Chapter 7
Offshoring White-Collar Work: An Explorative Investigation of the Processes and Mechanisms in Two Danish Manufacturing Firms

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Abstract The purpose of this chapter is twofold: to explain why white-collar service work in manufacturing firms is increasingly subject to offshoring and to understand the effects of this process on work integration mechanisms. The empirical part of the study is based on two case studies of Danish manufacturers. First, the chapter finds that drivers of white-collar work offshoring in many respects are parallel to those of the earlier wave of blue-collar work offshoring, that is, cost minimisation and resource seeking. Second, due to the interdependence of white-collar tasks with the rest of the organisation, our results suggest that white-collar offshoring in manufacturing firms poses higher requirements to the organisational configuration and capabilities compared with blue-collar work. We conceptualise the effects of white-collar work offshoring in a framework relating white-collar work to integration mechanisms companies instigate to manage it on a global scale.

Keywords White-collar work · Manufacturing firms · Offshoring · Case studies

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7.1 Introduction

The powerful forces of globalisation are pushing the global deployment of work into rapid development (e.g. Ferdows 1997; Farrell 2004; Gereffi 2006; Mudambi 2008). Manufacturing firms from the traditional industrial 'triad' of North America, Western Europe and Japan are organising their operations in global operations networks, replacing the traditional collocated and vertically integrated value chain. The globalisation of standardised manufacturing operations based predominantly on blue-collar work began some decades ago. However, recent developments in offshoring also include the spread of the phenomenon to new occupational areas based on more knowledge-intensive white-collar work (e.g. Lewin and Couto 2007; Kennedy and Sharma 2009). Friedman (2005) argues that the world has been 'flattened' by the convergence of the major political events of the past two decades, innovations and companies. These three factors combined have created new conditions, methods and tools for international and inter-firm collaboration, making geographical divisions increasingly irrelevant. As a result, the mobility of value-chain activities has increased, and current research seems to suggest that work can occur wherever the right technologies, skills and knowledge can be found (Doh 2005).

The purpose of this chapter is to explore and discuss this trend white-collar offshoring from the perspective of manufacturing firms. Such firms have been pioneers with regards to blue-collar offshoring and therefore provide a good starting point for a discussion of the offshoring of white-collar activities. However, while this has been documented in the literature (e.g. Brainard and Collins 2005; Mudambi 2008), this new development of white-collar offshoring leaves us with unanswered questions. First of all, what drives manufacturing companies to offshore white-collar work? White-collar work, characterised by its creative and intellectual nature (Hopp et al. 2009), is argued to be more difficult to dispatch from the home organisation (Yu and Levy 2010), and it is therefore pertaining to understand why firms seek to relocate these activities abroad. Secondly, what are the firm-level implications of white-collar offshoring? The question is important because offshoring is not simply a case about jobs being moved offshore; rather, it is about a fundamental reorganisation of work, in which different tasks are affected. International business literature has investigated the challenges of successfully integrating globally dispersed activities (Birkinshaw et al. 1995; Kim et al. 2003; Kumar et al. 2009). However, whether the same assumptions are equally applicable for white-collar offshoring in manufacturing firms is an underexplored topic. In response to these concerns, this chapter aims to explore why white-collar service work in manufacturing firms is increasingly subject to offshoring and to understand the effects of this process on work integration mechanisms for the firms involved.

The empirical foundation of this chapter consists of two qualitative case studies of Danish manufacturing firms involved in offshoring white-collar work. The context of Denmark offers a good opportunity for offshoring analysis and potential generalisation of its results to other industrialised countries. Denmark is no

exception to the growth in scale and scope of the offshoring phenomenon. The country enjoys high level of industrialisation and economic development and has high labour costs, and the manufacturing sector has traditionally played a very important role in Denmark's economy. Statistics Denmark (2008) reported that 19 % of all Danish companies (with 50 or more employees) sourced internationally. The same study found that the offshoring phenomenon affects most parts of the value-chain activities and is no longer confined to standardised non-core activities.

Based on the case studies employed in this chapter, we argue, first of all, that the antecedents and drivers of white-collar work offshoring in many respects are parallel to those of blue-collar work offshoring, emphasising cost- and resource-driven strategies. Second, we suggest that although the main drivers of offshoring white-collar work are similar to those for blue-collar work, the nature of white-collar work results in different challenges, mainly the integration of offshored white-collar work with domestic activities. This has implications for the effective integration of the globally dispersed activities to which we propose a refined framework of global integration based on the types of offshored white-collar work.

The chapter has three parts. The following section introduces the theoretical background of the study. We then proceed with the methods and the case studies used in the chapter. The third section presents the discussion before we conclude with the major findings and limitations of the study.

