

WENDY VAN DER VALK

Buyer-Seller Interaction Patterns During Ongoing Service Exchange



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Patronen van klant-leveranciers interactie tijdens de voortdurende
dienstuitwisseling

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Voor Rob,
pap en mam

Preface

Capoeira is a Brazilian martial art created by enslaved Africans during the 16th Century. It originated by Nigerian or Angolan ethnic groups where members fought on music and the winner won a partner, usually female. Participants form a *roda* (circle) and take turns playing instruments, singing, and sparring in pairs in the centre of the circle. The game is marked by fluid acrobatic play, feints, subterfuge, and extensive use of groundwork, as well as sweeps, kicks, and head butts. Technique and strategy are the key elements to playing a good game.

Wilkinson and Young [1994] proposed the dance metaphor to envisage a range of types of interaction in business relationships. Similarly, activities like the ones performed during a game of capoeira can be viewed as the activities that make up the daily practices in buyer-seller relationships, for example when buyers aggregate volume to obtain more buying power, or when suppliers offer a solution developed with one customer also to another customer. Wilkinson and Young [1994] furthermore suggested for example ballroom dancing for a relationship in which each is at least as concerned about one's solo parts as about the duo parts. Because of the various types and degrees of coordinated action required, capoeira emphasises the continuous dynamics present in buyer-seller relationships even more strongly. This includes competition (represented by the martial arts nature of the game), cooperation (performing a 'show'), and the intensive ongoing interactions that take place within and around exchange episodes.

This research addresses these ongoing interactions between buyers and sellers of business services. Ongoing interactions refer to the continuous dealings that take place between buyers and sellers after the contract has been signed: indeed, business services are produced and consumed in interactive processes between buyer and service provider. These ongoing interactions have remained largely unaddressed in purchasing and supply management research, yet are critical for attaining successful (ongoing) service exchange.

The objective of this research is to provide insights into what effective interaction between buyers and sellers of different types of services looks like. These insights can be used to design/ develop effective buyer-provider interfaces and interactive processes, or in other words: to play a good game of capoeira.

Acknowledgements

Travelling is something that has always been part of me. Growing up on the "kermis", home was everywhere and nowhere. Born in Amsterdam as a supporter of Ajax, I live in the city of PSV and have for the past four years worked in the city of Feyenoord. I have been on many business trips, visiting various places in Europe, the US and even Australia. And all too often over the past four years did my advisor remark: "You're going on holiday again?!" Peru, Bolivia, Brazil, Egypt, California, Singapore, Namibia, Botswana, to name a few. Most certainly however, I reckon the journey of my dissertation to be one of the best.

Starting out as an Industrial Engineer from the Technische Universiteit Eindhoven, with a specific interest in manufacturing processes and high-tech industries, the research project in Rotterdam implied a shift to (business) services. Although for me, the choice to do a PhD on services was not obvious, I have never regretted it. The services arena has turned out to be a highly interesting research area, with its own complexities and challenges. In this project, I have had the opportunity to collaborate with a large number of well-known professional Dutch companies, and from this page, I would like to express my appreciation to all company representatives who have in whatever way contributed to this dissertation. The fact that so many companies participated in my research is also partly the result of the strong network among purchasing practitioners in the Netherlands, fostered by our professional association NEVI.

NEVI has furthermore provided both financial and intrinsic support for this research, the latter in the person of Prof. Constant Botter, my NEVI advisor. Thank you, Constant, for your feedback and support.

Furthermore, I have had the opportunity to share my research ideas and insights with both practitioners and fellow academics at various conferences and seminars. I would like to thank my audiences for their constructive and helpful comments and suggestions.

There is no way to express my gratitude to Finn. You kept the door open for me in Rotterdam, and have supported me in a way that a PhD could only hope for. I once attended a seminar by Prof. Jeff Gasperz on developing and implementing new ways of doing one's job, and one of his suggestions for more creativity and inspiration was: "Don't ask for permission, but in hindsight ask for forgiveness". I think this particularly applies to our collaboration: whereas I hardly ever asked for permission, you have always forgiven me (you even allowed me to sleep all the way through a flight to Arizona, while you prepared our presentation). There have been some deep

plunges, but also many enjoyable peaks, and I hope that this PhD particularly reflects the latter.

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Then, last but not least, I would like to thank my Mum and Dad, who have never lost interest in or track of what was going on in my own little academic world. And thank you Rob, for having put up with everything and still sticking with me.

Wendy van der Valk
Eindhoven, October 2007

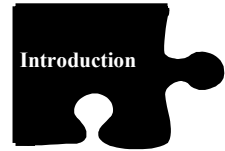
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ABSTRACT

Purchasing business services has become a substantial part of organisations' total acquisition of external resources. At the same time, research in purchasing and supply management has traditionally focused on goods. The research that is available is highly fragmented, covering a wide variety of geographic contexts, services, methods, theories and parts of the sourcing process.

More specifically, the purchasing and supply management discipline seems to have largely neglected a characterising aspect of (business) services, which is that they are produced and consumed in interaction between the service buyer and the service provider. Although the presence of continuous interaction has consistently been emphasised by services marketing scholars, research into buying business services has mainly focused on the transactional purchasing process.

This chapter presents the points of departure for this dissertation. First, an argumentation is provided for conducting research into the ongoing interactions between buyers and sellers of business services by reviewing extant literature and identifying gaps. Research questions are formulated and related to relevant theory.

1.1 INTRODUCTION

Services are increasingly taking up a larger part of organisation's purchasing expenditures [Axelsson and Wynstra, 2002; Murray and Kotabe, 1999; Van Weele, 2005]. At the same time, most of the literature in the field of purchasing and supply management has traditionally focused on goods.

However, already in 1966, Wittreich [1966] stated that 'Unfortunately, the tried and true rules for buying goods do not work when applied to the buying of professional services'. Thomas [1978] pointed out that applying theories and techniques developed in the manufacturing arena directly to services is inadequate. Indeed, various authors have pointed out that organisational buyers view the purchase of services to be different or even more difficult than the purchase of goods [Fitzsimmons et al., 1998; Smeltzer and Ogden, 2002; Stock and Zinszer, 1987]. Van der Valk et al. [2005] found that purchasers feel that developing specifications for services is more difficult than for goods and that it is more difficult to evaluate the performance of providers of services than of suppliers of goods.

Furthermore, the studies that are available have focused on solely one type of service [Lichtenthal and Shani, 2000; Mitchell, 1994; West, 1997] or on the transactional stages of the purchase process [i.e. supplier selection, Day and Barksdale, 1994]. This focus on transactions is counterintuitive, since services marketing scholars have consistently stressed that services are produced in interactive processes between buyers and sellers [Grönroos, 2000; Lovelock, 2001; Zeithaml and Bitner, 1996]. This accentuates the presence of and need for ongoing buyer-seller interaction, both during the purchase process and the period of ongoing service exchange (i.e. life after the purchase). Setting up a suitable buyer-supplier interface and developing proper supplier management activities are critical for many buying companies, since in the case of services, it “takes two to tango”.

Relevant questions then are: What buyer-supplier interface and what supplier management activities are appropriate when buying business services? How to deal with the large variety in business services? Can we identify different situations in which different interfaces and management activities are appropriate?

This dissertation tries to uncover what are suitable buyer-supplier interactions in the area of buying business services, as well as on what contingencies this depends. The following sections of this introductory chapter provide a review of extant literature in the area of business services. Gaps are identified that lead to the main research question of this dissertation. The managerial relevance is discussed thereafter. Finally, a preview of the contents of this dissertation is provided, starting from the knowledge on this topic as it existed at the start of the study to the current status of knowledge as it was incrementally developed throughout this research. First however, the object of study needs to be defined.

1.2 SERVICES DEFINED

Various authors have attempted to define services. An old, but useful definition comes from Rathmell [1966], who states that a service is “a deed, a performance, an effort”. This definition suggests that services are not things, yet they rely on things for their performance.

Hill [1977, p. 318] brings forward a somewhat more sophisticated definition by explaining a service as “a change in the condition of a unit or a person, or of a good belonging to some economic unit, which is brought about as a result of the activity of some other economic unit, with the prior agreement of the former economic unit”. Gadrey [2000, p. 375/376] specified and extended Hill’s [1977] definition as follows: “A service activity is an operation intended to bring about a change of state in a reality C that is owned or used by consumer B, the change being effected by service provider A at the request of B, and in many cases in collaboration with him or her, but without

leading to the production of a good that can circulate in the economy independently of medium C". A similar definition was brought forward by Grönroos [2000, p. 46], who stated that: "A service is a process consisting of a series of more or less intangible activities [operations] that normally, but not necessarily always¹, take place in interactions between the customer [B] and employees and/or physical resources or goods and/or systems of the service provider [A], which are provided as solutions to customer problems [change of state in reality C]" (text in brackets added by the author; note that this definition is not complete when compared with the definition by Gadrey [2000]).

Despite these definitions of services, the services marketing discipline has a long-standing tradition of distinguishing (business) services from (industrial) goods based on four basic characteristics. Services are intangible, heterogeneous, simultaneous and perishable [Grönroos, 2000; Lovelock, 2001; Zeithaml and Bitner, 1996], and these four basic characteristics have certain implications for how services should be marketed and managed in comparison with goods. For example: intangibility refers to the fact that services cannot be seen, touched, held, or put on a shelf. The intangibility of services makes it difficult for organisational buyers to examine them in advance of, or even after the purchase, as a result of which buyers may experience a higher level of perceived risk when buying a service than when buying a good. Services marketers respond to this by employing various tactics aimed at reducing the buyer's level of perceived risk. Heterogeneity indicates that services relate to the performance of individuals on the side of both the service provider and the customer [Fisk et al., 2000; Mitchell, 1994], and on the interaction between these individuals. Ellram et al. [2004] state that because services depend to a large extent on the knowledge, expertise and capabilities of human beings (which can fluctuate over time), it is difficult to produce services with consistent characteristics and quality. As Grönroos [2000] pointed out in his definition, services are mostly consumed and produced simultaneously in an interaction between buyers (or, in many cases: users) and sellers. Finally, perishability has to do with the fact that services cannot be stored; they exist only during the time of production.

Researchers in the field of purchasing and supply management have build upon these distinguishing characteristics. Axelsson and Wynstra [2002] argue that characteristics influence the purchasing process in the sense that certain issues become more important, more difficult, or just different in comparison with purchasing goods. For example: in the case of services it is more difficult to (quantitatively and qualitatively) determine and evaluate the needs in

¹ Araujo and Spring [2006, p. 798] indeed point out that there are many services that require only minimal interaction between buyer and seller (electricity, Internet).

advance of the purchase [Håkansson and Wootz, 1975; Jackson et al., 1995]. Moreover, for the supplier to be able to identify the most suitable service solution, a thorough understanding of the customer's business processes is required, which increases the need for information sharing between customer and supplier [Axelsson and Wynstra, 2002]. Issues like supplier staff competencies and "customer skills" result in additional purchasing criteria. Also, due to the lack of tangible assets, services are more difficult to quantify in terms of costs. This makes the pricing of services quite complex. In addition to that, it is hard for the buyer to assess the value gained from purchasing the service in relation to the cost of acquiring the service. Consequently, for the purchase process of good and services, differences may occur with respect to the amount of time spent on each stage of the purchase process, the level of detail with which each stage is carried out, the number and type of disciplines involved, and the information being exchanged between buyers and suppliers.

