

# Understanding knowledge re-integration in backsourcing

Kayode Ejodame<sup>1,\*</sup>

Email [k.ejodame@lboro.ac.uk](mailto:k.ejodame@lboro.ac.uk)

*Kayode Ejodame* is a PhD candidate in the School of Business and Economics, Loughborough University, UK. He holds a Master's degree in Information systems and Management from Warwick Business School, University of Warwick. His research interest lies in rebuilding organizational capabilities. He has presented his work in conferences such as the Annual Global Sourcing workshop.

Ilan Oshri<sup>2</sup>

Email [i.oshri@lboro.ac.uk](mailto:i.oshri@lboro.ac.uk)

*Ilan Oshri* is Professor of Globalization and Technology and Director of the Centre for Global Sourcing and Services at Loughborough School of Business and Economics, UK. His work revolves around outsourcing and offshoring of IT and business processes from knowledge and strategic perspectives. He is the author or co-author of 1014 books and numerous academic and professional articles in outlets such as *The Wall Street Journal*, *European Journal of Information Systems*, *MIS Quarterly*, *Journal of Strategic Information Systems* and other outlets. He is also the co-founder of the annual Global Sourcing Workshop ([www.globalsourcing.org.uk](http://www.globalsourcing.org.uk)).

<sup>1</sup> Loughborough School of Business and Economics, Loughborough, LE11 3TU UK

<sup>2</sup> Centre for Global Sourcing and Services, Loughborough School of Business and Economics, Loughborough, Leicestershire, LE11 3TU UK

## Abstract

Backsourcing is the process where a client firm brings previously outsourced services from a supplier back in-house. Traditionally, the existing literature on backsourcing has focused on how firms reach the decision to bring back previously outsourced services. In this paper, we move beyond focusing on IT backsourcing decision to explore the process of backsourcing from a knowledge perspective. The predominant view in the relevant literature argues that the re-acquisition of knowledge by a client firm during backsourcing takes place similarly to knowledge acquisition by a supplier in a typical outsourcing process. In this paper, we argue that knowledge re-integration in backsourcing occurs differently from outsourcing projects mainly because of the existence of knowledge asymmetries between the client and the supplier. By examining seven backsourcing events, we reveal that knowledge transfer and re-integration in backsourcing emerges as a coordinative activity, complementing knowledge transfer mechanisms reported in the IS outsourcing literature.

## Keywords

backsourcing  
expertise coordination  
knowledge re-integration  
outsourcing  
rebuilding capabilities

## Introduction

The outsourcing industry has witnessed a growing number of backsourcing events in recent years. A study by Deloitte Consulting revealed that about 70% of clients have had some negative experiences with outsourcing of which 25% have brought back their services in-house. Examples of firms that have backsourced services include JP Morgan Chase, Dell, AA, Farmers Group and Sainsbury's (Veltri and Saunders, 2006). The term backsourcing is defined as a process of bringing back previously outsourced or offshored services from a

supplier by a client firm (Wong, 2008). The decision to backsource is driven by a number of factors such as the need to achieve cost reduction, regain control and improve the quality of the service (Veltri and Saunders, 2006). So far, the extant literature about back sourcing has predominately focused on understanding the drivers and motivation to backsource services (Wong, 2008; Veltri *et al.*, 2008; Martens and Teuteberg 2010; McLaughlin and Peppard, 2006; Whitten and Leidner 2006; Lacity and Willcocks, 2000). However, recent interest in the phenomenon by Bhagwatwar *et al.* (2011) has highlighted the importance of understanding knowledge aspects in back sourcing from a process viewpoint. We build on Bhagwatwar *et al.* (2011) study and seek to further develop our understanding of back sourcing as a process, however, with a particular interest in understanding the reverse knowledge transfer process between the supplier and the client firm. In the case of back sourcing, reverse transfer of knowledge involves not only the process of knowledge transfer (Argote and Ingram, 2000) but also the re-integration of various forms of expertise, skills and knowledge into the client firm, with the aim of rebuilding organizational capabilities which may have been lost during outsourcing. Further, we argue that in back sourcing, the reverse transfer of knowledge from the supplier to the client firm is likely to face additional challenges to those reported in the IS outsourcing literature when knowledge is transferred from the client firm to the supplier (Vlaar *et al.*, 2008). At the heart of this argument is the observation that the outsourcing of tasks has been reported to result in the client firm losing domain knowledge (Wong, 2008; Cullen and Willcocks, 2003). Further, it has also been reported that the client firm has been mainly focusing on managing the outsourcing relationships with its supplier by concentrating on problem-solving activities, thus neglecting the development of an absorptive capacity needed to effectively acquire knowledge from its supplier (Chang *et al.*, 2012). On the other hand, past studies have reported that suppliers have developed a capability to absorb client knowledge in the most effective and efficient manner by deploying well-developed knowledge transfer methodologies (Fishman, 2012). We therefore claim that the case of back sourcing is likely to present the client firm with a knowledge asymmetry challenge that has so far been overlooked by the extant literature (Cullen and Willcocks, 2003).

In light of this knowledge asymmetry challenge, we seek to advance our

understanding of how the client firm transfers and re-integrates knowledge from its supplier during back-sourcing. Addressing this question requires the examination of the nature of back-sourcing projects. Indeed, back-sourcing projects may differ in terms of complexity and the nature of expertise needed by the client firm to transfer and re-integrate knowledge. For example, the back-sourcing of non-knowledge-intensive services such as call centre services would differ in complexity from the back-sourcing of a knowledge-intensive service such as a research and development activity. Complexity mainly comes into effect in terms of the *expertise* needed by the client firm when transferring and re-integrating knowledge as well as in terms of the interdependencies between the previously outsourced task and the client's service value chain. Consequently, we propose four back-sourcing configurations that are derived from the degree of *task interdependency* between the brought-back task and other tasks within the client firm (high or low degree of interdependency) and the *nature of expertise* (domain or generic expertise) needed by the client firm in order to transfer and re-integrate the knowledge.

#### **AQ1**

Seven back-sourcing events are used in order to examine how knowledge was transferred and re-integrated in the four back-sourcing scenarios. Consequently, a practical framework is developed in which knowledge re-integration is examined in each scenario. The analysis of these back-sourcing events suggests that, in order to cope with the knowledge asymmetry, the client firm has resorted to applying coordinative and sense-making mechanisms in addition to the outsourcing knowledge transfer mechanisms reported in the IS outsourcing literature.

This paper offers two main contributions to the IS outsourcing literature. First, we move away from the single-dimensional view of back-sourcing to offer four scenarios of back-sourcing. Second, we reveal that knowledge transfer and re-integration in back-sourcing may transpire as a coordinative activity, complementing knowledge transfer mechanisms reported in the IS outsourcing literature.

The remainder of the paper is organized as follows. First, the paper reviews the back-sourcing and the knowledge re-integration literature as a way of explaining the role of task interdependency and task expertise in back-sourcing. After the

description of the methodology and the seven backourcing events, the paper analyses the four backourcing scenarios which emerge from the degree of task interdependency and the nature of expertise in the backourcing events. The discussion section offers a framework to consider how knowledge re-integration transpires through coordinative and sense-making activities. Lastly, practical implications and directions for future research are offered.