7.2 Theoretical Background

Manufacturing companies increasingly participate in highly complex cross-border arrangements involving a wide array of partners (e.g. Gottfredson et al. 2005; Mol et al. 2005; McIvor 2005; Pyndt and Pedersen 2006). A wide amalgam of interchangeable terms is used in the academic and professional literature to describe these practices. These include global sourcing, international outsourcing, subcontracting, offshoring, the globalisation of production, to mention just a few. To reduce the terminological muddle, the variety of terms in this chapter are condensed to one—offshoring. The term 'offshoring' is used here to denote the idea of dispatching work to owned subsidiaries and/or third parties in a foreign country.

The offshoring research to date can be characterised by a sectoral division, that is, analysis of the offshoring phenomenon is often bound by individual sectors of the economy (Brainard and Collins 2005). The literature discussing offshoring of services tends to focus on traditional 'service sector' represented by software services firms, call centres and business process outsourcing (BPO), that is, service providers, while the literature dealing with manufacturing firms is largely preoccupied with production offshoring. In this chapter, we argue that to gain richer insight into the offshoring phenomenon, especially regarding high-value knowledge-intensive activities, it is important to reach beyond this traditional split. Therefore, this chapter focuses on the service-oriented white-collar activities of manufacturing firms and seeks to understand the drivers and mechanisms of

white-collar work offshoring. In defining white-collar work, we draw on Hopp et al.'s (2009) definition classifying work as blue or white collar in relation to two dimensions: (1) Intellectual versus Physical: white-collar tasks involve significant use of knowledge, while blue-collar tasks entail primarily physical transformations and (2) Creative versus Routine: White-collar tasks rely on creativity and novel solutions, while blue-collar tasks involve repetitive application of known methods.

One might rightly argue that the idea of offshoring is not new. Although it has reached unprecedented level in recent years, the first significant waves of production offshoring began in the 1960s as 'soaring wage costs in the industrialised countries raise the prospects of wholesale movements of industrial facilities across national boundaries' (Leontiades 1971, p. 20). According to De Vita and Wang (2006), the 1980s mark the epoch, when the notion of 'small size and high value' rather than 'large size and high volume' was accepted as the key to competitiveness. The idea of 'small size and high value' was encapsulated in the concept of core competence (Hamel and Prahalad 1990), which called for managers to build core competencies; anything other than this should be considered as candidates for outsourcing or, in other words, an external provider should be employed.

Offshoring, in its more traditional understanding, has therefore dominantly concerned blue-collar work, such as production. According to Hutzschenreuter et al. (2011), if compared with the offshoring of production processes, the offshoring of service-oriented white-collar activities is a fairly new phenomenon. The widespread offshoring of white-collar activities might even seem counterintuitive for a number of reasons. First, they are situated locally and often depend on local conditions. Because they have been developed and kept in-house for a long time, these activities are closely interlinked and often are heavily dependent on the organisational systems from which they originate (Blackler 1995). Second, the transferability of these activities is likely to be low. It is hampered by challenges of capturing and transmitting tacit knowledge characterising white-collar work (Grant and Gregory 1997; Szulanski and Jensen 2006). Third, the rate of change of knowledge also affects how it should be transferred (Ferdows 2006). Although specific metrics are lacking for assessing the speed of change of a particular knowledge type, it is reasonable to expect that because of intellectual and creative nature of white-collar work, knowledge related to it is likely to change faster than knowledge related to blue-collar work, characterised by manual and routine nature of tasks.

Yu and Levy (2010) also examine the reasons why we may expect it is more difficult to offshore professional white-collar work than blue-collar manufacturing work. These reasons may be organised into three groups: the staff-related, the process-related and the institution-related. First, the staff-related factors deal with how white-collar staff, due to their ability to control the conditions of and inputs to the work (primarily knowledge), become 'non-substitutable' or otherwise develop capabilities to safeguard their work and to oppose offshoring through political means (Levy and Murnane 2004).

Second, the process-related factors deal with the organisation of work processes and the degree of transferability of work processes. Due to a lack of appropriate supply market opportunities and a low degree of routinised work that can be

specified into discrete rules, white-collar work is less mobile than blue-collar work. This can partly be explained by the above-mentioned staff-related factors, but also by the nature of the work processes. From the world of manufacturing, we know that the development of robust processes improves manufacturing mobility (Gregory and Grant 1997). A robust process can be cloned and transferred to a host site while maintaining network commonality and avoiding adaptation costs. Robust processes can be transferred to any location and will be appropriate for the local conditions as they, by definition, are host independent. White-collar work in general does not lend itself easily to this form of standardisation as it is less repetitive and more reliant on a given set of host characteristics compared with most blue-collar work processes.