More recently however, Lovelock and Gummesson [2004] and Vargo and Lusch [2004a; 2004b] have discarded the four service marketing myths -as they call them- by arguing that intangibility, heterogeneity, simultaneity and perishability do not distinguish services from goods. For example, many services can have tangible results (think about medical services in a hospital [Gummesson, 2000]). For products on the other hand, intangibilities like brand image can be equally or even more important than their tangible characteristics. According to Gummesson [1995] and Rust [1998], the concept of intangibility only seems helpful in arranging services and goods on a continuum according to their relative degree of tangibility; it is not clear what kinds of insights this delineation actually provides. Similar lines of reasoning have been developed for the other three characteristics. Furthermore, Vargo and Lusch [2004b] claim that services and goods are not mutually exclusive: many goods are augmented with services (think of mobile telecommunication) and many services are dependent on goods as their carriers or means of provision (think of company cars for employee mobility).

Araujo and Spring [2006] argue that whether something is a product or a service depends on the nature of producer-user interactions and the institutional structure of production rather than on any attribute of products or services. Continuing on this idea, Spring and Araujo [2007] claim that services can be made tradable by objectifying their properties and regulating the conditions of access to maintained socio-technical capacities of the supplier.

To summarise: it is not always easy to determine whether something is a good or a service, nor will it always be useful. The fact remains that companies are increasingly buying services rather than (pure) goods [Murray and Kotabe, 1999]. Sheth [1996, p. 14] and later Carter and Ellram [2003] noted that academic knowledge about services purchasing seems limited in comparison with knowledge about product purchasing: therefore, specific research attention should be directed at buying business services. Nordin et al.

[2006] are more specific: based on a review of 120 empirically-based articles in the area of buying business services, they claim that the empirical research conducted is highly fragmented, covering a wide variety of geographic contexts, services, methods, theories and parts of the sourcing process.

1.3 BUSINESS SERVICES AND THE IMPORTANCE OF CONTINUOUS INTERACTION

The services marketing and management discipline has given a lot of attention to the nature of services and how this affects marketing practices towards *consumers* [Grönroos, 2000; Lovelock, 1983; Parasuraman et al., 1985; Zeithaml, 1981; Zeithaml et al., 1985]. The importance of *business services* (i.e. services being exchanged between organisations) has only recently been acknowledged. Jackson et al. [1995] concluded that the understanding of marketing industrial services lags far behind on the understanding of marketing services to consumers. Matthyssens and Vandenbempt [1998, p. 339] noted that the marketing and management of industrial services has received relatively limited attention from industrial marketing researchers. Brown [2002, p. 11/12] pointed out that “Marketing academics in general, and services marketing scholars in particular, have long been preoccupied with consumer markets.” He provides various examples illustrating that the growth in services is nowadays mainly taking place in business markets, which have hardly been addressed by services marketing researchers.

The studies into service procurement that are available have concentrated on the purchase of a specific type of service like advertising [Lichtenthal and Shani, 2000; West, 1997] or consulting services [Mitchell, 1994; Stock and Zinszer, 1987]. In addition, the large variety in business services makes it difficult to come up with managerially useful generalisations for purchasing business services. This emphasises the need for research that includes multiple kinds of business services. Lovelock [1983] argues that in such studies one should look at the characteristics that draw them together rather than at the characteristics that set them apart. Stenberg and Virolainen [2000] build on this argument and claim that the characteristics that are common for various services help purchasing managers to understand the service to be purchased in relation to the purchase process and to the buying organisation and its relationships with service providers. Similarly, Smeltzer and Ogden [2002] call for research dealing with the variety in business services from a buyer’s perspective: investigating how buying companies deal with this variety enables the accumulation of knowledge *across* the wide variety of services that organisations buy. Also Nordin et al. [2006] point out the need for comparative research across different types of services. Such comparative research should include direct services, i.e. services that are passed on to

customers. This point was already made by Jackson and Cooper [1988], who stated that little attention has been given to services that become part of buyer's offering to its customers.

Finally, an important feature of (business) services, and one that has consistently been emphasised by the services marketing and service management discipline, is that they are produced in interactive processes between buyers and sellers. Related to this, Grönroos [2004] highlighted the importance of the service encounter: these episodes, during which services are being provided and consumed (exchanged), and the customer-provider interactions they comprise should become the main point of interest for services marketing research. In operations management, Roth and Menor [2003] and Johnston [1999; 2005] point to the importance of the design of service encounters and the interactions therein. Yet, researchers in the field of purchasing and supply management do seem to have fully acknowledged this aspect of continuous interaction, as there have been relatively few attempts to investigate these ongoing interaction processes (i.e. "life after the purchase") in great detail. In contrast, research has mainly focused on the initial phases of the transactional purchasing process, such as supplier selection [e.g. Day and Barksdale, 1994; 2003], rather than on the ongoing business relationship.

As such, attention shifts to the processes and practices that make up the daily activities of organisations and that relate to strategic outcomes [Johnson et al., 2003]. In other words, daily activities and ongoing interaction are the 'stage' for strategic behaviour. At the same time, elements of sustainable competitive advantage (i.e. the daily activities) are difficult to attain in service businesses [Matthyssens and Vandenbempt, 1998].

This dissertation therefore addresses the ongoing interactions between buyers and sellers of various kinds of business services, including those services that move downstream to the buying company's customers. 'Ongoing interactions' here refer to the interactive processes that take place between buyer and seller after the purchase decision has been made, and include both the interactions in specific service encounters/ exchange episodes, and the interactions that are part of the ongoing business relationship between buying company and service provider (in between and across individual encounters).

1.4 RESEARCH QUESTIONS

The main research question is the following:

What does effective interaction for various kinds of business services look like?

This research question can be broken down into several sub-questions:

1. *What existing classifications of (business) services exist? Can these classifications be used to and are they useful for differentiating between various kinds of services given our objective? If not, what business service*

characteristic drives effective variation in ongoing buyer-supplier interaction from the buyer's perspective?

2. *What are the key characteristics to describe this variation in interaction?*
3. *What does effective buyer-seller interaction look like for different types of services? Is this interaction consistent across buying companies (i.e. is variation in interaction systematic)? To what extent are the interactions associated with a specific type of service distinct?*
4. *When is interaction effective? (How) is systematic variation related to success (what is success)?*

With regard to the first sub-question, an underlying assumption is that certain characteristics can be identified, on which services may differ, and that these characteristics influence/ determine what interactions are most appropriate for various kinds of services. As such, these characteristics are factually used to classify services into distinct groups, for which different interaction patterns are most effective. Various classifications of business services have been brought forward: long versus short term services, standardised versus non-standardised services, simple versus complex services, et cetera [Axelsson and Wynstra, 2002]. Most of these classifications however have been developed from a provider's perspective. In contrast, buying companies traditionally segment business services based on their technical content, and as such make a distinction between for example facility services, financial services, information and communication technology services, et cetera. Drawing an analogy with goods, this would be the same as distinguishing between electrical goods, mechanical goods, et cetera. Rather than using this distinction when buying goods, purchasers usually employ more advanced methods to differentiate between different types of purchases, like for example Kraljic's [1983] purchasing portfolio.

In order to classify business services from a purchasing perspective, one could draw on classifications regarding consumer services. Yet, in this perspective, consumer goods are differentiated based on how they are purchased, whereas industrial goods are differentiated based on how they are used [Jackson and Cooper, 1988]. These authors therefore propose a classification including goods and services and state that "Because their application of end use is different, there is often a different buyer involved, the individuals in the buying centre who are directly involved in the decisions surrounding their development and purchase are different, and the degrees of specialisation will often vary. Therefore, industrial marketers need to address these differences in their marketing plans" [Jackson and Cooper, 1988, p. 118]. A similar classification of industrial goods has been brought forward by the Industrial Marketing and Purchasing (IMP) Group [Ford, 2002; Håkansson, 1982; Håkansson and Snehota, 1995], who have investigated interaction patterns related to the procurement of industrial goods by classifying these goods according to the buying company's application: as a component that

becomes part of a final product, a piece of equipment or as a consumable.

Building on this idea, Wynstra et al. [2006] claim that the way in which the buying company uses the service is one of the main determinants for designing appropriate (effective) buyer-seller interfaces and interaction processes. They suggest a classification of business services based on the way in which the buying company uses the service with respect to its own business processes: as a component service, a semi-manufactured service, an instrumental service or a consumption service. The classification, its origin and underlying assumptions are extensively dealt with in Chapter 2.

Concerning the second sub-question, Chapter 2 provides some initial ideas of dimensions along which a pattern of interaction can be described. These dimensions mostly relate to the structural character of the buyer-seller interface. After explaining our research design and methods in Chapter 3, the Interaction Approach developed by scholars belonging to the Industrial Marketing and Purchasing (IMP) Group is used to identify other relevant dimensions, i.e. dimensions related to the processes of interaction, in Chapter 4.

Related to the last two sub-questions, various empirical studies are conducted to examine what interaction looks like for different types of services and to evaluate whether these interactions are effective (Chapters 5 to 7). Interaction is considered effective when it results in the buying company being satisfied with the period of ongoing service exchange. By relating observed interactions to success, we can identify what effective interaction looks like for different types of services.

1.5 MANAGERIAL RELEVANCE

Services nowadays constitute the main part of economic activity in developed countries around the world [Fisk et al., 2000]. Data from the Organisation for Economic Co-operation and Development (OECD) and from the United Nations World Investment Report 2004 demonstrate that the service sector accounts for some 70% of aggregate production and employment in OECD economies [United Nations, 2004; Wölfl, 2005]. More specifically, finance, insurance and business services account for about 20 to 30 percent of value added in the total economy².

This growing importance of business services is obviously reflected in the purchase patterns of individual organisations. Already more than a decade ago, a North-American investigation among 158 private and public organisations showed that services accounted for a weighted average of 54 % of total purchase volume [Fearon and Bales, 1995], ranging from 39% in the

² These services include amongst others rental of equipment and machinery; computer related activities and research and development [Wölfl, 2005].

manufacturing sector to 81% in service companies. Kluge [1996] determined that the total purchasing value is about 50 percent of the costs of goods sold, 12 percent of which is typically related to services. A more recent benchmarking study performed among 35 companies by the CAPS³ Center for Strategic Supply Research [2003] revealed service to total purchase spend ratio's as high as 87%. The participating organisations furthermore expected to increase their services spend by roughly 13% on average during the next five years.