## From outsourcing to backourcing: background

A review of the offshoring and outsourcing literature reveals a lively discussion of the motivation to outsource or offshore (Aron and Singh, 2005; Metters, 2008; Aron *et al.*, 2005), the outcomes of outsourcing and offshoring (Lacity *et al.*, 2010; Levina and Ross, 2003), as well as the processes through which success in outsourcing and offshoring can be reached (Rottman and Lacity, 2006). In contrast, the study of information systems backourcing is limited and has so far focused on understanding the determinants and motivation for backourcing decisions, shedding little light on the process of backourcing. For example, past research on backourcing has examined the drivers for backourcing decisions (Wong, 2008; Veltri *et al.*, 2008; Martens and Teuteberg, 2010; McLaughlin and Peppard, 2006; Whitten and Leidner, 2006). Some authors suggest that the process of backourcing may occur in a similar fashion to outsourcing, implying that backourcing could merely be a reverse of an outsourcing process (Butler *et al.*, 2011). Indeed, evidence from the IS outsourcing literature suggests that, during outsourcing, there is a knowledge transfer process of outsourced systems and tasks from the client firm to the supplier (Vlaar *et al.*, 2008). Further, the extant literature also suggests that some suppliers, such as Tata Consultancy Services, have developed advanced knowledge transfer methodologies that have become one of their organizational capabilities (Oshri *et al.*, 2008). Yet, for the client firm, backourcing is an occasional experience, for which the client firm is likely to lack the necessary expertise and capabilities for receiving knowledge from the supplier. Indeed, as reported in various sources, the backourcing process requires significant effort by the client firm to bring back previously outsourced services (Bhagwatwar *et al.*, 2011; Wong 2008). Predominantly, the decision to backsource requires the client firm to devise a plan to reverse its pre-existing outsourcing strategy and re-aggregate the previously disintegrated internal capabilities (Wong, 2008). While we acknowledge the existence of similarities between outsourcing and

backsourcing, we suggest that the process of backsourcing presents unique challenges for the client firm when re-integrating knowledge acquired from the supplier. For instance, for the client firm, re-acquiring the necessary skills and competencies is challenging because previous outsourcing arrangements often involve the dissolution of physical and human assets that leave the firm with little or no capabilities in this area. The process of recruiting new employees and purchasing new technical assets to ensure service continuity is a daunting task as well. Furthermore, negative perceptions commonly held towards management during and after outsourcing may result in additional challenges in the event of backsourcing, such as boosting employee morale after potential job losses. However, just as in outsourcing, the backsourcing process may differ along various dimensions; for instance, backsourcing can range from bringing back a single business function, for example, the IT helpdesk, to an entire department, for example, R&D. The latter would be larger in scale and budget and more complex in nature than the former. While we acknowledge that various challenges may be involved in the process of backsourcing, this paper focuses solely on knowledge re-integration challenges as the client firm rebuilds its organizational capabilities.

**AQ2**

**AQ3**

## Knowledge re-integration in backsourcing

At the heart of the backsourcing process is the re-integration of the knowledge of previously outsourced functions. Knowledge integration has been defined as “the process of absorbing knowledge from external sources and blending it with the technical and business skills, know-how, and expertise that reside in the business and IS units of a firm” (Tiwana *et al.*, 2003, p. 248). Knowledge integration is thus accomplished by combining diverse independent knowledge and making that knowledge inherent within an organization (Grant, 1996a, b). Knowledge re-integration can be improved subject to the firm’s ability to effectively absorb knowledge (Cohen and Levinthal, 1990). In the context of outsourcing, the transfer of knowledge and systems from the client firm to the supplier may hamper the client firm’s ability to re-integrate this knowledge when backsourcing. For one, a client firm is likely to face challenges retaining the knowledge of outsourced processes and activities over time as its experts would either be transferred to the supplier or would be re-trained to perform

new tasks within the retained organization (Bhagwatwar *et al.*, 2011; Wong, 2008). Furthermore, losing knowledge of previously outsourced functions may reduce the client firm's ability to re-absorb such knowledge as experts are now less familiar with this domain (Lane *et al.*, 2006). Given this stance, knowledge re-integration in backsourcing depends on how well the client firm is able to relate to the expertise needed when re-acquiring previously outsourced knowledge as well as its ability to re-integrate systems and knowledge within the organization. Thus, the main interest of this study is to examine how knowledge re-integration transpires in backsourcing by focusing on *task expertise*, as a manifestation of how well the client firm can relate to the needed expertise, and task interdependency, as representing the client firm's ability to re-integrate re-acquired knowledge during backsourcing.

#### AQ4

### Task expertise

Task expertise implies the possession of knowledge in the form of a skill or know-how required to perform a given task (Carlile and Reberich, 2003). Task expertise, however, may represent varying degrees of specialization (Orlikowski, 2002). For example, individuals may need generic expertise to perform a task that is rule-based and requires little knowledge of the social and professional context, such as data entry tasks. Other tasks may require more specific expertise that includes an understanding of the social and professional context of the task involved, such as the translation of a document from one language to another. As such, we propose two dimensions of task expertise: generic and specific. From a backsourcing viewpoint, the re-integrated task may present the client firm with the need to re-develop either generic or specific expertise.

### Task interdependency

Task interdependency is defined as the extent to which an organizational task requires some functional units to work with one another in order to perform the task (Van Der Vegt *et al.*, 2000). A high degree of task interdependency is likely to elevate interactions between counterparts as they attempt to coordinate their joint effort, such as the case of a new product development in which engineering, marketing and product development units are likely to collaborate.

On the other hand, a low degree of task interdependency, such as in a call centre operation, is likely to enable individuals and units to perform the task by themselves, with little interaction with other functional units. We therefore focus on the implications for knowledge re-integration in back-sourcing while examining the case of low and high task interdependency. Table 1 provides a summary of the characteristics of task expertise and task interdependency.

**Table 1**

Characteristics of task expertise and interdependency

Task interdependence		Task expertise	
<b>Definitions</b>			
Interdependent tasks involve multiple end users performing specific tasks that are components of broader interdependent business processes (Fleischer and Roitman, 1990)		Task expertise implies differences in know-how to perform a given task, where some individuals are more experienced than others or they are specialized in different domains (Carlile and Reberntsch, 2003)	
Characteristics		Characteristics	
High interdependence	High interdependence tasks require high levels of information exchange to clarify task assignments, develop effective task performance strategies, make decisions and obtain performance feedback (Andres and Zmud, 2002)	Specific expertise	Specific expertise represents unique knowledge of a particular area, which elevates the amount of effort required to adequately share knowledge across various domains (Carlile, 2004)
Low interdependence	Low interdependence tasks can be coordinated effectively with low information processing mechanisms such as rules and procedures (Galbraith, 1973; Mintzberg, 1979)	Generic expertise	Efforts to represent generic expertise are generally much easier, because a common language, shared artefacts and shared methods are more easily established and maintained (Carlile and Reberntsch, 2003)



Guided by the possible effects of task expertise and interdependency on the process of re-integrating previously outsourced knowledge, we now seek to examine seven backsourcing events in an attempt to shed light on challenges the client firm faces and consequently the approaches taken to re-integrate knowledge.

## Research method

The research approach adopted for this study was an exploratory case study (Yin, 2009). This approach was chosen because of its suitability, given the limited research on the backsourcing process and its applicability to define the early stages of understanding a topic area as well as theory development (Lee, 1989; Yin, 2009). In order to meet the main objective of this study, we selected seven backsourcing events in which previously outsourced functions were brought back in-house. We interviewed key informants who were actively involved in the backsourcing process (Kumar *et al.*, 1993). Table 2 outlines the profile of each interviewee and provides some additional contextual information. For confidentiality reason we have anonymized the names of the organizations that took part in this study.