Third, the institutional- and location-specific factors supporting work can be found partly in the national institutions and their support structures, rules and norms and in the relational arrangements with suppliers, universities and even competitors; participation in such arrangements often requires a local presence. In other words, the white-collar work requires face-to-face communication and is related to the contextual setting in which the activity is taking place, resulting in its lower 'offshorability' (Kim et al. 2003).

Nevertheless, there is some evidence to suggest that the higher value-adding higher-skill-content activities are also increasingly affected by the offshoring trends (e.g. Lewin and Couto 2007; Statistics Denmark 2008). Lewin et al. (2009), for instance, argue that companies have begun to offshore innovation as a response to a 'global race for talent' explained by a growingly insufficient (Western) home–country supply of qualified labour. As the existing models of offshoring do not necessarily fully predict and explain this development, the first inquiry to the case studies is accordingly to unravel factors explaining this paradoxical development.

For the development of efficient and effective global value chains, it is important to understand the radical fine slicing, or in other words, fragmentation of the value chain and its effect on various job categories as well as their integration in the pursuit of network synergies. Firms today need to create advantages based not only on the efficacy of individual functions or particular sites, but also on the advantages that may derive from the interplay of these two things and from the utilisation of global synergies. In the following, we outline our methodology and discuss the case studies in order to illustrate the process and organisation of dispersed white-collar work and to answer propositions outlined in the previous sections.

7.3 Methodology and Case Studies

The empirical part of the study is based on two case studies of Danish manufacturing companies. They are currently engaged in a number of initiatives that stretch their operations on a global scale. The main focus of the case studies is on the companies' attempts to exploit opportunities from offshoring white-collar work, or, more specifically, procurement and R&D activities. The key criteria for the selection of the

cases were as follows: (1) involvement in global dispersion of activities and (2) implementation of white-collar work offshoring initiatives. In each case, a focal function was chosen at the outset of the study (i.e. procurement and R&D), and an in-depth study of the global configuration, interdependencies of the business function in focus and the ongoing work processes within it was conducted. For each case, we conducted formal semi-structured interviews (Case A is based on 4 interviews and in Case B 6 were conducted) and a number of informal discussions with informants during site visits also served as a source of information (4 site visits were conducted in Case A, and Case B company was visited 3 times). The interviews ranged from one to two hours. The interviews were used to gain an in-depth picture of each company's situation. In addition, documents and records were studied, including annual reports, press releases and presentation material to customers and stakeholders. The offshoring process started prior to our involvement in the cases. Therefore, some events relevant to the study had to be captured in retrospect.

The case study, one of several qualitative research methods, has been chosen for this investigation for several reasons. First, case studies can describe, enlighten and explain real-life phenomena that are too complex for strategies of inquiry requiring tightly structured designs or prespecified data sets. Second, according to Yin (2009), case studies are generally preferred for answering 'how' and 'why' questions about a contemporary phenomenon over events in which the investigator has little or no control. The current study satisfies all three criteria (i.e. the type of questions, phenomenon and controllability) and thus is well suited for the case study strategy. The phenomenon of white-collar work offshoring is still at the understanding and discovery stage. Instrumentally, the case study strategy can further understanding of particular issues or concepts which have not been deeply investigated so far (Eisenhardt 1989; Yin 2009). Furthermore, the case study strategy does not split a phenomenon from its context. This feature of the case study method is consistent with the need to better understand value-chain reconfigurations and their effect and changing demands on types of jobs and their integration within manufacturing firms. It is also very important for studying various aspects of the process of offshoring, which is tightly interlinked with its context. As far as the controllability issue is concerned, case studies again emerge as the preferred method. On the one hand, we had sufficient access to the actual phenomenon through direct observation of the events and interviews with the people involved. On the other hand, the amount of control we had over the events did not allow the application of other methods such as a participatory action research.

7.3.1 Case A: Organising Procurement on a Global Scale

Company A develops and markets a wide range of children's life-enriching products and has grown to become one of the world's best-known brands. Today, the company's core business is built around the production of plastic elements construction toys. It has approximately 7,000 employees worldwide.

Facing serious financial difficulties in 2003–2004, the company embarked upon a widespread production offshoring initiative, which resulted in a significant reduction in jobs at the company's domestic site in Denmark. In 2005–2007, the offshoring initiative was based on collaboration with external manufacturing service providers, with the main capacity groups being relocated to Hungary, the Czech Republic and Mexico. The plans to locate the capacity groups in these countries were determined by the considerations of cost minimisation, market proximity and economies of scale. In 2008, the challenges of coordination and control influenced Company A to phase out the partnership with its major outsourcing partner while maintaining its globally dispersed production set-up by taking control of the overseas sites.