However, for many services, the impact on the success of the buying company's business processes is far larger than the impact of the dollars spent on the service [Dobler and Burt, 1996]. Think for example of IT services, which have become critical to many organisations' operations: a failure in IT can disrupt the production process of a large chemicals company, or prevent consumers from performing online-banking activities resulting in decreased customer satisfaction. Consequently, the potential of a high-quality purchasing process followed by appropriate contract management activities is large: Fearon and Bales [1995] noted that "the opportunity to increase profits through more effective purchasing probably is greater in the buying of services than in the buying of goods". This view is supported by a study from Stradford and Tiura [2003] that shows that when cost savings are pursued, the savings on services range from 10 to 29 percent versus an average of 5 to 17 percent for other commodities or materials, and by Van Weele [2005], who suggests that a professional approach to purchasing services can be associated with savings between 5 and 20%.

Unfortunately however, three problems with buying business services can be identified. Firstly, purchasing is much less involved with buying services than with buying goods: according to Bailey et al. [1994] "35% of all services are bought without any other involvement of purchasing professionals than (at best) a clerical one". The study by Fearon and Bales [1995] mentioned earlier indicated that the purchasing department was involved in only 41% of total purchases. Smeltzer and Ogden [2002] concluded that the purchasing department is much more likely to be bypassed when services rather than materials are being purchased. The reason for this is that service purchases are usually seen as non-strategic, as a result of which they are often bought indiscriminately. The services that are regarded as important and strategic are, on most occasions, bought by non-purchasing specialists (content professionals like marketers, logisticians, et cetera).

Secondly, top management perceives services buying as less complex than materials buying, as a result of which they tend to put new buyers on services buying [Smeltzer and Ogden, 2002]. A CAPS study [2003] showed respondents report lower levels of competence in sourcing, procuring and

³ CAPS is an abbreviation for Center of Advance Purchasing Studies.

managing services as opposed to goods. Agndal et al. [2006] fortunately reports that the profile of a modern service purchaser is characterised by an increasingly higher level of education and a broader range of skills.

Finally, in contrast to what managers think, Stock and Zinszer [1987] and Jackson et al. [1995] demonstrated that organisational buyers view the purchase of services to be essentially different from the purchase of goods. Fitzsimmons et al. [1998] and Smeltzer and Ogden [2002] state that when the purchase of services is compared to the purchase of goods, the process for services is more complex. In the CAPS [2003] benchmark study 70% of respondents indicated to find buying services more difficult than buying goods, while 75% feel it is more difficult to manage the delivery of services than to manage the delivery of goods. A survey among purchasing managers of Dutch companies on the supposed differences between goods and services indicated that purchasing managers feel it is more difficult to develop specifications for services than for goods [Van der Valk et al., 2005]. Also, preparing an effective Service Level Agreement (SLA) usually takes much time and effort. Similarly, Åhlstrom and Nordin [2006] in line with Andersson and Norrman [2002] found that developing service definitions is critical, yet difficult, especially when the buying company has little experience with buying services.

As a result, there is much to be gained in the area of buying services. This especially (but not only) applies to service companies. Since 1984, the vast majority of the medals of excellence that US based Purchasing Magazine awarded to companies for outstanding purchasing performance were given to companies from manufacturing industry compared to services industry (www.purchasing.com). A NEVI⁴ Purchasing Excellence benchmark study [2002] revealed that the best performers in the Information Intensive services and Asset Intensive services industries were lagging behind in Purchasing Excellence compared with the best performers in other participating industries (e.g. mass manufacturing, project industry, consumer products, raw material processing). The final report of the Purchasing Excellence study however denotes that information-intensive services focus relatively the most attention on purchasing professionalisation [NEVI, 2006].

At the same time, services are on the agenda of many organisations, especially since the realm of services is expanding beyond just non-product related purchases. Patel [2005] interviewed 30 main board directors of leading

⁴ NEVI stands for Dutch Association of Purchasing Management [in Dutch: Nederlandse Vereniging voor Inkoopmanagement). Performance in these studies is measured in terms of savings obtained through more professional purchasing: the participating companies were able to reduce their purchase expenditures by 10%, which eventually results in an EBIT (Earnings Before Interest and Tax) improvement of 21% [NEVI, 2006, p. 13].

companies and observed that 70 percent of them worry about how their companies buy professional services (e.g. consulting, legal, banking and marketing services). They also believed that CPOs and their procurement departments can make a difference in service buying and want them to do so.

1.6 OVERVIEW OF THE DISSERTATION

The usage-based classification of business services [Wynstra et al., 2006] and the dimensions of interaction as defined by the Interaction Approach [Håkansson, 1982] are the starting point for the dissertation. As a preview to the remainder of this dissertation, Table 1.1 displays the structure of the dissertation in chronological order and in terms of knowledge accumulation. For a detailed discussion of how the different studies build on and relate to each other, we refer to Chapter 3.

Initially, a validation of the usage-based classification and variation in interaction took place by means of exploratory studies into service buying conducted by the two advisors for this PhD research, Finn Wynstra and Björn Axelsson (Chapter 2). In these studies however, the conceptualisation of interaction was limited to ‘structural’ variables related to the buyer-seller interface. Furthermore, selection issues and the development of research instruments had not been explicitly addressed.

The conceptualisation of interaction was therefore expanded to include process dimensions of interaction. Furthermore, the level of buyer-perceived risk involved with the service was introduced as an analysis control. After developing specific research instruments (i.e. guides for semi-structured interviews and self-administered questionnaires), I investigated the presence of variation in interaction by studying four service purchases at a manufacturing company. This study showed that variation in interaction exists and that the level of buyer-perceived risk involved influences the extent to which these different patterns exist. Additionally, the research instruments were validated.

In the subsequent field study, 36 cases (service purchases) at nine different buying companies were studied by means of case studies. An analysis of a subset of these data was aimed at identifying effective systematic variation in interaction across multiple buying companies; this study included nine service purchases from two companies. In order to investigate whether the effective patterns identified did not equally occur with non-successful service purchases, another subset of eight cases was analysed in which the pattern of a successful and an unsuccessful service purchase were compared for each of the four service types.

Table 1.1 Structure of the dissertation

Period	Activity
09/03-06/04	Develop research proposal
03/04-08/04	Set up case studies
06/04	Pilot case study at FEE
09/04-04/05	Field work at nine additional buying companies
05/05	Round Table session with buying company representatives
05/05-03/07	Analysis & writing dissertation
<i>Chapter</i>	
<i>Cases used/ companies</i>	
2.	Introducing the usage-based classification of business services
3.	Methods
4.	Including process dimensions in conceptualisation of interaction / introducing buyer-perceived risk as analysis control/ exploration
5.	Theory-building case studies in which each of the four service types are analysed at two buying companies
6.	Theory-building case studies in which successful cases and unsuccessful cases are compared
7.	Testing for necessary conditions
	<ul style="list-style-type: none"> ▪ Anecdotal evidence from exploratory case studies conducted by Björn Axelsson and Finn Wynstra ▪ Explanation of research design and data collection and analysis methods ▪ Four cases from one manufacturing company (FEE) ▪ This company was selected because it was the first company at which field work was conducted (served as a pilot to investigate appropriateness of data collection methods) ▪ Nine cases from two service providing buying companies (TEL and EIA) ▪ Selection of buying companies based on: <ul style="list-style-type: none"> ○ Industry type: component/ semi-manufactured services more easily found at service providers ○ Richness of qualitative case data ▪ Eight cases (four successful, four unsuccessful) from five buying companies (all service providers): EIA⁵, FSP, NGT, OCS and RDO ▪ Selection of cases with extreme scores on success ▪ Twenty-eight cases from various buying companies⁶ ▪ Absence of independent variable verified for cases in which dependent variable is present

⁵ Note that since we are building theory, the cases used earlier for exploration can be re-used. In this chapter, this specifically applies to reusing the EIA cases. In the overall study however, also the TEL cases are reused. The cases at FEE have not been reused because of incomplete data.

⁶ Since we are now testing theory, the eight cases that were used to build the theory (two from EIA, one from FSP, two from RDO, one from NGT and two from OCS) have been omitted from the sample.

These studies led to the development of typological types of buyer-seller interaction, i.e. descriptions of what effective patterns of interaction look like for each of the four service types. Thus: by continuously and iteratively building on and developing the *classification* of business services, we have eventually developed a *typology* [Doty and Glick, 1994] or different configurations of effective buyer-seller interaction. In a final study, we tested for a deterministic (as opposed to probabilistic) relationship between the independent variable (interaction pattern) and the dependent variable (success), by hypothesising that the effective patterns of interaction are necessary conditions for successful ongoing service exchange [Dion, 1998].

Table 1.1 illustrates that the dissertation can be viewed as a jigsaw puzzle (Figure 1.1). This analogy emphasises the search-like character of conducting research. Dubois and Gadde [2002] also suggested this analogy specifically for conducting case research. Like with a puzzle, the search starts with finding the side pieces, which provide the frame within which to conduct the research.

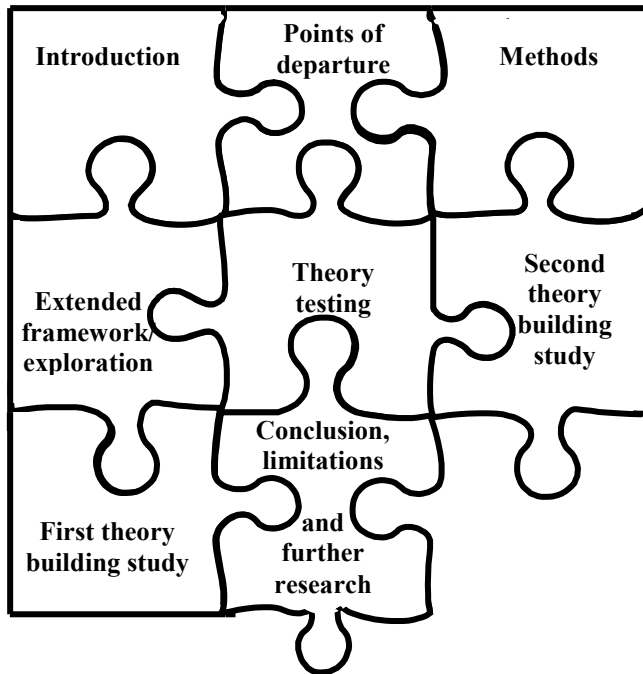


Figure 1.1 The dissertation as a jigsaw puzzle

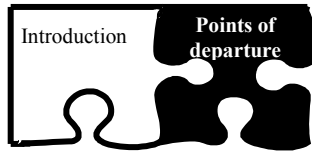
The longer one works on the puzzle, the clearer it becomes which pieces fit where: the further one progresses in research, the closer one comes to the core of the issues under study. Dubois and Gadde [2002] emphasise that choices need to be made during the research process: many pieces may show up, as a result of which the researcher may be confused with regard to what pieces fit together and to concentrate on. Figure 1.1 furthermore shows that the puzzle is incomplete, and that the last piece of the puzzle offers various leads for new research avenues, each representing roads thus far untravelled. The dissertation therefore ends with a discussion of the main conclusions, the scientific and managerial implications and limitations and further research.