**Table 2**

Data collection summary

Company name (pseudonym)	Number of Interviewees	Number of backsourcing events	Sector	Number of employees (2014)	Participating role
Company A (Kappa)	2	3	Banking	>140,000	Vice president (Operations)
Company B (Sigma)	1	1	Pharmaceuticals	>99,000	Technical manager
Company C (Gamma)	1	1	Insurance	>20,000	IT manager
Company D (Beta)	1	1	Automotive	>25,000	IT manager
					Technical manager

Company E (Omega)	9	1	Transport and logistics	>8,000	Tra pla Wa sup Op ma Pro pla
Total	14	7	-	-	-

## Data collection and analysis

Data collection occurred between 2013 and 2014. A total of fourteen interviews were conducted with key informants from seven backsourcing events.

Interviews were semi-structured and lasted 1 h on average. Interviews were recorded and fully transcribed. Appendix A shows the interview guide used during the interviews. Given the focus of the study, the appropriate informants were those in the client organization who have had adequate knowledge of the backsourcing process as a result of their direct involvement in the process.

The analysis of the data consisted first of organizing and classifying the transcripts to have an overall impression of the data; each transcript was classified according to the participating organizations. Secondly, the transcripts were coded, relying on a set of codes that originated from the literature review. This coding process involved an iterative process of reading through the transcripts and identifying statements that illustrated activities related to (i) task interdependency, and (ii) task expertise. Data analysis followed several steps. First, it relied on using the open coding technique to sort and refine themes based on the definitions (Strauss and Corbin, 1998). Secondly, these themes were linked to concepts (Milles and Huberman, 1994). The interpretation of the codes and development of categories were completed using the existing literature as this approach enhances confidence in the findings (Eisenhardt, 1989). We approached our analysis in two steps. In the first step, we examined the concepts of task expertise and task interdependency. We approached this with an underlying assumption that task expertise and task interdependency were the fundamental parameters for understanding knowledge re-integration in backsourcing events. The initial coding stage was then followed by the next step of analysing the coded statements in which we looked out for other constructs

that might emerge from the analysis. During the second coding process other constructs indeed emerged from the data, which we describe as properties of each backsourcing event. These properties include (i) the nature of knowledge repository and (ii) the level of task predictability. These two emerging constructs will also be discussed in our analysis.

## Backsourcing events

In the following section, we discuss the background of each backsourcing event that was examined in this study.

### Event one

Kappa (a pseudonym) is a leading financial service provider engaged in personal banking, credit cards, investment banking and wealth and investment management. It operates in Europe, the Americas, Africa and Asia with revenue of over 45 billion USD and thousands of global employees as in 2014. The bank has a long history of outsourcing, which has spanned over a decade. Most of their outsourcing activities were contracted with the biggest suppliers in the market at the time. These suppliers were mainly located in Europe and Asia. In 2011, the bank decided to bring back a service that had been outsourced for 11 years to a foremost IT company. This service was an Individual Savings Account (ISA) transaction processing application, which managed, monitored and traced cash movement within and outside the bank. Kappa required suppliers to improve the services that were outsourced, often demanding innovation and automation of processes if possible; in the case of the ISA applications, the supplier was required to fully automate the entire service, which removed all paper-based aspects of the process. The decision to backsource was as a result of the client's dissatisfaction with the supplier's performance in terms of innovation and competitiveness.

### Event two

Omega (a pseudonym) is a global chemical distributions company. Omega employs over 8,000 employees with revenue of about 10 billion USD in 2013. The organization has been actively involved in a series of outsourcing to service providers in IT, manufacturing, logistics and transport. The purpose for Omega outsourcing was to meet the increasing demand from its customers by

leveraging on technology systems that plan, execute and manage transport and logistics to over 100 locations around the United Kingdom. A third-party supplier provided and managed this service effectively for the duration of 5 years. However, in 2013, after a change in leadership, it was decided that the organization could no longer afford the cost of the third-party provider and could provide the same service with lower costs while maintaining control of the service. The back-sourced service was a typical enterprise system that executed and managed all truckload, less-than-truckload, inbound and outbound movement for more than 100 locations.

### Event three

In 2012, Kappa also brought back an entire business process that was contracted to manage issues relating to financial services of the deceased. The provider was responsible for managing all transactions and queries that pertained to the deceased in terms of closing accounts, managing life insurance, properties, estates and debts. This service was outsourced in 1999 so that the bank could focus on core areas. Subsequently in 2010, the bank decided to bring back the entire service in-house to ensure adequate monitoring of the service. Unlike the previously mentioned back-sourcing event, the initial outsourcing of this service was to a local supplier whose office was less than a mile from the client's organization.

### Event four

In 2001, Kappa outsourced a cheque and credit clearing service to an Information Technology Company to manage all aspects of cheque processing, reconciliation and other related back-office functions. It is important to note that Kappa went through two phases of sourcing. The first phase involved the period between 2000 and 2001 when there was extensive outsourcing and offshoring of services due to top management's desire to reduce costs because the financial services industry was suffering a slowdown in growth after the Dotcom crash. The second phase involved bringing these processes back in-house, as some of the suppliers were not able to satisfy the needs of the banks in terms of competitiveness and innovation. Thus, between 2011 and 2014, Kappa began back-sourcing some of its services to allow the bank to regain core capabilities and foster innovation. In 2010, the cheque clearing service was brought back in-house and consequently was managed in-house for 2 years.

Since then, this process has been outsourced to a joint-venture clearing house consisting of major banks in the UK, to process payments with greater efficiency than each bank could achieve individually.

#### Event five

Beta (a pseudonym) is a leading multinational automotive company. Its principal activity is the design, development and manufacture of cars. Beta employs over 90,000 employees with revenue of about 40 billion USD in 2013. Beta also owns a major information technology company in the UK. In 2013, top management at Beta made a decision to bring back the data centre and data management services from India to the United Kingdom.

#### Event six

In 2004, Sigma (a pseudonym), a leading multinational pharmaceutical, biologics and consumer healthcare company with over 90,000 employees across 115 countries globally and revenue of about 40 billion USD in 2013 signed an outsourcing contract with one of the biggest information technology outsourcing players in a 100.5 million USD deal. Under the agreement, the supplier was to provide remote server management and monitoring services for up to 5,000 servers situated in Sigma data centres in Europe. During this process, Sigma adopted a very cautious outsourcing strategy which involved a close partnership with its supplier. Similar to Bank A, Sigma looked to its supplier for continuous improvement of its services. In 2010, Sigma decided to run a test pilot of backsourcing to ascertain if it could meet the service level requirements of its customers while regaining control of its IT assets. The pilot backsourcing was a success. Subsequently, Sigma, in an incremental fashion, decided to bring more services back in-house, having been convinced that the organization could regain control of, and leverage on, its IT assets.

#### Event seven

Gamma (a pseudonym) is a multinational life insurance, pensions and asset management company. Gamma employs over 20,000 employees with revenue of over 20 billion USD as of 2013. The decision by Gamma to bring services back in-house was a top management strategic decision to leverage the economies of scale and centralize services. Gamma adopted a split backsourcing

strategy, in which data centre and technology operations were brought back from Asia into one of its newly developed European offices, while other business processes were brought back into a different European office. The backsourcing process commenced in August 2010, and lasted for up to 12 months. Gamma was involved in the reversal of two different business activities which were previously outsourced to a single supplier. These processes were (i) data centre management and (ii) business development. We were only able to gather information about the data centre management case, and this will be used in our analysis in the course of this study.

## The analysis of the backsourcing events

In this section, the analysis of each backsourcing event is presented mainly by examining the role that task expertise and task interdependency play in the process of bringing back previously outsourced functions. Our analysis suggests that four types, termed here as scenarios of backsourcing processes, emerge from the seven events, subject to the nature of task expertise and task interdependency. In addition, we examine how additional categories emerging from the data have affected the backsourcing process.