The reconfiguration of the company's production set-up had the most immediate effect on the blue-collar production employees and the organisation of the manufacturing system. However, this process also affected other functions connected to the manufacturing system. For example, the procurement function, which was traditionally centralised and located in Denmark, changed dramatically as a result of the production offshoring initiative. In 2005, as Company A started transferring production to the external manufacturing service providers outside Denmark, the procurement function followed the suit. This meant that the scope of the procurement task was significantly reduced, as the procurement department remaining in Denmark had to support only one production site, which was significantly downsized. Slimming down could be observed in all categories of the procurement function (i.e. raw materials, print and packaging, finished parts, promotional material).

In 2008, as the company 'back-sourced' the sites in Hungary, the Czech Republic and Mexico, the procurement department of approximately 70 employees was again faced with the challenge of acquiring materials for the whole company, that is, the lead site in Denmark and the three sites overseas. Initially, the management of the department consisting of the vice president for procurement, directors responsible for procurement categories as well as global buyers dealing with strategic suppliers was located in Denmark, while local buyers in charge of routine procurement tasks were distributed globally among the four sites.

The geographical dispersion implied the relative independence of the local procurement departments. Nevertheless, these local procurement departments were given mandates to acquire materials and components not only for local sites but also for the sites located in other countries. Explaining the reasons for this, a senior manager in Denmark noted:

> Although we could also service foreign sites from Denmark, today there is a tendency to delegate more procurement tasks to foreign sites. By doing this we empower these sites and often they can also do the tasks cheaper.

It was a big coordination challenge and difficulties were highlighted by procurement staff in all four countries. The overseas production sites were very different from the company's lead site in Denmark. Consequently, the three sites were struggling with the way things were done at the lead site. This was also true

for the procurement departments at each site, as they had different levels of maturity, which were culturally distinct and in some procurement categories had low commonality of purchase. A senior manager stated:

> Coordinating under this circumstances is a huge task for us. It requires not only changing procedures, but also changing the mindset.

Another challenge for the organisation of procurement was that the critical mass of production was increasingly shifting to offshore locations. In 2004, almost 95 % of the company's production capacity was located in Denmark. However, in the end of 2009, this figure dwindled to 60 %. To keep up with this trend, the tasks of more creative and intellectual nature were offshored. For example, the head of the procurement function was located in the Czech Republic, which was emerging as an important central European hub for the company. As part of the attempts to ensure that the procurement function is organised so that it can effectively support the company's global production footprint, a number of global buyer positions, responsibilities of which involved negotiations with strategic suppliers, were also offshored.

A number of integration mechanisms were used to ensure the global integration of routine tasks (e.g. local buyers) and creative/intellectual (e.g. global buyers and management) tasks subjected to offshoring. These included programs stimulating having an aligned approach towards suppliers, bundling procurement across production sites as much as possible to leveraging volume at the supplier markets and developing shared terminology, processes and methodology (tools and templates).

7.3.2 Case B: Managing Offshored Product Development in the Mobile Telephone Industry

The second case focuses on the Danish subsidiary of one of the largest mobile telephone manufacturers in the world. The subsidiary (henceforth Company B) carries out all value-chain activities from the concepting phase of the mobile telephones (i.e. laying out the overarching functions of the phones as well as market segments to target) to the mass production of the phones that will be distributed and sold on a global scale. On average, 50–80 employees (mainly engineers) work on each project. In total, around 1,200 people are employed at Company B.

In 2007, the MNC headquarters of Company B decided to broaden the portfolio of mobile phones on the market. The decision was based on the belief that a diversification strategy would capture further market shares and eventually increase profits. For the Danish subsidiary, the consequence of this was that it needed to triple the number of mobile phones developed each year from approximately four to twelve. Inevitably, this caused a major capacity challenge for the management of Company B as the amount of in-house engineers and resources available was scarce. As a result, the management decided to outsource selected product development projects to a Chinese subsidiary of a large Taiwanese electronic components manufacturer.

More specifically, while the development of lead products (e.g. with breakthrough innovations) was retained in-house in Denmark, the management decided to outsource some 'copy product' projects (products with less complex technologies that have been used in previous models) to the Taiwanese client, resulting in a virtually parallel in-house and outsourced organisational set-up. A senior manager in Denmark explained this:

> It wasn't a top-down, but a bottom-up decision. The individual development sites were told that they should make X number of products, and then it was up to the local management to find out what the heck we should do. We didn't have the capacity to make all these products and our guys couldn't deliver it. We then found out that we should make some joint R&D.