Chapter 2 Conceptual framework

In this chapter, the conceptual framework for this research is presented. Building on existing classifications of industrial goods and consumer services, a classification of business services is developed which

identifies four types of business services based on how the buying company uses the service with respect to its own offerings.

The Interaction Approach of the Industrial Marketing and Purchasing (IMP) Group is adopted to conceptualise ongoing interaction between buyers and sellers of business services. Different patterns of interaction are expected to be most effective for different types of services. Anecdotal evidence from a first set of exploratory case studies is presented to provide initial support for this idea. The results suggest that the customer-usage dimension is relevant for differentiated ongoing buyer-seller interaction.



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Chapter 2

A Usage-Based Classification to Understand Buyer-Supplier Interaction in Business Services ⁷

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ABSTRACT

Most existing classifications of business services have taken the perspective of the supplier as opposed to that of the buyer. To address this imbalance, we propose a classification of business services based on how the buying company applies the service with respect to its own business processes.

Earlier literature has developed similar, albeit less elaborate classifications, but does not provide detailed insight into how such classifications are related to differentiated buyer-supplier interaction. Our classification distinguishes between four business service applications; as a component, semi-manufacture, instrument or consumable. For each of these four types of services, interaction has to achieve different objectives and consequently they differ with regards to required organisational resources in terms of required capabilities and buyer-supplier interfaces.

Primarily conceptual and exploratory in nature, this paper is intended as a review of existing literature and possible starting point for further empirical validation and theoretical refinement. We contend that the differences in application have a significant impact on interaction patterns, but this is not to say that other variables have no impact on buyer-supplier interaction patterns. Subsequent research should seek to control for those other possible sources of variation.

The overall implication of our classification is that for different services, the buying company should assess how they are applied. Subsequently, it is relevant for firms to consider what functional aspects are crucial and who are likely to become, or who should be involved and to what extent, in the purchasing decision process and in the interactions that take place after the decision has been made.

Keywords: conceptual paper, business services, purchasing, supplier relations, interaction, interfaces, organisational resources.

⁷ The authors wish to acknowledge the useful comments by workshop participants at Stockholm School of Economics and Arizona State University and the anonymous reviewers of the journal.

2.1 THE NEED FOR STUDYING BUSINESS SERVICES

Driven by changes in the economy, marketing and purchasing of business services has been receiving growing attention both in research and practice. For 'strategic' business services alone⁸, total employment was already around 10 million persons in 1995 for the combined OECD countries; more than twice the employment in the entire OECD motor vehicle industry, which is one of the largest manufacturing sectors [OECD, 1999; 2000]. The growth in business related services is the main driver behind the increase in the share of the service sector in total value added. In 2001, finance, insurance and business services such as legal and consultancy services accounted for 20-30 % of value added in the overall economy – having doubled their share since 1980 [Wölfl, 2005].

This importance of business services is also reflected in the purchase patterns of individual organisations. Already a decade ago, an investigation among manufacturing and service companies as well as public authorities showed that services accounted for a weighted average of 54 % of total purchase volume in the US [Fearon and Bales, 1995]. Developments like the increased use of outsourcing (and off-shoring) IT development, call-centre functions, product development and design, and the general trend towards the increased 'servisation' of goods, have only increased this share of services in total purchase volumes [Murray and Kotabe, 1999].

At the same time, most literature in the area of purchasing and supply management has traditionally focused on the sourcing of goods. However, already some 40 years ago, Wittreich [1966] stated that '*Unfortunately, the tried and true rules for buying goods do not work when applied to the buying of professional services*'. Indeed, various studies have demonstrated that organisational buyers view the purchasing of business services as essentially different from purchasing goods [Jackson et al., 1995; Stock and Zinszer, 1987]. One would expect these observations to have triggered a significant amount of research into sourcing of business services. However, literature in general has had a predominant focus on consumer services as compared to business services [Jackson et al., 1995, p. 100; Parasuraman, 1998, p. 313; Smeltzer and Ogden, 2002, p. 55].

More specifically, very few studies on service sourcing have investigated the ongoing interaction processes between buyers and suppliers; i.e. 'life after the purchase'. This is all the more surprising since service *management and marketing* literature has consistently been emphasising that services are produced in interactive processes between the seller and the buyer [Grönroos, 2000, p. 46].

⁸ This excludes standard cleaning and catering, and transportation and distribution services.

Finally, hardly any research is published that deals with the variety of business services from the buyer's perspective, and which examines how buyers deal with this variety [Smeltzer and Ogden, 2002]. The studies on service sourcing that are available tend to focus on just one particular type of services, for example management consultancy [Mitchell, 1994] or advertising [Lichtenthal and Shani, 2000; West, 1997].

The purpose of this primarily conceptual paper is to develop a classification of business services based on how the buying company uses or applies the service with respect to its own business processes. We argue that this classification is instrumental in understanding systematic (effective) variations in buyer-supplier interaction [Håkansson, 1982].

In developing this classification, we draw on existing literature in the area of service management and service marketing [Grönroos, 2000; Zeithaml and Bitner, 1996] and industrial marketing and purchasing [Håkansson, 1982]. In the next section, we discuss these literatures to investigate the importance of ongoing buyer-seller interaction in general, and more specifically in relation to business services.

The subsequent section discusses some of the existing goods and service classifications in order to arrive at a classification scheme of business services that could be fruitful in understanding variations in buyer-seller interactions.

As a first validation of this classification, we conduct exploratory, qualitative fieldwork that mainly consists of interviews and participant-observations, which results in a set of initial propositions on how variation in interaction is related to different types of services. As this paper is a first step in developing a conceptual framework to be used in future research, it concludes with a discussion of limitations and possible extensions of the classification in future research.

2.2 THE IMPORTANCE OF ONGOING INTERACTIONS

Existing literature dealing with service sourcing by buying firms has mainly focused on the selection and contracting stages of the purchasing process, sometimes in combination with the later stages related to (performance) evaluation [Day and Barksdale, 1994; Mitchell, 1994]. As such, most of this literature appears to be rooted in the Organizational Buying Behavior tradition [Johnston and Lewin, 1996]. This stream of literature, originating in the marketing discipline, was one of the first to deal with purchasing and supply management issues and primarily studies buyer-supplier *transactions* [Levitt, 1965; Robinson et al., 1967].

Since the early 1980s, however, through its 'interaction approach' the IMP (Industrial Marketing and Purchasing) Group has been strongly and consistently arguing that studies of business marketing and purchasing should

focus less on the rather ‘transactional’ purchasing process, and more on the *ongoing interactions* between customer and supplier [Anderson et al., 1994; Araujo et al., 1999; Gadde et al., 2003; Håkansson, 1982; Håkansson and Snehota, 1995; Hallén et al., 1991]. According to the interaction approach, ongoing interactions in business relationships are particularly relevant given the fact that most firms tend to engage in a limited number of long-lasting relationships.

In business relationships, (most) interaction is functional (effective). The main rationale for interaction between (individuals from) the buyer and seller is to communicate about, coordinate and adapt the activities and resources firms are allocating to and/or using in the relationship. The interaction approach, although originally developed predominantly on the basis of studies of buyer-supplier relations in the case of goods, has increasingly been used in studies of business services [Eriksson et al., 1999; Eriksson and Löfmarck-Vaghult, 2000; Eriksson and Mattsson, 2002; Leek et al., 2004].

The interaction model presents an extensive conceptualisation of the factors that affect the form and content of interaction processes [Håkansson, 1982]. The characteristics directly related to the interaction process, which are mostly seen as dependent variables, consist of short-term aspects, such as frequency, intensity and hierarchical and functional scope of buyer-supplier contacts, and long-term aspects, such as adaptation of activities and relation-specific investments in certain resources. In addition to interaction processes, the model identifies three other groups of variables, which are usually treated as independent variables. The first group includes the characteristics related to the atmosphere in the relation and the individual transactions (i.e. degree of cooperation); the second group includes more general environmental factors (i.e. number of alternative exchange partners). The final group comprises the characteristics of the organisations involved (i.e. their marketing/purchasing strategy) as well as the characteristics of the actual product being exchanged (i.e. degree of complexity of the product). The following section will expand on one of these product characteristics as the key element in our proposed services classification.

These notions regarding the importance of ongoing interactions raised by the IMP Group strongly resonate with a recurring debate in the service management and marketing literature. Researchers in this field argue that the quality and productivity of business services are often highly dependent on the human resources involved in the production, delivery and consumption of those services – on *both* sides of the relationship [Grönroos, 2000, p. 210-212; Gummesson, 1998].

Lovelock [1983], for instance, has addressed how customers can become more productive ‘inputs’ into the service delivery process, by means of actions such as timing-changes, co-production and third-party involvement. Martin Jr

et al. [2001, p. 137] points out that clients can participate in the specification, co-production and on-going production of the service offering, and in the marketing and selling of the service to others. Bettencourt et al. [2002] focuses on the issue of client co-production in the area of knowledge-intensive business services. In particular, it studies the motivation and ability of clients to share information, contribute to project governance, sell projects internally and accommodate the expertise of the service firm [Bettencourt et al., 2002, p. 106-109]. In short, service supply chains are (often) bidirectional, with production flowing in both directions [Sampson, 2000].

The interactive character of business services has thus received considerable attention in literature, but from a service management and marketing standpoint rather than from a service sourcing point of view. In order to understand the systematic variations that may occur in different service buying situations, we contend that a new classification of business services is needed.

2.3 CLASSIFYING BUSINESS SERVICES

Within the field of service management, Jackson and Cooper [1988] and Boyt and Harvey [1997] note that the classification of *industrial* services – i.e. business services – has received far less attention than the classification of consumer services, and this has also been noted in the purchasing and supply management literature [Smeltzer and Ogden, 2002].

The classifications of business services that do exist focus on the characteristics of the *provider*, rather than the characteristics of the *buyer* or the *usage* situation [Cunningham et al., 1997; Mills and Margulies, 1980; West, 1997]. Such supplier based classifications, though, may not be sufficient in trying to understand the need for specific patterns of buyer-supplier interaction.

Mills and Margulies [1980], for example, explores buyer-supplier interaction in more detail by distinguishing service organisations on the basis of the workflow between the service employee and the customer. One type of providers, personal-interactive service organisations such as medical and legal service providers, focuses on the improvement of the well-being of individual clients. However, a firm buying medical services that are used by its own employees, e.g. medical examinations, will need to interact differently with its supplier than an (adventure) tour operator buying these services to serve its travel clients (to test their physical fitness for the trip). For instance, the examinations for the tour operator are varied (depending on destination) while the internal employee examinations are usually more standardised. Specification and demand management differ for the two cases. Hence, for understanding the (required) interaction between buyers and suppliers of

business services, it is more helpful to classify usage situations rather than providers.