### First scenario

The first analysis in this paper comprises two backsourcing events – events one and two. These two backsourcing events fit into the same analytical scenario because they possess similarities in the nature of the task backsourced. For example, in the case of Kappa, the backsourced task was a financial transaction processing service called the “ISA processing and applications writer”. The ISA processing and applications writer as a business function entailed a systematic process of recording, tracking and reporting any cash movement inside and outside the bank. This business process for recording and reporting cash movement was initially a manual paper-based system before outsourcing; however, both parties reached an agreement that required the supplier to automate this process. It was evident from the information provided by the Operations Vice President at Kappa that the client firm lacked the internal capabilities to execute these processes:

*“We had already outsourced all of our capabilities in that particular area and*

*we didn't have as many systems or people in-house to do it ourselves”.*

In the case of Omega, the backsourced task was the management, planning and execution of all truckload and bulk freight inbound and outbound movement. The role of the supplier was to leverage on technology for managing this task in a timely and cost-effective way. Prior to outsourcing, the task was performed in-house using legacy systems and the outsourcing contract for this service contained a clause for an upgrade in the technology by the supplier.

The similarity between these two events is that both tasks are essentially processing activities; event one involves the managing of cash movement within and outside the bank, while event two involves managing goods movement in and out of the warehouse. The data from the interviews reveal that these two events required generic expertise to perform the tasks in-house.

The difference between generic tasks and specialists' tasks lies in the depth of skill required and the knowledge of the social and professional context. Both tasks in event one and two can be completed through the use of an operating manual, such that individuals who were either not specialists or were specialists in other areas could perform these tasks with little or no prior knowledge of the social and professional contexts. For example, the employees at Omega had single day training on the use of the new application to monitor and record goods movement in and out of the warehouse. The following statements made by interviewees about the level of expertise required to perform the backsourced task demonstrate this point.

#### **Statements for task expertise**

1. [OMEGA] Our people understand the idea behind goods movement, tracking and recording but this is a completely new technology and that's the only challenge. It's like buying a new phone; you already know how to make a call or send text messages, all you need are a few instructions, probably a user manual and enough time to get used to it. That's exactly what I tell my team and they get it

2. [KAPPA] It is a fairly simple task or process. It doesn't take too much to bring people up to speed.

3. [KAPPA] Finding expertise was not a difficult thing to do, because developing capacity isn't really difficult when the task is simple

With regard to task interdependency, interviewees described that, during execution of the backsourced tasks, there was limited interaction between the unit where the backsourced task was performed and other units or departments. For example, the operations department at Omega consisted of three umbrella units: transport, production and customer service. In the transport unit, a transport team of five people managed the backsourced task where each team member was solely responsible for either tracking goods movement and reporting, scheduling, goods movement or resolving errors from wrongly processed jobs. There was only minimal interaction within the transport unit as well as with other units or departments. Occasionally, they interacted with production or customer service during the initiation and completion of a transport order. We therefore conclude that these events present a low degree of task interdependency. Additional evidence from these events support our observation:

#### Statements for task interdependency

1. [KAPPA] The task itself is sort of loosely embedded but the systems that they used were integrated to our systems
2. [KAPPA] The process was [to] take an input from a customer, and process something to an output into [the Company] systems and you don't really need a lot of interaction with other Kappa departments on the way
3. [KAPPA] I'll say the ISA processing is loosely coupled with the rest of the tasks

In addition to evidence supporting the nature of task expertise and interdependency, two constructs emerged from the coding of the data: (i) the nature of knowledge repository and (ii) process predictability.

**The nature of knowledge repository** should be one header level down that the previous one.

In addition to the task expertise and task interdependency, interviewees in these backsourcing events indicated that in their backsourcing projects, knowledge repositories in the form of codified and explicit knowledge were in use. For example, there was extensive use of written plans, scripts and standard operating procedures by the employees as they embarked on rebuilding



capabilities within the retained organization. The following are statements that provide examples about the type of knowledge repository used in the backourcing project.

#### Statements for the nature of knowledge repository

4. [OMEGA] We're really clear about setting out processes, scripts etc., what they would have to do

5. [KAPPA] We always rely on process flow documents for the entire supply chain process and they know it; this way we can track the responsibility of each team at various stages

6. [OMEGA] Most of the calls coming in can be handled by trained staff by following a script

For example, the ISA application process was a software application that required the employee to fill in a digital form with account details of the individual's account and by following on-screen and off-screen instructions alongside performing a sequence of activities. Individual accounts could be updated with new information, new financial transactions could be processed and all of the individual's data were stored in the bank's database.

#### Degree of process predictability same as above

We observed in these two backourcing events that the sequence of activities around these tasks was unequivocal and predictable. The following are statements illustrating the degree of process predictability in these backourcing events.

#### Statements for degree of process predictability

7. [KAPPA] The actual activity itself is quite straightforward but at the end of the process it is the supplier's role to make payments when the accounts are closing down

8. [KAPPA] The applications that come in are straightforward and meet a particular criterion and they can be processed in the same way

9. [OMEGA] Generally speaking it is a quite straightforward process; even when something new or unexpected happens it can only be done using the process and that is down to the technology being used

An example of the relatively high degree of process predictability in the ISA transactions application is the standardized request process in which data were structured to ensure that the output produced various standardized indicators about an individual's eligibility for this type of saving.

Based on the evidence from events one and two, in terms of the characteristics of the backsourced task, the knowledge repository and the predictability involved, we argue that our findings correspond with the notion of administrative coordination (Faraj and Sproull, 2000). Administrative coordination is the process of allocating resources and producing the required outcomes through the application of formal mechanisms, such as scheduling, documents and formal communications that are used to bring processes together as observed by the use of project documents, blueprints and manuals during the backsourcing process.

Therefore we propose that:

***Proposition 1:*** Administrative coordination will support knowledge re-integration in backsourcing when task interdependency is low and task expertise is generic.

## Second scenario

The second scenario in our analysis is illustrated through the backsourcing of the account management of the deceased (event three). This process typically involved freezing accounts belonging to the deceased, transferring funds to the deceased's next of kin and closing down the deceased's insurance services.

From a task interdependency viewpoint, this business process presented a high degree of interactions between the deceased's account management and other units and departments with the bank, such as mortgage services, risk management, credit management and cards services. For example, if a customer died, the bank would be contacted by the family of the deceased and both the bank and the relatives would go through a series of questions to understand the financial status of the deceased. If the deceased had a mortgage, the mortgage unit of the bank needed to be contacted for issues relating to financing the property or if the deceased had a credit card, the card services needed to be

contacted for information relating to freezing credit accounts. In a similar vein, the insurance department needed to be contacted to manage the process of awarding compensation and transfer to the next of kin. Each of these departments worked alongside the deceased's account management unit to perform these tasks. The following quotations illustrate the degree of task interdependency between the deceased's account management and other units:

#### **Statements for task interdependency**

10. [KAPPA] There will be some level of interaction; if the person had a credit card, for example, then they'll have to contact [The Company] about it or if they had a particular product they would have to contact the product service about it. We were using the supplier's system that they had developed for this activity and they had access to our systems

11. [KAPPA] Yes, interdependency is high because if you are closing an account you have to notify the bank of that particular customer, that customer might have an insurance product with us, that customer might have a credit card with us and a loan with us, and the way the bank is set up is that these are all in different departments, so you will have to contact every single department which is a bit embarrassing

12. [KAPPA] The system is completely coupled regardless. [...] bringing it back now that is the difficult bit

While task interdependency presented a high degree of interaction, task expertise involved in the deceased's account management turned out to be generic, as illustrated in the following quotations.