The Chinese partner had been chosen for a number of reasons. For instance, besides the obvious resource-saving rationales from relocating the product development to China, the partner possessed—as one of the largest companies within the field of electronic component manufacturing—much relevant expertise and knowledge that Company B saw the potential of tapping into. Moreover, Company B had used the Chinese manufacturer as an electronics components supplier for some years prior to the full-scale outsourcing decision. The two had thus already an established relationship, which eased the process of relocating entire product development projects.

Predominantly, two types of white-collar work were affected by this offshoring decision. First, it concerned the engineering work related to developing and testing the product. The outsourced projects of 'copy products' used already developed technologies (i.e. existing keyboards, cameras, antennas). Hence, the work processes were relatively easy to dispatch to the Chinese partner while retaining a high degree of integration with the remaining organisation. Second, in order to soothe the transition process of reallocating the offshoring projects, Company B had decided to replicate its own organisational structure with the outsourcing partner and was therefore forced to also offshore the more administrative white-collar work. Due to the nature of the work as being more intellectual and creative, it was not possible to standardise the tasks and processes to the same extent as the engineering work. While the requirements for the engineering work were well documented prior to the transition, the challenge of aligning the Chinese management in charge of the offshored activities with Company B's expectations proved to require substantially more resources for control and overheads and close collaboration through measures including weekly video conferences and extensive travelling between Denmark and China. As one senior manager explained it:

> We ended up reviewing their drawings, controlling the quality, and checking whether the test results were good enough.

A related challenge was the rising concern among Danish employees (in fact, both engineers and the project manager) that the newly established parallel in-house/outsourced product development organisation would eventually undermine their future prospects in the company. As one senior manager put it:

> People in the company see it as if we are selling our core competences. On a design level, people have been very nervous and cautious towards the JRD. In the old days, it was rocket science to make good mobile phones. That's not the case today, however. Everybody can easily buy all the necessary phone components on the market. But if you have made these components internally for the last 20 years, you will think that it is still a core competence for the company.

Interestingly, however, in the years following the decision to offshore, the project management team in Denmark experienced a steep learning curve when it was necessary to optimise the organisation of remaining in-house projects to increase efficiency (e.g. improving operational issues such as time-to-market and, more broadly, improving sourcing and communication strategies). As explained by one senior manager in Denmark:

> What's going on? How can they be so fast? Working together with the supplier has actually been a kind of a wake-up call for us. They have demonstrated that they can make products that are on level with our products, and they can even make it faster than us with the same quality. This was a surprise for many in Denmark.

Thus, although the white-collar offshoring required an unexpected amount of resources regarding knowledge transfer, coordination, control and design, it has arguably not reduced or deterred domestic activities, but has in fact released resources to conduct more value-adding activities such as managing more knowledge-intensive and complex projects.

7.4 Analysis and Discussion

The case descriptions provide empirical illustrations of a process that has become increasingly common among manufacturing firms from the traditional industrial centres of Western Europe, North America and Japan. Table 7.1 summarises the key characteristics of the cases.

7.4.1 Drivers of White-Collar Offshoring

In Company A, cost minimisation and market-seeking drivers triggered the company's decision to offshore a large part of the in-house manufacturing. The initiative momentarily affected the company's procurement function, making it subject to the offshoring trends. In this case, white-collar work (buyers and top management of the procurement function) followed blue-collar work (manufacturing) due to the inherent interdependencies between these sets of value-chain activities. Effectively, the nature of the interdependences not only within but more importantly between functional units across national borders becomes crucial (Kumar et al. 2009). Company B, in response to the need to increase its capacity,

Table 7.1 Key characteristics of the cases

	Company A	Company B
Company	Producer of plastic elements construction toys	Subsidiary of world leading mobile handsets manufacturers
Function in focus	Procurement	R&D
Drivers of white-collar offshoring	Proximity to production cost minimisation	Cost minimisation need to increase capacity
White-collar jobs and tasks affected	*Local buyers* • Routine/manual work • Loose technical coupling *Global buyer/management staff* • Intellectual/creative work • Tight authority coupling	*Engineers* • Routine/manual work • Loose technical coupling *Administrative/management staff* • Intellectual/creative work • Tight authority coupling
Challenges of white-collar offshoring	*Local buyers* • Few problems *Global buyers/management staff* • Aligning domestic and offshore sites (levels of maturity, cultural distinctiveness and low commonality of purchase)	*Engineers* • Few problems *Administrative* • Aligning in-house and offshored set-up • Knowledge transfer
Integration mechanisms	*Local buyers* • Standardisation (manuals and templates) *Global buyers/management staff* • People-based/information-based (frequent personal meetings, video conferences)	*Engineers* • Standardisation (process documentation/codification) *Administrative* • People-based/information-based (frequent personal meetings, video conferences)

decided to outsource all product development (including the project management) for two of its products. On the one hand, this caused much frustration in Denmark as Danish employees (both engineers and project managers) feared this would mean the end of their work. On the other hand, the initiative prompted a steep learning curve for the existing project management team in Denmark and allowed the company to reap the benefits of 'economies of focus' on the higher value-adding activities.

