second general finding emphasizes actors that are part of the offshoring activities and their impact on the offshoring transition or offshored production of the services. All three papers found that these actors imply great importance, be it as the reason for misalignment of practices and actors (evident in Paper 1), or the challenges of transferring or co-creating knowledge across geographic space (discussed in Paper 3). More emphasis was placed on the micro-foundations of actors in studying cognitive distance (studied in Paper 2). Thereby, an isolated view on actors from either the client or the service provider side that has dominated in academic research on offshoring so far, is found to be limiting and I argue for more combined views of actors such as applied by Jensen (2012) or Manning et al. (2008).

Further research is needed in order to gain a more thorough understanding of the individuals in the phenomenon and their interactions in the processes. This call for more actor focused research goes in line with a recent development in strategic management and organizational literature, calling for more micro-foundational research (Abell, Felin and Foss, 2008; Felin and Foss, 2005; Foss, 2011).

The last finding emphasizes the meaning of causal links and interdependencies in investigating service offshoring. This underlines process perspectives chosen in

the thesis. The perspective on causal relationships between stability and change, prompted through offshoring, enabled a more thorough understanding of the practices and actors that need to be aligned in a service production system (see Paper 1) or on the causal relationship between actors and activities in the production of the services as evident in Papers 2 and 3.

This perception is connected to a recent acknowledgement in the offshoring literature stream that more research through activity and process perspectives are needed. Research studied organizational configurations (e.g. Kumar, von Fenema and von Glinow, 2010; Lampel and Bhalla, 2011; Luo, Wang, Jayaraman and Zheng, 2013; Srikanth and Puranam, 2014), with regards to learning processes (e.g. Jensen, 2009), changing relationships (e.g. Vivek, Banwet and Shankar, 2008; Vivek, Richey and Dalela, 2009) and changing management practices (e.g. Pereira and Anderson, 2012). While this literature often chose organizational levels to study change processes, the thesis goes a step further towards the activity level and micro-foundational perspective. Thus, the papers in the thesis extend the recently developing literature stream with insights into the operational as well as organizational implications of offshoring. However, further research is needed to provide a credible account on the impact of offshoring. Specifically, additional studies regarding the interdependencies in the processes are needed as they can take many different forms (see Paper 2 or Thompson, 1967).

General Limitations

There are some general limitations of this thesis. First, as argued in the introduction, all three research papers focus on the processes related to offshoring such as the offshoring process or the offshored production process as we know little about these processes hitherto. With this focus on processes, I contribute to a research area that allows answering ‘how’ services are offshored rather than the comparably static questions on ‘why’ are services offshored (prospective point in time) and what are the benefits of offshoring (retrospective point in time). However, it could be argued that antecedents and the reason of why firms offshore might impact these processes. Similarly the benefits or expected / intended benefits of offshoring might impact the way the services are offshored or produced. A study on the impact, decision-making or offshoring reasoning have

on production process could shed light on remaining questions. Such a research scope could potentially help understanding why some offshored service production processes are ineffective. Similarly, studying the offshoring process or the offshored production process and its impact on the gained benefits to a more thorough extend, could provide further insights on the practical implications of offshoring.

Second and as discussed in more detail in the methods section, there are inherent limitations of the chosen research methods. The application of qualitative case study research in two papers was essential for the research question as well as research aim of this thesis. Nonetheless, there are limitations to this research method. While the applied method allows gaining holistic and dynamic perspectives on processes related to service offshoring and arguably is essential for a process-oriented research, generalizability of findings is limited. Case study research allows providing rich and detailed depictions of either offshoring processes or offshored production processes with an emphasis on actors, activities and causal links. It does not allow that findings can be inferred to a broader population and generalized.

Moreover, the aspect of generalizability is difficult when studying knowledge-intensive services. Von Nordenflycht (2010) argues that the characteristics of the services and the varying degree of knowledge-intensity challenges generalizability in the context. Thus, the third general limitation of this PhD thesis is the strong emphasis on knowledge-intensive services rather than services in general. The unique characteristics of the services are especially emphasised in Paper 2 and 3. Although the focus on these services allows studying the most challenging contexts of service offshoring, it also restricts to generalize findings to less value adding and knowledge-intensive services.

Concluding Remarks

The thesis took a novel and dynamic approach to service offshoring and studied two processes in order to investigate the impact of offshoring on the production of the services. This perspective was argued to be necessary as established offshoring literature hitherto has been static and therefore, restricted to answer how offshoring of services, especially knowledge-intensive services, can be effective.

Additionally, the focus on actors and activities has provided new insights on offshoring, and allowed studying the causal links and interdependencies between these activities and actors. Thereby, offshoring as well as services were considered as contexts of a phenomenon that allowed combining different theories from strategic management, organizations and operations management literature. This approach enabled to gain new insights on service offshoring, especially in a knowledge-intensive service context.

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