#### **Statements for task expertise**

13. [KAPPA] We were able to recruit non-graduates to perform this role because the actual activity is pretty straight forward

14. [KAPPA] This is not a highly specialist area particularly in terms of operations processing, but there are so many different factors around the deceased management case

From the interviews, it became clear that the nature of expertise required was mainly concerned with knowing who to contact within the bank in order to process the deceased's account closure. In essence, the bank employee needed to work closely with other departments until the case was resolved (i.e. the

account closed, transferred or paid out).

## The nature of knowledge repository one header level lower than previous one

In addition to task expertise and interdependency, it was also indicated that, in this backourcing event, there was an application of explicit knowledge repositories. For example, the deceased's account management unit used records and contact databases in order to assist employees in their search for contacts in other departments as part of the handling of the deceased account. The following quotations illustrate the use of explicit knowledge repositories in this backourcing event.

### Statements for the nature of knowledge repository

15. [KAPPA] So if a relative dies, our guys will answer the phone and go through a list of questions to locate the deceased case management, which is responsible for handling this case

16. [KAPPA] So everything would have a process, everything is process mapped out

17. [KAPPA] They [the deceased management team] have access to our systems and database to identify the contact for the product service

## Degree of process predictability Heading should be one level lower than the main (second scenario)

Information provided also highlighted the relatively low-level predictability of how the process might unfold when handling a deceased account management case. For example, if the deceased had a joint account with a partner, resolving the case would require a unique sequence of activities by the bank employee, as compared with having a single account. Further, if the deceased had a stocks and shares joint account, the bank would need to follow a different sequence of activities, as compared with having a single stocks and shares account. As such, the sequence of activities for each account was unknown to the bank employee until there was a clear understanding of the accounts held by the deceased. The following quotations illustrate the degree of process predictability in this backourcing event.

### Statements for process predictability

18. [KAPPA] It is not kind of like a standard work flow system where you say let's do Task A, then do Task B, and do Task C; it is more of a case management where it could all be happening in a different order, or different times or concurrently

19. [KAPPA] You have to sit back and observe for a while because it doesn't always play out the way you map it out and I think we're guilty of always underestimating how complex these processes really are; it never is that straightforward, there are too many exceptions. So it is always quite painful

20. [KAPPA] Replication of the process is difficult, especially between tasks that are not so straightforward. Plus, it is a highly emotive area because if anything goes wrong we would get a lot of customer complaints in that area so we have to bring that in-house to control it, because obviously a grieving widow writing to the Sun or the Daily Mail wouldn't be a great news story for us

The evidence presented in this scenario, in terms of task interdependence and task expertise, suggests that the key challenge of knowledge re-integration as a result of back sourcing is in knowing whom to contact in order to process an unpredictable sequence of actions. On the other hand, it becomes clear that much of this information is captured in explicit knowledge repositories. Such a scenario follows Faraj and Sproull's (2000) contention of expertise coordination in which the employee is occupied with, and attempting to (i) recognize where knowledge is located, (ii) understand where knowledge is needed and (iii) act upon these pointers to knowledge in order to resolve problems. As such we propose:

**Proposition 2:** Expertise coordination will support knowledge re-integration in back sourcing when task interdependence is high and task expertise is generic.

### Third scenario

The back sourcing event of cheque verification (event four) is at the heart of this scenario. Cheque verification involved scrutinizing bank cheques to determine if they were invalid or fraudulent. A highly experienced antifraud officer usually performed this task with intense scrutiny.

For example, when a cheque was paid into the bank, the cheque was processed over the bank counter and passed on to the cheque verification department,

where the cheque image was captured and it was reviewed for fraud. If the verification process was successful a request to pay was sent to the bank. In the case that the cheque was suspected as fraudulent, it would be sent back to the bank. The verification process was a multi-stage process. The first stage involved a cross-reference check with databases of known defaulters. The next stage involved cross-referencing the routing number, after which a forgery detection was carried out by a more experienced team to detect forgery by using intelligent risk-detection systems that monitored cheques. Clearly, specialized expertise was needed by bank employees in order to perform these steps to ensure that fraudulent cheques were detected. The following quotations illustrate this point.

#### **Statements for task expertise**

21. [KAPPA] They actually took responsibility for fraud but to a certain amount so obviously it was a huge liability in the contract and those particular areas I would say it was quite a niche specialist skill set

22. [KAPPA] Absolutely, we had a dedicated programme manager or project manager and we had a supplier work team, a technical work team, and then a kind of operational work team. Within the operations work team we had business analysts doing all the process mappings

23. [KAPPA] Typically we would have the people who would be receiving that service in that area and the operations manager would be in charge of that and, in the technical work team, you would have all your IT guys and there were kinds of other people involved as well so you had your data encryption, compliance teams, so you basically have a high-skilled, multi-functional project team

While the task expertise was unique and specific, the interdependency of the cheque verification unit with other departments within the bank was relatively low. Cheque verification was performed as a stand-alone task that did not require interactions with other units within the bank. The following quotations illustrate this point.

#### **Statements for task interdependency**

24. [KAPPA] No, I would say in general “no”, but of course there was some interaction, but that was mainly about how things were configured, but the actual operation, there was extremely limited interaction

25. [KAPPA] In this particular function you can achieve whatever you want without interaction, whereas other functions you can look at them as more kind

of coupled; you have to work really closely with other departments to make sure that you're doing the right thing

26. They had access to our systems, to take information out but they didn't have to liaise with our internal teams

## The nature of the knowledge repository heading should be one level lower than the above (Third Scenario)

Additional information emerging from the interviews suggested that bank experts used both implicit and explicit knowledge repositories when performing cheque verification. The use of explicit knowledge repositories was evident when experts followed guidelines to ascertain the authenticity of a cheque by cross-referencing its number with information in financial databases. At the same time, the detection of forgery required experts to apply experience gained over the years, using their memory as an implicit knowledge repository (Oshri *et al.*, 2008). For example, an individual might write out a cheque for £1200 but the first digit "1" is written with disappearing ink and the remaining digits "200" in normal ink. When the cheque is deposited in Bank A's account £1200 is paid out but, by the time it reaches Bank B for clearance, the cheque will read £200 and only £200 will be withdrawn from the account. It takes an expert in fraud detection to detect the use of disappearing ink in this cheque, but some of the verifications this expert would conduct would rely on written procedures and access to databases. We provide additional evidence for the use of both explicit and implicit knowledge repositories in cheque verification.

### Statements for the nature of knowledge repository

27. [KAPPA] There are guidelines, to identify different colours and different handwritings, etc. But as far as fraud detection goes it is something that people need to build up over time

28. [KAPPA] Everything is mapped out with the help of guidelines, but there are a lot of processes so it is impossible to keep track of it, so it boils down to experience over time

29. [KAPPA] Absolutely, it is down to knowledge that you've built over a period of time

## Degree of process predictability Heading should be

## one level lower than main (Third Scenario)

Process predictability emerged as an important variable in this back-sourcing event. We observed that cheque verification was described as a predictable process at the initial stages of cross-referencing checks with databases and routing numbers. However, when cheques moved to the stage of forgery detection, the cheque verification process became unpredictable. For example, a legitimate cheque that had been stolen and consequently altered by a fraudster was likely to follow a routine check in the beginning; however, follow-up checks for forgery were likely to be carried out subject to suspicions raised by the expert in a non-routine manner. The following evidence from this back-sourcing event illustrates our point.