The study supports the finding of some research (e.g. Lewin and Couto 2007; Kennedy and Sharma 2009; Lewin et al. 2009) that white-collar work is being offshored, just as blue-collar work has been. As the cases illustrate, to some degree this can be attributed to the dominant logic of cost reduction through offshoring and outsourcing to low-cost countries, that is, the logic that is currently commanding the attention of so many companies all over the world. Bettis et al. (1992) refer to this logic as the logic potentially leading to industrial decline and argue that outsourcing to low-cost countries is usually triggered by pressures on 'underperforming' businesses to improve cost and profit performance. For the

companies in the case studies, the impact of the prevailing industry trend towards offshoring was significant. However, this only partially explains the global dispersion of white-collar work in the case studies. In case A, the global dispersion of the procurement function was triggered by the production offshoring initiative. Overtime, the initiative escalated further and involved higher-skill-content procurement tasks. Company B increased the scope of the collaboration with the development partner overseas as experience was gained. This suggests that the virtues of white-collar offshoring in manufacturing firms go beyond the mere low-cost-driven strategies often characterising blue-collar work offshoring (Dossani and Kenney 2007). Thus, while the antecedents of white-collar offshoring in manufacturing firms possess several similarities to blue-collar offshoring, the picture is more multifaceted due to the linkages between blue- and white-collar work as well as broader societal trends driving firms to rather search for qualified labour abroad.

7.4.2 Mechanisms of White-Collar Offshoring

Perhaps more interestingly, the case narratives suggest that differences exist in integrating different types of white-collar work (routine/manual work versus intellectual/creative work). The existing literature acknowledges that one of the major consequences of offshoring is the mounting challenge of successfully integrating the globally dispersed activities into the organisational system (Ernst and Kim 2002; Henderson 1994; Kim et al. 2003). For example, Kim et al. (2003) point out that the effective modes of integration are highly dependent on the nature of the globally dispersed activities and conclude that formalisation- and centralisation-based modes of integration are less effective for globally dispersed R&D units than they are for manufacturing. The cases presented in this study advance our understanding further and illuminate how some white-collar tasks subjected to offshoring can be successfully integrated using formalisation-based mode. In both cases, the white-collar work that was characterised as manual and routine work and that was coupled to the technological flows in the organisation could to a high degree be standardised and codified through explicit work manuals, procedures and process. However, the same did not apply to the content of the white-collar work involving management tasks of a relatively high tacit and flux nature (Grant and Gregory 1997; Szulanski and Jensen 2006). For instance, in Company A, it was hardly possible to standardise the relationship between global buyers and strategic raw material suppliers; it often required intense face-to-face negotiations. Likewise, Company B experienced that it needed to closely monitor and control the performance of its offshoring partner to ensure that the work actually being done fulfils defined quality standards. Accordingly, this generic difference between the white-collar offshoring (manual/routine versus intellectual/creative) types was manifested in the challenges of integrating the tasks. For instance, an immediate consequence of offshoring the projects to the Chinese manufacturer was the

unexpected challenge of transferring the necessary knowledge to ensure that the quality of the offshored activities would meet the corporate standards and expectations.

The cases also show how the high environmental context dependency characterising the white-collar work complicates the nature of the task being offshored and its interdependences to remaining activities. In particular, when attempting to integrate the white-collar work with the manufacturing firm's activities, the cases clearly demonstrate ongoing challenges related to knowledge transfer between the geographically dispersed activities, control of the performance and outcome of the offshored activities and coordination of the activities. For instance, Company A experienced a need for continuous efforts in integrating the offshored procurement function. On the one hand, the four departments were geographically distant, and on the other hand, distinctiveness between them also revealed itself through differences in maturity, cultural differences and challenges of aligning all aspects of procurement activities exclusively through standards and templates. Company B gradually realised the appropriate modes of integration through a learning-by-doing approach. This provides interpretive grounds related to the topic of 'invisible costs' (Stringfellow et al. 2008) or 'extra-client costs' (Dibbern et al. 2008) in offshoring research, which points to the post-transitional costs and challenges of offshoring. This post-transitional unit of analysis is interesting as it points to the core of firms' dynamic capability of integrating globally dispersed knowledge-intensive business activities (cf. Eisenhardt and Martin 2000; Teece et al. 1997; Teece 2007). Said in other words, firms with a poor ability to integrate offshoring activities will encounter a higher degree of post-transitional 'hidden' costs. However, due to the relatively higher complexity of more creativity-based white-collar work, the risk of encountering hidden costs is greater.