Relative to the lack of business service classifications, the services management and marketing literature is replete with classifications of *consumer* services [Grönroos, 2000; Kasper et al., 1999; Zeithaml and Bitner, 1996]. Classifications of consumer services, however, are not very helpful in understanding buyer-supplier interaction in business services, because consumer products (primarily goods but also services) are not differentiated on the basis of how they are being used or applied [Jackson and Cooper, 1988, p. 14]. In contrast, existing classifications of *industrial goods* are based on how the goods are applied, and hence we better turn to these classifications for developing a new business services classification.

Taking a manufacturing buyer's perspective, Hutt and Speh [1985] suggest that three major groups of industrial products can be identified: products to be included in the buying firm's market offering, major capital investments that are necessary for the business processes of the buying firm, and products that are part of the ongoing operations of the buying firm. Kotler [1984] describes these groups as materials and parts (enter the buying firms' product completely), capital items (enter the buying firm's product partly) and supplies and services (do not enter the finished product at all). Also in the first large-scale field study of the IMP Group, industrial goods were differentiated based on how they are related to the buying company's business processes [Håkansson, 1982]. This resulted in three groups of products: components, raw and processed materials, and capital equipment.

In neither of these classifications, services are discussed in any great detail. Note that Kotler's [1984] classification puts all services in one group, with only a supporting role (they do not enter the finished product). This may be seen as a remnant of the manufacturing-based model of marketing⁹. For many buying organisations, however, services may become part of the final offerings to customers. Think, for example, of airport luggage handling outsourced by an airline or subcontracted field maintenance for a producer of petrol pumps.

This point is also addressed by Jackson and Cooper [1988], who claim that the services management and marketing literature is lacking a discussion of services that are used in the production process and in effect become part of the buying company's offerings to customers. The authors propose a classification that includes both goods and services: *capital products* (major equipment); *operation products*, which comprise minor equipment and 'MRO services' such as maintenance but also legal services etc.; and *output products*, encompassing raw materials, components and 'production services' purchased

⁹ Also the most recent edition of this marketing textbook uses the same classification [Kotler and Keller 2006, p. 375-376].

for the final product. In other words, MRO services are purchased by an organisation to run its operations and generally constitute indirect costs, while production services become part of the production process for a particular (set of) product(s), and thus generally constitute direct costs [Jackson and Cooper, 1988; Jackson et al., 1995].

Jackson et al. [1995] use the example of an advertising agency to illustrate that the classification of a service from one and the same provider can vary with the way the customer uses the service: the advertising agency could be classified as an MRO service if it assisted with the organisation's overall promotional program, or it could be classified as a production service if it designed an advertising campaign for a specific product (line). The classification does matter for the organisation of the sourcing process, though; in their survey study, Jackson et al. [1995] found that 52% of organisational buyers agreed with the notion that there is a difference between the two types of services. What these differences would be, however, is not discussed in more detail; nor anywhere else in the literature it seems.

Extending the classification proposed by Jackson and Cooper [1988], we develop a classification of business services which covers all possible service usage situations. Our classification comprises four different types of business services based on how the buying company applies the service with respect to its own business processes: component services, semi-manufactured services, instrumental services and consumption services.

Component and semi-manufactured services are two different types of what have earlier been referred to as production services [Jackson et al., 1995]. In line with Håkansson's [1982] classification of industrial goods, we make a distinction between component services – which are delivered to subsequent customers without transformation by the buying firm – versus semi-manufactured services, which are transformed by the buying firm before being delivered to customers.

Instrumental services represent major investments in (intangible) assets to execute the buying firm's operations, and fall into the general category capital items [Håkansson, 1982; Jackson and Cooper, 1988]. Consumption services are nearly identical to MRO services [Jackson and Cooper, 1988; Jackson et al., 1995], are consumed by and within the buying organisation and typically include less expensive, more routine-like services¹⁰. Normann and Ramirez [1994] use the terminology of 'enabling' and 'relieving' services respectively for a similar distinction.

¹⁰ The category "operation products" was excluded from the initial IMP studies, with the argument that such products would usually be handled in a more 'transactional' fashion.

Phenomena (here: services) can be allocated to one of the (here: four) mutually exclusive and exhaustive categories based on the following set of decision rules [Doty and Glick, 1994, p. 232]:

- If the service does not directly affect how the buying company's primary processes are carried out, it is a consumption service (e.g. office cleaning services for an airline).
- If the service directly affects how the buying company's primary processes are carried out, but is not delivered to end-customers, it is an instrumental service (e.g. Information and Communication Technology services used to support flight operations). Timing and frequency of service production and delivery is not directly related to demand from individual customers of the buying firm.
- If the service, after being transformed¹¹, is delivered to end customers of the buying company, it is a semi-manufactured service (e.g. weather forecasts which are transformed into specific flight schedules). Semi-manufactured services are primarily used as an *input* by the buying organisation for particular offerings for final customers.
- If the service is, without transformation, delivered to end customers of the buying company, it is a component service (e.g. baggage handling).

As studies adopting the interaction approach have found that the type of industrial good is a strong determinant of functional interaction patterns, we propose that a similar classification of business services provides a potentially useful perspective for differentiating buyer-supplier interaction patterns. In a first step to develop such differentiated interaction patterns, we choose to focus on a limited number of key variables that primarily relate to the objectives and organisational resources for this interaction.

2.4 APPLICATION AFFECTS INTERACTION

The central factor that is affected by the type of application regards the key issues, or more formally the *objectives* of the interaction [Håkansson, 1982, p. 58-192]. These objectives, in turn, put demands on the organisational resources available for the interaction. These resources can be divided into two main factors: the required buyer and supplier capabilities, and the optimal buyer-supplier interface in terms of the representatives involved at both the supplier and the buying firm [Cunningham and Homse, 1986]¹².

¹¹ Please note that, in this definition, it is the *service* itself that undergoes a transformation, as opposed to the customer, as is common in other definitions of (mainly consumer) services.

¹² See, for a general plea to focus more study on service operations resources, especially in the case of business services, Roth and Menor [2003, pp. 156-7].

Objectives

For component services, the main objective of the interaction concerns achieving an optimal fit – both in terms of quality aspects (conformance to specs, functionality) and quantity aspects (volume, time) – between the individual component and the final product. One key dimension related to this fit is the degree of customisation of the component with respect to the different customer segments of the buying firm. For semi-manufactured services, the key objectives are quite similar, with the addition of optimising the form and degree of processing of the service with respect to the buyer's application [Fitzsimmons et al., 1998, p. 372; Håkansson, 1982, p. 58-63].

For instrumental services, the main objective of the interaction regards the integration of the (results of the) service with the primary processes of the buying firm, so that the service constitutes an optimal enabler of these processes also in the long run. Compared to component and semi-manufactured services, the specific challenge is to achieve, maintain and improve this integration against the background of a generally lower frequency of service deliveries [Håkansson, 1982, p. 163-192]. For consumption services, the central objective is to optimally facilitate the buying organisation, and its individual members, to carry out its primary tasks [Fitzsimmons et al., 1998; Normann and Ramirez, 1994]. Given their limited significance for the primary process and for the buying firm's customers, a common objective is also to achieve a cost-efficient delivery process [Jackson et al., 1995].

Capabilities

The differing objectives associated with the different types of services put certain requirements on both the buyer's and the supplier's capabilities. Jackson et al. [1995, p. 103] argues that suppliers require different capabilities for MRO and production services. Capabilities will differ especially between component and semi-manufactured services on the one hand, and instrumental and consumption services on the other.

For component services, critical capabilities include the supplier's knowledge both of its own product but also of the buying firm's final product, and its ability to manage its internal service delivery capacity in accordance with the buyer's demand. For semi-manufactured services, the supplier capabilities are quite similar again, although the relevant knowledge may be more directly related to the service (production and delivery) process [Håkansson, 1982, p. 58-63]. For the customer, critical capabilities in the interaction with suppliers of component and semi-manufactured services include the ability to (timely) interpret, translate and communicate (changes in) final customer demands and the capacity to synchronise and coordinate the

design ('architectural knowledge') and delivery ('assembly capacity') of the different services.

For instrumental services, critical supplier capabilities include the ability to understand the buying firm's production process, and its stability and credibility in terms of being able to sustain and support the service for an extended period of time [Håkansson, 1982, p. 163-192].

For consumption services, a critical capability for the supplier is running an efficient service production and delivery process, by means of optimising resource allocation and utilisation [Jackson et al., 1995]. For the customer, critical capabilities in the interaction with suppliers of instrumental and consumption services concern the ability to interpret, translate and communicate the demands of internal users and the capacity to (help) implement and leverage these services within the own organisation.

Interfaces

Not only the respective capabilities of both parties, but also the participants on both sides of the interaction process will differ, especially between component and semi-manufactured services on the one hand, and instrumental and consumption services on the other [Fitzsimmons et al., 1998, p. 372; Jackson and Cooper, 1988, p. 115, 118]. We refer to this constellation of representatives involved in the interaction between buyer and seller as the buyer-supplier interface [Cunningham and Homse, 1986]¹³.

For the buying firm, not only sourcing specialists will be included in the interface with the supplier, but especially also internal users. In the case of component and semi-manufactured services this will typically include representatives from the Production and Marketing functions. In the case of instrumental services, internal users normally include general management, service specialists (e.g. internal lawyers in the case of legal services) and representatives from Production and possibly Business Development. For consumption services, internal users involved in the interaction with the supplier typically include representatives from Facility Management and Human Resource Management (or similar), and possibly from Production¹⁴.

Arguably, this definition of interaction patterns in terms of objectives, capabilities and interfaces represents a somewhat 'static' conceptualisation, as opposed to the more dynamic conceptualisation, for example in terms of adaptations and institutionalisations, as prevalent in the interaction approach. Our proposed classification, however, is not inherently limited to the factors discussed above. After subsequent empirical validation of these initial

¹³ We prefer not to use the terms Decision-making Unit (DMU) and its supplier equivalent, the Problem-solving Unit (PSU), since these concepts are mainly used in the context of the initial purchasing process, and not for the ongoing relationship.

¹⁴ Especially for those services directed at employees [Fitzsimmons et al. 1998].

propositions on how application affects interaction objectives and organisational resources, further theoretical refinement could lead to the inclusion of more process-related variables in the description of differentiated interaction patterns.