### Statements for degree of predictability

30. [KAPPA] So in terms of the process, it is quite complex because regardless of the guidelines, new attempts at fraud happen everyday

31. [KAPPA] There are too many expectations so it is always quite painful for the employee managing such a complex process

32. [KAPPA] Particularly when you sit down with a team and you're trying to figure out how does this work, how does that work? And you realize you've missed something, you have to sit back and observe for a while how complex these processes really are because there are too many exceptions

In summary, we conclude that in this scenario the knowledge re-integration challenge revolves around the specific expertise that the client firm needs to re-develop. Such specific expertise is based on experience and requires ongoing accumulation of experiences, thus signalling that the transferred knowledge from the supplier to the client is unlikely to be re-integrated unless it makes sense to those who perform cheque verification. Indeed, sense-making of information occurs when there is no obvious way to perform a task (Weick *et al.*, 2005), as in some parts of the case of the cheque verification process. Sense-making will involve reconstructing expertise via learning by doing and the development of shared identity within the expert group (Orlikowski, 2002). We therefore propose that:

**Proposition 3:** Sense-making practices will support knowledge re-



integration during backourcing when task expertise is specific and task interdependence is low.

## Fourth scenario

The fourth scenario focuses on the fifth, sixth and seventh backourcing events. These three events involved the backourcing of a data centre management function. The services comprise server management, database management and data monitoring services. We learned from interviews that in these three events relating to data centre management, task expertise was characterized as specific. For example, one interviewee explained that adding new servers to the site required an understanding and compliance with certain industry standards for power distribution, disaster recovery, business continuity planning and facilities management, all complex matters that required deep understanding of technology, government policy and business processes. We also learned that employees involved in data centre management were well trained and usually had extensive experience performing such tasks. The following quotations provide additional support for this claim.

### Statements for task expertise

33. [SIGMA] Now this is a highly specialist area particularly in terms of operations processing

34. [SIGMA] What we did, however, was to recruit a range of people that were experienced: some project managers, some did analytics and things like that

35. [SIGMA] It was a small core team but overall the majority of the work was done by the team that was going to run the service, so that is why we recruited skilled personnel actually starting with the migration process.

In terms of task interdependence, evidence from the interviews suggest that data centre management presented intense interactions between the data centre manager, the design engineering team, the assets management team, the procurement and risk management team, as part of the routine daily operation. The following quotations provide additional insights into such high interdependencies.

### Statements for task interdependency

36. [SIGMA] In terms of the replication of the processes it is far more challenging for the client because there is an embeddedness of several systems that have to come together to make it work

37. [SIGMA] There was extreme collaboration among various units and we did it so because the whole intent was to see what we could do without involving the supplier

38. [SIGMA] The teams were very much involved together; we worked closely with many of the business units and there was sort of a delay in the beginning because it was difficult to get their time, so we had to stress how important it was. So we gave a statement to everybody who was causing delays to let them know that the delay was costing us so and so amount of euros a year.

## The nature of the knowledge repository Heading should be one level lower than main (Fourth Scenario)

In these backourcing events we noticed that there was a high usage of implicit and explicit knowledge repositories. For example, we learned that at Gamma (event seven), during a capacity planning scenario where the objective was to increase capacity in order to meet the needs of a growing business unit, the data centre management team worked closely with the business unit to increase their storage capacity and processing speed by at least 50% within 4 weeks but was only allowed a 5% additional energy consumption and a data centre that had only 8% space availability. This task involved identifying underperforming servers and replacing old equipment with new ones, while taking into account space requirements and energy efficiency, such that employees had to make sense of each situation and share knowledge effectively through collaboration. In managing this task, the design engineers produced various picture drawings and computer simulations showing various feasible ways to meet the objectives. The technicians used the engineering designs and implemented the solutions. It takes a lot of experience built over time to design engineering picture diagrams and simulations and also to adhere to the instructions in the picture drawing and simulations. The following statement illustrates the point that implicit and explicit knowledge was required from employees.

### Statements for the nature of knowledge repository

39. [SIGMA] Yes, also we created an environment and made sure that information, etc., were managed in a correct and good way, so first of all we utilized the knowledge of experienced people that came in but, secondly, we established a process to make sure that we captured the

knowledge requirements, etc.

## Degree of process predictability Heading should be one level lower than Fourth Scenario

Evidence emerged from these backourcing events with regard to process predictability, suggesting that the tasks were relatively unpredictable. This is because each process aimed to achieve unique goals and there was more than one way to achieve each objective. For example, there was more than one way to manage the data centre capacity mainly because a process that worked effectively for particular capacity management requirement might not be appropriate for a similar capacity requirement. The following statements provide support for the degree of predictability.

### Statements for degree of process predictability

40. [GAMMA] I think you will find that backourcing is never a lift and drop process; now even after 5 years we are still developing our own process to make it a lot simpler and a lot easier

41. [SIGMA] When it comes to servers, server management and to some extent databases etc., it is never a very straight forward process

42. [BETA] The suppliers are much more proficient at taking things on-board and asking the right questions and you would expect it to be a smoother process than it actually is.

In conclusion, the fourth scenario presents a unique challenge in which there is a high degree of task interdependency and specialized task expertise in the data centre management backourcing events. As such, the re-integration of knowledge from the supplier to the client is likely to face challenges involving both the need to make sense of the information acquired as well as inter-relate tasks concerning data centre management with other functions that are either dependent or affecting data centre performance. Weick *et al.* (2005) describe such behaviour as distributed sense-making, while Majchrzak *et al.* (2005) refer to this practice as collaborative elaboration. Collaborative elaboration signifies the coordinated process of reconstructing knowledge across multiple units (Weick *et al.*, 2005). Therefore we propose that:

**Proposition 4:** Collaborative elaboration will facilitate knowledge re-integration in backourcing when there is specialized expertise and task interdependence is high.

This section presented a number of statements made by interviewees to support our argument of task expertise and interdependencies as well as highlighting the properties that exist as a result of these dimensions with regard to implicit knowledge and process predictability. In Table 3, we present an accumulation of statements made by interviewees in the context of task interdependency, task expertise, process predictability and implicit knowledge.

**Table 3**

Concept frequencies based on number of statements

Concept	Dimension	Codes	Concept frequencies	
			Event one (Kappa)	Event two (Omega)
Task expertise	Specific expertise	Domain experts	-	2
		Specialists/specialized	1	4
	Generic expertise	Non –specialists	5	14
Task interdependency	High task interdependency	Coupled	1	1
		Collaboration	1	3
		Inter-related tasks	-	1
	Low task interdependency	Low-interaction	31	12
		Silos/independent task	14	3
Knowledge repository	Implicit knowledge repository	Experience	2	2
		Know-how	4	4
	Explicit knowledge repository	Use of scripts	7	22
		Use of plans	1	14
	Unpredictable	Complex tasks	-	-

Process predictability	processes	Too many factors affecting the process	-	1
	Predictable processes	Straight-forward tasks	15	17

## Discussion and implications

The purpose of this paper is to examine knowledge re-integration in backourcing settings. Our departure point was that the process of re-integrating knowledge from the supplier to the client firm is likely to create additional challenges to those reported in the literature about the transfer of knowledge from the client to the supplier. Knowledge asymmetries in favour of the supplier are likely to put the client firm in a disadvantageous position, thus requiring the client firm to deploy knowledge processes to overcome these shortcomings. Indeed, the seven backourcing events reviewed in this paper reveal that the re-integration of knowledge in backourcing requires the client firm to deploy coordinative efforts subject to the degree of task interdependency and the nature of task expertise. The four backourcing scenarios identified in this paper are our first contribution, in which we propose to move away from the single-dimensional understanding of backourcing as a process and consider four possible scenarios, subject to task expertise and task interdependency, which also affect the nature of the coordinative activity to be deployed. Figure 1 depicts the spectrum of backourcing scenarios and the implications for knowledge re-integration.