In sum, the cases show that an impact of the decision to offshore white-collar work is the ongoing challenge of successfully integrating the globally dispersed activities. An impact of offshoring white-collar work in manufacturing firms can thus be argued to be related to the manufacturing firm's overarching system knowledge spanning over all the globally dispersed activities in organisational system. Said in other words, the decision to offshore white-collar work challenges the manufacturing firm's ability to recognise the boundaries of the white-collar work activities in order to devise appropriate interfaces and interdependences between the organisational activities. This way the companies can successfully ensure a coherent organisational reconfiguration with a reduced risk of escalating post-transitional costs relating coordination, control, design and knowledge transfer (Dibbern et al. 2008). Both case companies exemplify that to successfully manage the offshored white-collar work, they needed considerably more knowledge of the entire organisational system, which they, arguably, acquired through learning-by-doing approach. This observation supports the existing literature examining the reasons why we may expect that it is more difficult to offshore professional work than manufacturing work (e.g. Yu and Levy 2010).

7.4.3 A Conceptualisation of the Integration Mechanisms of White-Collar Offshoring

The findings suggest that white-collar work presents firms with different integration requirements. More specifically, white-collar offshoring appears to challenge manufacturing firms' ability to successfully integrate offshored white-collar activities into a concerted organisational system in another way than blue-collar activities. In this regards, it is important to point out that white-collar work is highly diverse in its content and nature; hence, the potential 'offshorability' of white-collar tasks may also be different.

According to Hopp et al. (2009), white-collar tasks can be differentiated according to how intellectual, physical, creative or routine they are. A fruitful way to differentiate between various types of white-collar work may therefore be by assessing their interdependence with the rest of the organisation. The concept of loose coupling (Thompson 1967; Weick 1976, 1982; Orton and Weick 1990) provides a useful outset for such an assessment. Two common types of coupling elements are the technical couplings that emerge between technology, task and role and the authority couplings that are found in positions, rewards and sanctions. The technical and authority couplings hold the organisation together and make up the basic infrastructure that allows firms to produce desired outcomes. Orton and Weick (1990) argue that loose coupling is a dialectical concept combining the contradictory concepts of connection and autonomy. The concept of loose coupling conveys the image of a system consisting of interdependent parts that vary in the number and strength of their interdependences. Such a system is coupled because its parts are linked, but the coupling is loose because the parts preserve a certain degree of independence and are subject to spontaneous changes. Connection and autonomy can therefore be expressed through the constructs of responsiveness and distinctiveness. The level of responsiveness and distinctiveness of white-collar tasks may vary depending on how tightly they are coupled with the 'technical core' of the primary value-chain activities. White-collar work that is tightly coupled to these activities is likely to be more responsive to the processes in the system than white-collar work that is loosely coupled and allows 'the intrusion of the variables penetrations from outside' (Thomson 1967, p. 12).

Examining global integration, that is, coordination and control of business operations across borders, Kim et al. (2003) distinguished between four integrating modes: people-based, information-based, formalisation-based and centralisation-based. First of all, people-based integration characterises coordination and control of activities through the transfer of managers, teams, committees and integrators [cf. a 'personal' type of integration (Child 1972)]. Second, information-based integration describes coordination and control through impersonal communication means such as mail, internet/intranet and electronic data interchanges and coordination through information systems (Galbraith 1973). Third, formalisation-based integration uses standardised work procedures, rules, policies and manuals to ensure integration [cf. coordination by standardisation (Thompson 1967)]. Finally,

centralisation-based integration relies on decision-making authority at the higher levels of command [cf. centralising strategy of control (Child 1972)]. Echoing the research on task interdependence [e.g. Thompson (1967); van de Ven et al. (1976)], Kim et al.(2003)] concluded that people-based and information-based integration modes were generally more effective than formalisation-based and centralisation-based modes in integrating functions globally. However, while this international business integration terminology elucidates central assumptions in the organisation of multinational enterprises—namely which modes of integration are more effective for different business functions—it does not discriminate between the type of employment being offshored.

Based on these findings underpinning the challenge of integration of offshored white-collar work, we propose a reframing of Kim et al.'s (2003) four modes of global integration. This is, on the one hand, based on the type of white-collar work being offshored (Hopp et al. 2009), and, on the other hand, the work's dependency on loose coupling as an organising principle (Orton and Weick 1990) (Fig. 7.1).