2.5 ILLUSTRATIONS

As a first step in the empirical validation of the proposed classification, we now provide some concise illustrations based on exploratory studies of service procurement processes at nine different organisations: an equipment rental firm, a consultancy firm, a human resource management agency and a construction firm from Sweden; an airline, a chemicals firm and a bank from the Netherlands, a Canadian engineering firm, and a multi-national telecom operator [Jismalm and Linder, 1995]¹⁵. Data collection was mainly done through qualitative interviews with purchasing managers, buyers and internal users of business services and partly through participation in and observation during meetings between customers and suppliers.

As such, our data collection methods closely resemble case research methods [Yin, 2003]. However, we will not refer to these exploratory studies as case studies, primarily because we have not explicitly addressed sampling issues (it involved convenience rather than theoretical sampling) and the lack of extensive research instruments used. As a result, external validity and reliability are not ensured [Yin, 2003]. At the same time, given the fact that data was collected guided by a particular conceptual framework, we contend that the internal validity of the illustrations is sufficient to be used as initial validation in this exploratory phase of theory development [Dubois and Gadde, 2002]. Table 2.1 provides a brief overview of the main observations for the illustrations that are presented in more detail below.

2.5.1 Component services

The examples of component services concern the consultancy firm buying training from a specialist supplier for its customer (the machine rental firm), and the telecom operator buying groundwork services and goods transportation in order to be able to install cables and an exchange system at a customer's home or office.

The first example in shows that, besides the buying firm itself, representatives of the buying firm's customer (the rental firm) were directly involved in the design of this service. From the side of the supplier, the key account manager and someone involved with producing the service (instructor)

¹⁵ These case companies were sampled in a snowballing-mode, initially starting from 3-4 main firms, and subsequently including organisations in their respective 'supply chains'.

were brought in direct contact with representatives of the final customer firm (the rental firm). This way, the supplier could obtain a thorough understanding of the total service package that the consultancy firm was selling, as well as of the way in which the rental firm would use that service.

The second example emphasises what topics are mostly addressed in the communication (timing of activities) as well as what capabilities are required (being reliable in terms of service delivery, being able to deliver complete solutions).

Box 1: Component service at the consultancy firm

A consultancy firm (the buying firm in this example) got a major assignment to support a machine rental firm (end customer)¹⁶ in developing its purchasing operations to a higher level. The assignment included a diagnosis as well as training and active support in implementing the new practices. The education part was outsourced to a specialist training firm (supplier). This was a strategically important component and involved five days training of the entire purchasing staff as well as several others who were dependent on a well-functioning collaboration with the purchasing specialists. It also included one day of training with a group of general managers in the company.

To handle this process the consultancy firm brought the supplier's responsible key account manager as well as the primary instructor to become involved in the 'production' of this component, into direct dialogue with representatives for the management team, including the purchasing director and the CEO of the equipment rental firm. In addition, the consultancy firm was very active in the dialogue around the design of the service, for example regarding suitable themes to bring up and materials and cases to use.

¹⁶ Note that the rental firm in this example is the *customer* of the 'focal' buying firm; in later examples it will act as a buying firm itself. See also footnote 14.

Box 2: Component service at the telecom operator

In the case of installing an exchange system and cables at a new office building of a given end customer (i.e. a lawyer's office), examples of component services may be goods transportation and groundwork services. It turns out that the communication pattern between the buying firm and the suppliers of these component services is quite broad and deals with practical aspects of the service, such as timing of activities etc, and not so much with the design of the service. Many people are in touch with suppliers for the services mentioned. The contacts are even 'deep' in nature, as evident in their high frequency and intensity. Important demands on the suppliers are delivery reliability, and being able and willing to take responsibility for complete 'system solutions'. With regard to the long-term development of the relation, emphasis is being placed on 'playing with open cards'; customer and supplier should maintain a trusting and open dialogue.

At the Canadian engineering firm, component services include blueprinting services, which are bundled into a complete package by the engineering firm for their clients. Baggage-handling services bought by the Dutch airline to 'complement' their total service package to travellers are another example. Once, frequent flyers got a letter from the airline apologising for the weak performance of the baggage handling provider; this would not have happened if the service was not that directly 'visible' to these final customers.

By using component services, the customer's offering can be differentiated and added value may be created. Therefore, one salient issue is to clarify to the supplier how the service is related to the total 'package' and how the final customer will use this package.

Table 2.1 Observed interaction patterns

Cases		Objectives	Critical supplier capabilities	Critical customer capabilities
<i>Component</i>	Consultancy firm	<ul style="list-style-type: none"> Specialty knowledge of the field plus in-depth understanding of the specific situation. 	<ul style="list-style-type: none"> To really understand the end customers problems and needs as well as the complementary services produced by the customer and / or other suppliers. 	<ul style="list-style-type: none"> Defining the needs of the final customer (the customer's customer) and the design of the service including content and case illustrations etc.
	Telecom operator	<ul style="list-style-type: none"> Timing of activities between various involved actors. System-wide functional responsibility. 	<ul style="list-style-type: none"> Practical aspects of the service, timing and activities, reliability as supplier being able to take on system- wide responsibilities. 	<ul style="list-style-type: none"> Defining the right specifications and to be able to synchronise its own activities to those of the supplier(s). Ability for continuous follow-up and dialogue.
<i>Semi-manufactured</i>	HRM agency	<ul style="list-style-type: none"> The exchange centred on designing, and analysing the research instrument, plus data collection design. 	<ul style="list-style-type: none"> Genuinely understanding the interests of the customer and the customer's customer. Having good enough knowledge on how to translate information needs into survey design as well as methods of analysis. 	<ul style="list-style-type: none"> Having a good enough understanding of what is relevant and actionable knowledge for internal units. Being able to transform those to demands on the supplier.
	Bank	<ul style="list-style-type: none"> Maximum support of these services to internal production process. 	<ul style="list-style-type: none"> Delivery reliability, timely and accurate information delivered. 	<ul style="list-style-type: none"> Being able to formulate needs and, in dialogue, regularly follow-up on performance.
<i>Instrumental</i>	Equipment rental firm	<ul style="list-style-type: none"> Translating external and internal changes in conditions to actionable items. 	<ul style="list-style-type: none"> Understanding the actual situation of the customer. Being capable and up to date regarding management issues. 	<ul style="list-style-type: none"> Understanding how suggested improvements relate to other processes inside the firm. Being able to continually evaluate the supplier and suggestions.
	Telecom operator	<ul style="list-style-type: none"> The functionality of suggested solutions. 	<ul style="list-style-type: none"> Managing the dialogue and performances in line with customers' needs and expectations. 	<ul style="list-style-type: none"> Understanding how the various services fits with demands systems and work methods.
<i>Consumption</i>	Telecom operator	<ul style="list-style-type: none"> Basic functionality and timeliness. 	<ul style="list-style-type: none"> Quality of solutions, geographical coverage, systems solutions, low total costs. 	<ul style="list-style-type: none"> Being explicit on needs, carrying on a continual dialogue both with supplier and internal users.

Supplier representatives	Customer representatives
<ul style="list-style-type: none"> ▪ The key account responsible and the primary designated trainer. 	<ul style="list-style-type: none"> ▪ The management team including the CPO and the CEO.
<ul style="list-style-type: none"> ▪ Quite a lot of people involved covering the functional aspects of the bundle of services in question. 	<ul style="list-style-type: none"> ▪ Purchasing responsible for the range of services plus several internal users with insight into these services.
<ul style="list-style-type: none"> ▪ Questionnaire designers as well as people responsible for planning the production, including HR specialists. 	<ul style="list-style-type: none"> ▪ Mostly HR specialists who are responsible for this activity, but also purchasing people from the customer's customer and, indirectly, several other functional units.
<ul style="list-style-type: none"> ▪ Sales representatives and technical experts. 	<ul style="list-style-type: none"> ▪ Relatively few people involved, mostly people responsible for utilising and distribute this service.
<ul style="list-style-type: none"> ▪ Key account manager and senior consultants continuously involved in the relation. 	<ul style="list-style-type: none"> ▪ Management team including CEO.
<ul style="list-style-type: none"> ▪ Key accounts complemented by experts on the specific instrumental services discussed. 	<ul style="list-style-type: none"> ▪ Purchasing operative plus functional specialists related to the functional areas of the instrumental service in question.
<ul style="list-style-type: none"> ▪ Key- accounts for the specific customer complemented by product specialists. 	<ul style="list-style-type: none"> ▪ Purchasing responsible for the respective functional area complemented by internal users of the service in question.

2.5.2 Semi-manufactured services

One of the semi-manufactured services studied is the purchase of data collection by the human resource management (HRM) agency. This data collection service is part of a human resources investigation, and the agency uses the data to provide a complete service to its client (the construction firm). The other is the purchase of ATM machine services.

Box 3: Semi-manufactured service at the HRM agency

Once a year, a Scandinavian construction firm buys an investigation of its human resources. It is a systems purchase consisting of service components as well as semi-manufactured services. It is strategic, as based on the results considerable management attention is devoted to design activities.

One semi-manufactured service in the package is the data collection. An annual questionnaire is to be prepared, distributed, collected and analysed. The questionnaire is partly changed every year to make it possible to capture recent developments. A market research firm is involved in constructing the questions, gathering the basic data and running the basic statistics. However, a more specialised HRM firm together with key professionals from the construction firm (the final customer) jointly carry out the more advanced analyses. In doing so, they need to be sure that the semi-manufactured service bought has been carried out in a way that allows for the analysis in this later stage. In order to prepare for that and to know what is possible to do with the data collected, there is always some interaction between the questionnaire designers and the analysts of the HRM consultants and the final customer.

Box 4: Semi-manufactured service at the bank

For the Dutch bank, examples of semi-manufactured services include the outsourcing of servicing and 'loading' cash machines (ATM's). In this case, ATM services are used as input for the internal production infrastructure (the ATM plus internal information systems) to produce a final product (cash availability).

The first example illustrates that the buying firm (the HRM consultant) is involved with the design of the service provided, as to make sure that the intended transformations can be performed. This requires intensive collaboration between the market research firm and representatives of the buying firm. In the second example, there is less need for such extensive dialogue, as these services are more standardised. Rather, the focus is on timing and reliability of delivery (so that the transformations can take place according to plan) and improvement initiatives (both in terms of efficiency and effectiveness).

At the Canadian engineering firm semi-manufactured services include drilling and testing of soil samples, which is outsourced to an external specialist and then used in preparing construction proposals.

Semi-manufactured services will be processed further in the buying company's operation; therefore, 'processability' becomes a key issue in the dialogue with the supplier. It is therefore important to involve the people supplying the semi-manufacture and those who are designated to perform the further processing.

2.5.3 Instrumental services

One of the instrumental services studied is the purchase of consultancy services by the equipment rental firm. The outcomes of consultancy projects require certain improvement initiatives and changes to the buying organisation; as such, the buying company's primary processes are usually affected. The second example involves consultancy services and training and educational services at the telecom operator.