### Figure 1

Four backourcing scenarios and implications for knowledge re-integration

---

<b>Task Interdependency</b>	<b>High</b>	<b>SCENARIO 2</b> <b>EXPERTISE COORDINATION</b> <ul style="list-style-type: none"> <li>• Use of explicit knowledge repositories</li> <li>• Unpredictable processes</li> <li>• Not easily codified processes</li> </ul> Example: Deceased Management	<b>SCENARIO 4</b> <b>COLLABORATIVE ELABORATION</b> <ul style="list-style-type: none"> <li>• Implicit and explicit knowledge repositories</li> <li>• Predictable/Unpredictable processes</li> </ul> Example: Data Centre Management
	<b>Low</b>	<b>SCENARIO 1</b> <b>ADMINISTRATIVE COORDINATION</b> <ul style="list-style-type: none"> <li>• Use of explicit knowledge repositories</li> <li>• Predictable processes</li> <li>• Codifiable Processes</li> </ul> Example: ISA Transaction Processing	<b>SCENARIO 3</b> <b>SENSE-MAKING</b> <ul style="list-style-type: none"> <li>• Implicit and explicit knowledge repositories</li> <li>• Unpredictable processes</li> </ul> Example: Cheque Fraud Checking
		<b>Generic</b>	<b>Specific</b>
		<b>Task Expertise</b>	

As described above, each scenario portrays a unique combination of task expertise and task interdependency. For example, Scenario 1 examines the case of a low degree of task interdependency and generic expertise, illustrated by the ISA saving application. Indeed, there are many examples in the outsourcing context, such as call centres, that are likely to correspond with Scenario 1, thus suggesting that the knowledge re-integration process during back-sourcing is likely to follow an administrative coordination path. Explicit knowledge repositories and predictable processes attributed to Scenario 1 are likely to further support the administrative coordinative approach expected during back-sourcing. Scenario 2 is featured as having a high degree of task interdependency while maintaining generic expertise. In this case, as illustrated by the deceased management back-sourcing event, expertise coordination is needed in order to overcome the high degree of interdependency, as well as unpredictable processes involved in such services. Scenario 3 is characterized with specific expertise and a low degree of task interdependency, thus requiring experts from the client firm to engage in expertise transformation as a way of re-integrating knowledge. Indeed, in this scenario, knowledge re-integration does not transpire as a knowledge transfer activity but rather a reconstruction activity of knowledge that assists in developing common understanding between

the supplier and the client firm. Last but not least, Scenario 4 is characterized as featuring specific expertise and a high degree of task interdependency, thus suggesting a process of collaborative elaboration that generates waves of sense-making across multiple units.

The second contribution of our study derives from the examination of knowledge processes in back sourcing. Our study suggests that knowledge re-integration processes transpire as coordinative efforts as the client firm attempts to overcome knowledge asymmetries with its supplier. Indeed, the study of knowledge transfer from the client to the supplier in the IS literature has generated various strands. Some studies have denoted a simplistic articulation of the knowledge during the transfer from the client to the supplier through class training (Chua and Pan, 2008), while others have highlighted the transformative nature of knowledge transfer (Vlaar *et al.*, 2008; Kotlarsky *et al.*, 2014). Indeed, our study shows that, in back sourcing, knowledge is transferred from the supplier to the client, either as articulated (Chua and Pan, 2008), transformed (Leonardi and Bailey, 2008), inter-related to expertise (Kotlarsky *et al.*, 2008) or through sense-making (Vlaar *et al.*, 2008). However, our analysis of the back sourcing events shows that the nature of expertise and the degree of task interdependency directly affect the means through which knowledge is transferred from the supplier to the client. Indeed, the examined back sourcing events show that, when the task expertise is generic, there is an articulation and the use of explicit means of knowledge transfer from the supplier to the client firm (Chua and Pan, 2008). However, as the expertise needed by the client firm during back sourcing is specific, the transfer of knowledge from the supplier to the client firm requires the deployment of transformative means, such as collaborative elaboration and sense-making. Further, higher degrees of task interdependency elevate the need for transformative means of knowledge transfer, as the client firm is further challenged with the lack of knowledge of re-performing the task as well as re-integrating it within its service value chain. As such, when the back sourced function is characterized as having a high degree of task interdependency, the inter-relation of expertise and the transformation of knowledge becomes imperative as new specialists are likely to lack shared syntax with specialists from other interdepending domains within the firm, as evident in Scenario 2, 3 and 4. As observed in the back sourcing event of deceased management, the

bank realized that, in order to overcome the deficiency in in-house capabilities, the transfer of the supplier's delivery team for cross-training purposes was needed.

Our study also offers implications for practice. For example, the challenge of rebuilding capabilities raises another consideration for management. At the heart of this challenge is the question of whether client firms should first re-develop needed capabilities and only then backsource or should they rebuild capabilities during the backsourcing project. The backsourcing events in this article illustrate both approaches. Indeed, in the case of the pharmaceutical firm (Sigma), the former approach was taken in which the client firm set up a pilot project to rebuild capabilities and gradually backsource functions from its supplier. In other backsourcing events, such as the various backsourcing of financial services, the client firms developed capabilities during the backsourcing. The first approach is beneficial when the risk of failing to backsource successfully is high because of significant knowledge asymmetries, thus justifying the development of a pilot backsourcing project. However, when the knowledge asymmetry is considered to be moderate or low, client firms are likely to cope with knowledge asymmetry risks during the backsourcing project.

Last but not least, we observed during this study that backsourcing is conducted as an ad hoc activity within the client firm. As a result, client firms fail to develop backsourcing professionals who can lead backsourcing projects based on accumulated knowledge. As such, learning about how to perform successful backsourcing gained in one project is not transferred to another. Considering the relatively high spread of the backsourcing phenomenon, client firms should consider developing backsourcing capabilities in-house or regularly rely on backsourcing advisory services to ensure success.

## Limitations and future study

This study has at least three limitations that also point out future research directions. First, the theoretical propositions developed in the paper have been illustrated using a sub-set of our seven backsourcing events with the intention of examining the effect of task expertise and task interdependency. Future research should examine knowledge processes in backsourcing on a wider scale, via various methods including a survey, utilizing a much broader set of constructs



that may affect the subsequent success of back sourcing. Secondly, our selection of the back sourcing events was guided by the framing of the study, i.e. their relevance for the degree of task interdependency and the nature of task expertise. As such, the case study has mainly focused on the effect of these two factors with some attention to two additional factors emerging from the data. As the research of the back sourcing phenomenon is its infancy, additional case studies are needed to holistically understand the process of back sourcing as well as other aspects such as change management, employee moral and job redesign. Finally, our study has hinted at the challenge of rebuilding capabilities, a research area that has so far gained little research. Future studies should unpack the notion of rebuilding capabilities by examining similar cases, including back sourcing, in which existing capabilities have gradually diminished but were rebuilt later on.

## Appendix A

### Interview protocol

The questions below were treated as a general guide and often were followed up by more specific questions in order to unveil aspects relating to the back sourced function, the skills needed, the interdependencies as well as the back sourcing approach taken.

1. Describe your firm, your role and the outsourcing engagements the firm and you have pursued in recent years.
2. What was your role in the back sourcing project?
3. Describe in detail the function which was later back sourced. (When was it outsourced and why, how long was it outsourced, why was it back sourced, how is it related to the service value chain within the firm etc.?)
4. Describe major knowledge-related challenges faced before and during the back sourcing.
5. Describe the approach taken by you and the back sourcing project team to overcome these knowledge challenges.
6. Is there anything else you wish to highlight that we have not covered in

this interview?

Thank you.