As the cases presented in this chapter demonstrate, white-collar work is not a uniform homogenous category. We can differentiate between the types of white-collar tasks based on how intellectual, creative, manual or routine they are. Employing Orton and Weick (1990) constructs of responsiveness and distinctiveness, we also differentiate between tightly coupled and loosely coupled white-collar activities.

In these cases, the management tasks can be defined as tightly coupled to the organisation because of their distinctiveness as well as continuous and relatively higher responsiveness to the realities of the organisation they originate from. As a result, it became more resource demanding and challenging to reallocate this type of white-collar work in terms of the subsequent complexity and integration. On the

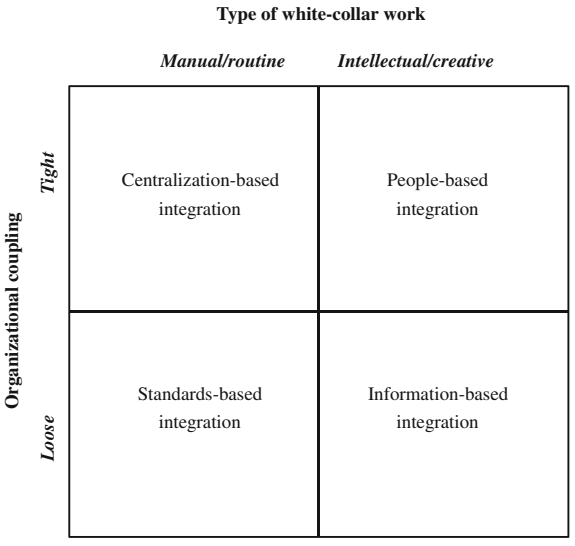

Fig. 7.1 Relating white-collar work, coupling and forms of integration

other hand, the local procurement and engineering work followed in this study can be categorised as loosely coupled to the core of the organisation. These activities are relatively more robust and irresponsive to the organisational system they originate from and can to a large extent be integrated through standardisation- or information-based mechanisms such as explicit process documentation. However, the cases also demonstrate that there may be situations when especially high responsiveness of organisational design is required, and all four forms of integration have to be utilised. On Fig. 7.1, these situations are illustrated through areas of overlap between more than one forms of integration.

This conceptualisation of white-collar work and relating it to the modes of integration creates a more intricate view of the 'offshorability' of white-collar tasks and mechanisms required to successfully integrate these tasks on a global scale. It provides complementary explanations as to why white-collar service work in manufacturing firms is becoming increasingly subject to offshoring and what are the implications of it in terms of integration mechanisms.

7.5 Conclusion

The purpose of this chapter has been to explore and discuss the phenomenon of offshoring white-collar work from the perspective of manufacturing firms. The focus of this chapter was why knowledge-intensive service work in manufacturing firms is becoming increasingly exposed to offshoring and on discovering the effects of this process on integration mechanisms in the firms involved in it.

Our findings show that the drivers of white-collar work offshoring in many respects are parallel to those of the earlier wave of blue-collar work offshoring, that is, cost minimisation and resource seeking. Moreover, this study also discusses causes which the existing offshoring and outsourcing frameworks do not necessarily adequately address. These causes are related to the interdependence of white-collar tasks with the rest of the organisation. Moreover, we find that white-collar offshoring in manufacturing firms requires a responsive organisational design and capabilities to manage it. Key means of dealing with this requirement include identifying and defining task interdependences and coordination.

We conceptualise the effects of white-collar work offshoring in a framework relating white-collar work to integration mechanisms companies instigate to manage it on a global scale. This conceptualisation contributes to the debates about the assessment of potential 'offshorability' of various types of white-collar tasks and how it can be integrated on a global scale. It provides complementary explanations as to why white-collar service work in manufacturing firms is becoming increasingly subject to offshoring and what are the implications of it in terms of integration mechanisms.

The results and conclusions of the study have several limitations. The first obvious limitation of the study is its geographical delineation. Because Denmark has been chosen as the main location of the investigation, generalisable parallels

that may exist have to be tested by replicating the study elsewhere. Second, the scope of the chapter has not allowed us to elaborate on all types of white-collar work offshoring. Because we limited the focus of the chapter to procurement and R&D functions, the basis for generalising the findings from these areas is a subject for further research. Third, the case approach used in the study involves many challenges. One potential bias of this strategy is in the selective memory of respondents. In the current study, these were offset by triangulating the interview data with related documents and records.

Despite these limitations, the complementary explanations revealed in this study for the offshoring process and its underlying mechanisms in manufacturing firms provide a basis for developing a more encompassing framework to better understand and manage the offshoring practices of firms.

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