Box 5: Instrumental service at the equipment rental firm

The consultancy supplier to the equipment rental firm is a strategic partner. This means that it is continuously in touch with the customer. The CEO and the management team carry on a regular dialogue with a group of senior consultants at the consultancy firm. From time to time, the need for changes in organisational structures, processes and key professionals occurs. The case of developing the purchasing operations is an instrumental service. It is meant to change the work habits including most of the purchasing and logistics processes. This can, however, not be done without taking other related processes into account. This involves e.g. marketing and sales, as well as recruitment processes. To deal with this complexity, the buyer has designed a team of people to be involved in the change process and also to be actively in contact with the supplier. The dialogue regards changes in purchasing, but to a large extent also interfaces with processes and structures of other functions.

The first example demonstrates that instrumental services affect more processes than just the ones they are primarily directed at. This results in the need for a broad cross-functional team which interacts directly with a similar team from the supplier's side. The second example highlights important areas of attention, like usability (the service has to fit with existing business processes, affecting some while leaving others untouched) and delivery reliability. Innovative capabilities become important here, since the supplier is responsible for developing the service provided in such a way that it

contributes to the efficiency and effectiveness of the buying company's primary processes.

Box 6: Instrumental service at the telecom operator

Concrete examples of services in this firm that are used as instrumental services are education and management consultancy services. These services are bought repeatedly, and on a case-by-case basis. This implies that the kind of employees involved may vary, but that the relation with the supplier becomes more intensive in connection with a specific purchase or ongoing deliveries, which is determined by that part of the company whose methods of working will be most affected by the purchase. Important functional demands on this type of service are usability – being useful within the firm's business system – and delivery reliability.

Being useful means that it needs to be synchronised with other operating methods and procedures in the organisation, either so that they change in order to fit or that the new service is adapted to the existing methods. Regarding the conditions for long-term collaboration, it is emphasised that the supplier should have the capability to continuously develop and improve its products – which enhances reliability.

At the Canadian engineering firm, instrumental services include external education programs for managers and employees and legal advice. At the Dutch chemicals company, instrumental services include the design, installation and maintenance of digital process control systems.

An instrumental service needs to fit with some existing business processes, while it is likely to alter other processes. Possibly, it has an impact on the entire way in which the buying company operates its business. This could involve issues like how to design certain organisational processes. Instrumental services resemble investment projects in the sense that they are purchased repeatedly and on a case by case basis. Considering the investment-like character of these purchases, the ongoing interaction will often involve higher level management.

2.5.4 Consumption services

Consider the following illustration of consumption services, namely the purchase of hotel services, cleaning, et cetera, by a telecom operator.

Box 7: Consumption services at the telecom operator

Hotel services, cleaning, security, medical care and insurance were all identified as examples of consumption services. In those cases, there are a highly limited number of people involved in the contacts with the supplier. The services are contracted on an annual basis, from an approved vendor list, and on the basis of competitive bidding. Important requirements for the suppliers are the ability to offer total solutions, geographical coverage and low total costs. It is also typical that the internal users of these services are often not at all involved in making the deal and also that they have limited contact with those who are.

In contrast to the other service examples, relatively few people are involved here in the ongoing interactions with the supplier. Usually, one or several people represent large numbers of users/ people being affected by the service delivery (think i.e. of cleaning services that are purchased with the involvement of a facility manager representing all occupants of an office building). The interaction is limited to certain activities from the buying company's purchasing process (i.e. supplier selection, ordering and evaluation). Efficiency is an important topic in the buyer-seller dialogue.

At the Canadian engineering firm, consumption services include office cleaning, catering, and gardening and snow removal. At the Dutch airline, it includes catering for office personnel; in-flight catering services are not a consumption service but a semi-manufactured service.

Consumption services merely constitute a secondary support for the customer's business. These services are a very broad category and it is difficult to identify any specific patterns. In many cases these services are targeted at the firm but the category includes also most of the services targeted at specific individuals within the firm.

The category mainly consists of a large variety of items that involve significant administrative efforts: the so-called 'small order' problem. Buying this type of items therefore requires the development of efficient handling and administration routines such as systems contracting and the like [Van Weele, 2005].

2.6 DISCUSSION

Based on our initial discussion and the subsequent exploratory studies, Table 2.2 summarises the main propositions regarding the buyer-supplier interaction for the different types of services. For each service type, it lists the objectives, the critical capabilities of both parties and the interfaces in terms of the representatives involved.

For component services, the objectives and required capabilities focus on the integration of the service into the overall market offering of the customer, and hence marketing representatives from both sides will be extensively involved. For semi-manufactured services, some of these component service patterns are combined with the involvement of production representatives to deal with the fit between the supplier and customer *processes* rather than just the *products* (i.e. the service/final product).

In the case of instrumental services, the emphasis is not so much on the fit between the supplier's and buyer's products and processes, but rather on how the buying firm's processes will be affected by the supplier's service. Therefore, for effective interactions, we expect to find a greater role for business development representatives and process engineers. Finally, for consumption services, internal customers and their demands will have a more central role in the interaction process.

The illustrations also provide some indication that the type of application alone does not fully explain different patterns in terms of interaction objectives, required capabilities and buyer-supplier interfaces. In particular, it seems that within a given type of application, the objectives, capabilities and interface for some services are more explicitly defined than for others.

Consider the component service in Box 1, which is a 'strategic' and knowledge intensive service with a potential major impact on the buying firm's customer. This partly explains the 'qualified' dialogue among the involved parties. The component service example of Box 2 concerns a non-strategic service with a more limited impact on the telecom firm's customers, which partly explains the broader and less specialised set of people involved.

Similarly for the instrumental services, some concern purchases with minor consequences for the employees of the buying firm, whereas others concern major changes that may have an impact on the entire organisation (Box 5). In sum, services that have a major potential impact on the buying firm's customers (in case of component and semi-manufactured services) or on the buying firm itself and its internal clients (in case of semi-manufactured and instrumental services) are likely to demonstrate more explicitly defined interaction 'structures' than those that are of little impact.

Table 2.2 Propositions on objectives, capabilities and interfaces for the different service types

Type of service	Objectives	Critical supplier capabilities	Critical customer capabilities	Supplier representatives	Customer representatives
<i>Component services</i>	<ul style="list-style-type: none"> The service should fit with the customer's final offering 	<ul style="list-style-type: none"> Production capacity and quality Development capabilities (in case of specialised services) 	<ul style="list-style-type: none"> Translating/communicating final customer demands (on ongoing basis) Synchronising the supply of various service components 	<ul style="list-style-type: none"> Marketing representatives regarding the supplier's own service 'Downstream' specialists (knowledgeable of customer's final offering) 	<ul style="list-style-type: none"> Specialists regarding the service bought, and marketing representatives knowing the needs of the buyer's customer
<i>Semi-manufactured services</i>	<ul style="list-style-type: none"> The buying company should be able to transform the service in the desired way 	<ul style="list-style-type: none"> Production capacity and capability to maintain a stable quality Innovative capabilities (when used as an external expert and for strategic services) 	<ul style="list-style-type: none"> Translating final customer demands Optimising fit internal - supplier's operations Synchronising suitable contact interfaces between internal and the supplier's operations 	<ul style="list-style-type: none"> 'Production planning' and marketing representatives 	<ul style="list-style-type: none"> Production and quality representatives
<i>Instrumental services</i>	<ul style="list-style-type: none"> Service should affect customer's primary processes in desired way and Service should fit with important characteristics of primary processes 	<ul style="list-style-type: none"> Business development and innovation Business and service production design services 	<ul style="list-style-type: none"> 'Implementation' skills: understanding what fits when, how and for whom 	<ul style="list-style-type: none"> Product representatives, often including a team of consultants or process engineers 	<ul style="list-style-type: none"> Business development representatives and affected internal customers
<i>Consumption services</i>	<ul style="list-style-type: none"> The service should support various core processes 	<ul style="list-style-type: none"> Ability to supply the desired service and (if needed) adapt it to the specific situation of customer 	<ul style="list-style-type: none"> Translating/communicating internal customer demands (on ongoing basis) Follow up on performance and user satisfaction 	<ul style="list-style-type: none"> Marketing representatives 	<ul style="list-style-type: none"> Buyers and internal customers

This observation ties in with studies carried out in the field of Organizational Buying Behavior (OBB), which have typically investigated variation in the organisation and execution of the initial stages of organisational buying behaviour in relation to of the *perceived risk* of a specific purchase [Johnston and Bonoma, 1981; McQuiston, 1989]. Perceived risk is normally seen as the product of *consequences* (like financial magnitude, the effects disruption of primary processes, significance for final customer satisfaction) and *uncertainty* or the chances that a particular outcome or performance may not be achieved [Bauer, 1960].

We thus expect patterns of interaction to surface most clearly for those services that are of associated with a high degree of perceived risk, or high potential impact. For services with a limited impact, interaction patterns will not be very much differentiated¹⁷.

In practice, many purchasing portfolios make a distinction between strategic purchase items with a high perceived risk or impact for the buying firm, given a high purchase value (price) and high uncertainty (i.e. due to limited availability), versus routine purchase items with a low risk due to low purchase value and low uncertainty [Kraljic, 1983; Van Weele, 2005]. A way to combine our proposed basic classification with the level of impact or perceived risk of a service would be to distinguish business services on the basis of their possible direct impact on internal users and importance to downstream customers (Figure 2.1).

All those business services that do not have a high impact on internal customers or on external customers would fall into the lower left quadrant. In other words: for those ‘minor’ services, we do not expect to find distinct interactions patterns, whether they are instrumental, semi-manufactured or component services. This quadrant would probably also include most if not all consumption services. Considering our observations on consumption services, the services from Box 7 are usually not very advanced or highly important. There may be occasional exceptions, though, such as in the case of a pharmaceutical company that once found out that in order to attract more personnel, its facility management services (such as catering) could be a factor in differentiating itself versus other prospective employers.

Major component and instrumental services would fall into the lower right and upper left quadrant respectively, for the reasons discussed earlier. Semi-manufactures would often fall into the upper right quadrant of the matrix as

¹⁷ We prefer to use the term ‘impact’ since in the different literatures ‘risk’ is not always defined the same; either it is defined as uncertainty or as a product of uncertainty times consequences. ‘Impact’ also better captures the potential positive effects that a particular service purchase may have, as opposed to only potential negative effects.

they require more ‘production’ efforts from the internal actors than component services, and have more direct impact on final customers than purely instrumental services.