## References

- Andres, H.P. and Zmud, R.W. (2002). A Contingency Approach to Software Project Coordination, *Journal of Management Information Systems* **18**(3): 41–70.
- Argote, L. and Ingram, P. (2000). Knowledge Transfer: A basis for competitive advantage in firms, *Organizational Behavior and Human Decision Processes* **82**(1): 150–169.
- Aron, R. and Singh, J.V. (2005). Getting Offshoring Right, *Harvard Business Review* **83**(12): 135–143.
- Bhagwatwar, A., Hackney, R. and Desouza, K.C. (2011). Considerations for Information Systems “Backsourcing”: A framework for knowledge re-integration, *Information Systems Management* **28**: 165–173.
- Butler, N., Slack, F. and Walton, J. (2011). IS/IT Backsourcing – A case of outsourcing in reverse? *IEEE 2011 44th Hawaii International Conference in System Sciences (HICSS)*, pp. 1–10
- Carlile, P.R. (2004). Transferring, Translating and Transforming: An integrative framework for managing knowledge across boundaries, *Organization Science* **15**(5): 555–568.
- Carlile, R.P. and Rebentisch, E.S. (2003). Into the Black Box: The knowledge transformation cycle, *Management Science* **49**(9): 1180–1195.
- Chang, S.I., Yen, D.C., Ng, C.S.P. and Chang, W.T. (2012). An Analysis of IT/IS Outsourcing Provider Selection for Small-and Medium-Sized Enterprises in Taiwan, *Information and Management* **49**(5): 199–209.

- Chua, A.L. and Pan, S.L. (2008). Knowledge Transfer and Organizational Learning in IS Offshore Sourcing, *Omega* **36**(2): 267–281.
- Cohen, W.M., and Levinthal, D.A. (1990). Absorptive Capacity: A new perspective on learning and innovation, *Administrative Science Quarterly* 128–152.
- Cullen, S. and Willcocks, L. (2003). *Intelligent IT Outsourcing: Eight building blocks to success*, Oxford: Butterworth.
- Eisenhardt, K.M. (1989). Building Theories from Case Study Research, *Academy of Management Review* **14**(4): 532–550.
- Faraj, S. and Sproull, L. (2000). Coordinating Expertise in Software Development Teams, *Management Science* **46**(12): 1554–1568.
- Fishman, C. (2012). The Insourcing Boom, available at: [Online] <http://www.theatlantic.com/magazine/archive/2012/12/the-insourcing-boom/309166/3> (accessed 17 April 2014).
- Fleischer, M. and Roitman, D. (1990). Implementation, in *The Process of Technological Innovation*, L.G. Tornatzky and M. Fleischer (eds.), Lexington: Lexington Books, pp. 197–232
- Galbraith, J.R. (1973). *Designing Complex Organizations*, Boston: Addison-Wesley Longman Publishing Co., Inc.
- Grant, M.R. (1996a). Prospering in Dynamically-Competitive Environments: Organizational capability as knowledge integration, *Organization Science* **7**(4): 375–387.
- Grant, R.M. (1996b). Toward a Knowledge-Based Theory of the Firm, *Strategic Management Journal* **17**: 109–122.
- Kotlarsky, J., van Fenema, P. and Willcocks, L. (2008). Developing a Knowledge Based Perspective on Coordination, *Information and Management* **45**: 96–108.

Kotlarsky, J., Oshri, I. and Scarbrough, H. (2014). Coordinating Expertise Across Knowledge Boundaries in Offshore Outsourcing Projects: The role of codification, *MIS Quarterly*.

Kumar, N., Stern, L.W. and Anderson, J.C. (1993). Conducting Interorganizational Research Using Key Informants, *Academy of Management Journal* **36**(6): 1633–1651.

Lacity, M.C. and Willcocks, L. (2000). *Global Information Technology Outsourcing: In search of business advantage*, New York: Wiley

Lacity, M. C., Khan, S., Yan, A. and Willcocks, L.P. (2010). A Review of the IT Outsourcing Empirical Literature and Future Research Directions, *Journal of Information Technology* **25**(4): 395–433.

Lane, P.J., Koka, B.R. and Pathak, S. (2006). The Reification of Absorptive Capacity: A critical review and rejuvenation of the construct, *Academy of Management Review* **31**(4): 833–863.

Lee, A.S. (1989). A Scientific Methodology for MIS Case Studies. *MIS Quarterly* 33–50.

Leonardi, P.M. and Bailey, D.E. (2008). Transformational Technologies and the Creation of New Work Practices: Making implicit knowledge explicit in task-based offshoring, *MIS Quarterly* 411–436.

Levina, N. and Ross, J.W. (2003). From the Vendor's Perspective: Exploring the value proposition in information technology outsourcing, *MIS Quarterly* 331–364.

Majchrzak, A., Beath, C.M., Lim, R. and Chin, W. (2005). Managing Client Dialogues During Information Systems Designed to Facilitate Client Learning, *MIS Quarterly* **29**(4): 653–672.

Martens, B. and Teuteberg, F. (2010). Cloud Computing, *ERP Management* **6**(1): 24–27.

- McLaughlin, D. and Peppard, J. (2006). IT Backsourcing: From ‘make or buy’ to ‘bringing it back in-house’, *ECIS* 1735–1746
- Metters, R. (2008). A Case Study of National Culture and Offshoring Services, *International Journal of Operations & Production Management* **28**(8): 727–747.
- Miles, M.B. and Huberman, A.M. (1994). *Qualitative Data Analysis: An expanded sourcebook*, London: Sage.
- Mintzberg, H. (1979). *The Structuring of Organization: A synthesis of the research*. Englewood Cliffs, NJ: Prentice-Hall
- Orlikowski, W.J. (2002). Knowing in Practice: Enacting a collective capability in distributed organizing, *Organizational Science* **13**(3): 249–273.
- Oshri, I., van Fenema, P. and Kotlarsky, J. (2008). Knowledge Transfer in Globally Distributed Teams: The role of transactive memory, *Information Systems Journal* **18**: 593–616.
- Rottman, J.W. and Lacity, M.C. (2006). Proven Practices for Effectively Offshoring IT Work, *MIT Sloan Management Review* **47**(3): 56.
- Strauss, A. and Corbin, J. (1998). *Basics of Qualitative Research: Techniques and procedures for developing grounded theory*, Thousand Oaks, CA: Sage Publications, Inc.
- Tiwana, A., Bharadwaj, A. and Samamurthy, V. (2003). The Antecedent of Information Systems Development Capability in Firms: A knowledge integration perspective. S.I., *International Conference of Information Systems*.
- Van Der Vegt, G., Emans, B. and Van De Vliert, E. (2000). Team Members’ Affective Responses to Patterns of Intragroup Interdependence and Job Complexity, *Journal of Management* **26**(4): 633–655.
- Veltri, N.F. and Saunders, C. (2006). Antecedents of Information Systems

Backsourcing, *Information Systems Outsourcing* 83–102.

Veltri, N. F., Saunders, C.S. and Kavan, C.B. (2008). Information Systems Backsourcing: Correcting problems and responding to opportunities, *California Management Review* **51**(1): 50–76.

Vlaar, P.W., van Fenema, P.C. and Tiwari, V. (2008). Cocreating Understanding and Value in Distributed Work: How members of onsite and offshore vendor teams give, make, demand, and break sense, *MIS Quarterly* **32**(2): 227–255.

Weick, K.E., Sutcliffe, K.M. and Obstfeld, D. (2005). Organizing and the Process of Sensemaking, *Organization Science* **16**(4): 409–421.

Whitten, D. and Leidner, D. (2006). Bringing IT Back: An analysis of the decision to backsource or switch vendors, *Decision Sciences* **37**(4): 605–621.

Wong, S.F. (2008). Drivers of IT Backsourcing Decision, *Communication of the IBIMA* **2**(14): 102–107.

Yin, R.K. (2009). *Case Study Research: Design and method*, 5th ed, London: Sage.