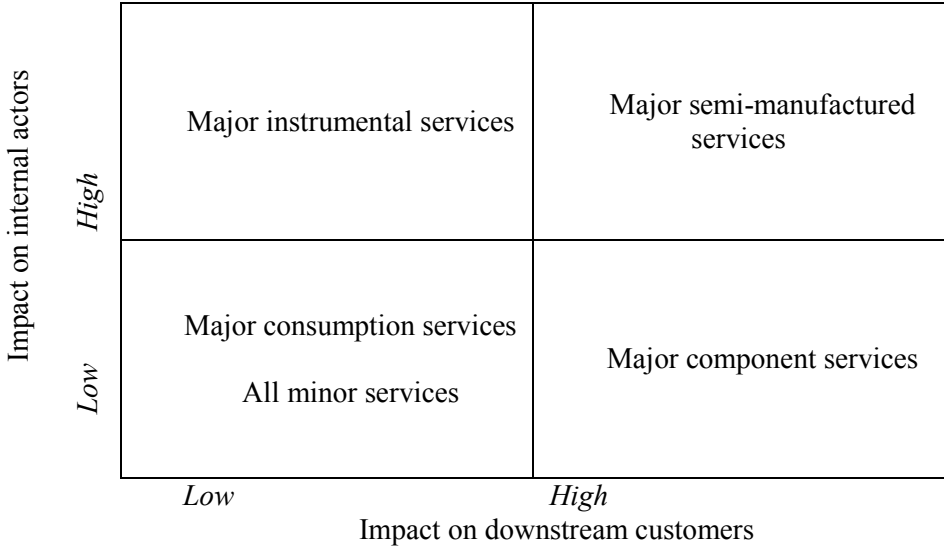


Figure 2.1 *Impact-based classification of business services*

2.7 CONCLUSIONS

In this paper, we have considered some specific aspects of the process of buying and exchanging business services. We have focused on the everyday production and consumption of services as opposed to the initial purchasing and negotiation phases. Different objectives will be emphasised as a result of how the buying company uses the service, resulting in different requirements on the interaction between buyer and supplier.

We propose that based on the type of usage, services can be labelled as components, semi-manufactures, instruments or consumables. Our exploratory studies support the notion that different objectives would be emphasised for the four types of services, and furthermore indicated variation with regard to the required buyer and supplier capabilities and the number and type of representatives involved. Furthermore, we found that these objectives and requirements for organisational resources were more explicitly defined and designed for services with a more substantial impact on the buying firm and its customers.

The findings from the exploratory studies provide initial support for our usage-based classification of business services, as it seems to help explain

differentiated buyer-seller interaction related to exchanging different types of business services.

2.7.1 Theoretical contributions

While existing research in the field of purchasing and supply management has hardly addressed aspects of ongoing service production and delivery, our research shifts the focus specifically to activities and resources that support these processes. Our application-based classification furthermore establishes a connection between the purchasing process and the overall business processes of the buying firm, which according to Carr and Pearson [1999], Shin et al. [2002] and Van Weele [2005] is one of the most significant research areas.

One particular advantage of this usage-based classification it adopts a buyer's perspective, enabling the study of how buyers deal with the large variety in services across all possible sourcing situations. As such, it enables the identification of similarities in the buyer-supplier interaction between services that are, in terms of its 'technical' content, of a different nature - such as when management consultancy and market research are both acquired as an instrumental service. Our suggested classification would thus help to integrate, compare and contrast hitherto relatively fragmented studies of buyer-supplier relations in business services.

2.7.2 Managerial implications

The overall implication of our classification is that for different services, the buying company should assess how they are applied. Subsequently, it is relevant for firms to consider what functional aspects are crucial and who are likely to become, or who *should be* involved and to what extent, in the purchasing decision process and in the interactions that take place after the decision has been made. Understanding and being able to manage the interaction with a supplier is just as important as being able to specify and contract the desired service. For suppliers, the implication is that they should analyse how each individual customer applies their service, in order to address the right issues and people in its marketing, sales and exchange processes with the customer.

More specifically, the classification can help buying firms to go beyond the more classical, content-based segmentations which have been extensively adopted in practice. Within the overall sourcing process, category management has typically been set up to deal with groups of business services with a similar 'technical' origin (i.e. ICT or marketing). Typically, most firms do not aggregate and group their purchased business services at a higher, more strategic level. This is the same as, for example, deciding on separate sourcing strategies for electronic and mechanical components, just because of their

inherent technical differences. Technical content alone, however, does not determine the appropriate sourcing strategy or, more specifically, functional interaction: one and the same business service, depending on the way the buying company applies it, can be any of the four types – such as cleaning services for the planes (semi-manufactured service) or the offices (consumption service) of an airline company.

Adopting our classification would enable companies to learn across categories, since the four groups (components, semi-manufactures, instruments and consumables) have a scope that is sufficiently broad to capture the wide variety of business services yet, at the same time, sufficiently specific to provide meaningful distinctions between different services.

We do not intend, however, to argue that knowledge of individual (technical) features of specific services would be irrelevant. The individual or team responsible for buying for instance accounting, cleaning, or transportation services needs to understand the service and the supplier(s) they are buying from. We merely argue that, given its strategic nature, a usage-based classification of business services should be used in conjunction with such a more fine-grained, technical classification.

Finally, the classification could also be used in a more dynamic way by considering the possibilities to change the conception of a particular service within a given organisation. For example, think of a university traditionally conceiving of its facility management services such as (outsourced) on-site catering as purely consumption services. By starting to consider these services more as component services that may differentiate one university versus the other in terms of attractiveness to students, the university may start to explore new ways of selecting and interacting with these particular suppliers.

2.7.3 Limitations and further research

Our classification may be subject to several criticisms. The first criticism may be that the classification is indeterminate; different services do not automatically belong to a specific category. For example: are marketing communication services like TV-commercials or newspaper advertisements being delivered to end customers unaltered, or should the involvement of the buying company with regard to the content of the message or the target audience be considered as alterations to the service being provided (as a result of which they would be classified as semi-manufactured services)? Similar difficulties can arise when distinguishing between instrumental and consumption services: when can a service be considered part of the primary process and when not? However, we believe that the decision rules presented earlier takes away most of the ambiguity. Furthermore, we believe this element

of judgment if not choice in applying the classification is an asset rather than a liability, as discussed under the managerial implications.

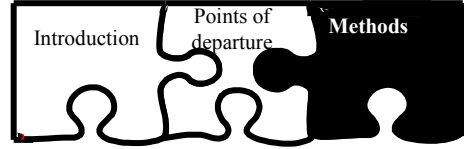
Another criticism might be that the independent variable does not fully explain what interaction patterns occur. We contend that the differences in application have a significant impact on interaction patterns, but this is obviously not to say that other variables have no impact on buyer-supplier interaction patterns. One of the variables that can be used in combination with our classification is the potential impact of the service, as explored in the Discussion section. Subsequent research should seek to control for those other possible sources of variation to establish the exact impact that the proposed classification has on buyer-supplier interaction in business services. Further research could also seek to develop a more complete understanding of the interaction characteristics that are affected by the type of application of a business service, such as more process-related characteristics as opposed to the primarily 'structural' characteristics examined in this exploratory study.

Chapter 3 Research design and methods

ABSTRACT

This chapter is concerned with the methodological aspects of conducting the research for this dissertation.

In this research, a case research approach is used. The research objective is to build and eventually test theory on effective buyer-seller interaction during ongoing service exchange. The classification of business services presented in Chapter 2 and the initial findings regarding variation in interaction provide the starting point for the case research. Traditionally, the use of case studies has been deemed most appropriate for exploration. After explaining how the case research strategy fits the purposes of exploration, theory development and theory testing, the research methods and instruments employed are discussed.



3.1 RESEARCH METHODS

Research *methodology* is concerned with the analysis of how to conduct research, rather than with the methods or techniques employed when carrying out research [Easton, 1995; Ramsay, 1998]. Easton [1995] notes that, although most researchers are not as concerned with the how of doing research as with the what, the methodology used strongly influences the output of the research process and its interpretation. Similarly, Ramsay [1998, p. 170] points out that researchers need to consider the methodological underpinnings of their work, since it directs their choice of research techniques, and clarifies the philosophical limitations to the interpretations of their research results and the reliability of the generalisations made. Thus, which research methods are appropriate can only be determined after the researcher has made explicit his/her philosophical stance.

In this research, a critical realist perspective is adopted [Easton, 1995]. In general, realists believe that there is a reality 'out there' which exists and can be discovered and understood. Hunt [1990, as in Easton, 1995] states that according to critical realism, the task for science is to use its methods to improve perceptual measurement processes to separate illusion from reality and consequently develop the most accurate possible description and understanding of reality. The reality in this study is what goes on between buyers and sellers of business services during the period after the contract has been signed. This period is referred to as the ongoing service exchange.

Easton [1995] presents a taxonomy of methods and argues that decisions need to be made regarding the overall aims and objectives of the research, the context of the research (field involvement or not), and whether there is communication between the researcher and the researched. In this research, the overall aim is to build and eventually test theory regarding effective interaction between buyers and sellers of business services. This requires both description and the establishment of causality. The research context is the field of purchasing and supply management practice. Finally, there should be a large degree of communication between the researcher and practitioners involved with buying and selling business services in order to develop accurate descriptions of what goes on in the interaction between buyers and sellers of business services. The methodologies that involve communication with respondents can be further differentiated based on the extent of involvement of the researcher: low, as in the case of conducting a large-scale survey using hardcopy or electronic questionnaires, or high, as is the case with qualitative data collection methods. This research mostly tends to the latter, in order to obtain a thorough understanding of how buyers and sellers of business services interact during the period of ongoing service exchange.

The research method adopted here is case research. We adopt the definition of Dul and Hak [2007, p. 17], who define case studies as follows: “A case study is a study in which (a) one case (single case study) or a small number of cases (comparative case study) in their real life context are selected and (b) scores obtained from these cases are analysed in a qualitative manner. An empirical inquiry of a single instance (single case study) or small number of instances (comparative case study) of the object of study as it occurs in its real life context.” The reasons for selecting the case research approach is that the object of this research, i.e. interaction between buyers and sellers of business services, is a dynamic phenomenon with complex links across organisational boundaries, which can best be studied in its real life context [Yin, 2003]. Dubois and Araujo [2004] deem case studies very suitable for studies in which interactions and relationships form the basic units of analysis.

Easton [2007] argues that case research allows the researcher the opportunity to tease out and disentangle a complex set of factors and relationships. Dubois and Araujo [2004] argue that studying such phenomena require collecting multiple forms of data which are usually not easy to aggregate. Such data collection cannot be performed through for example large-scale surveys. Matthyssens and Vandenbempt [2003] in this respect talk about studying complex, wide-ranging theories with many interdependencies, which marketing scientists have tended to study relying on a single (often quantitative) data collection method. Woodside and Wilson [2003] state that such studies are often based on a single informant without attempting to match and compare his person’s answers with answers from another person involved

in the particular decisions under study. Bonoma [1985] emphasises the fact that case studies rely on the use and triangulation of multiple sources of data: he states that this is a main strength of this approach, which makes it particularly suitable for research on context-dependent phenomena. Although most of these scholars deem both qualitative and quantitative data collection methods as suitable techniques for case studies, some definitions specify qualitative data as a characteristic of case studies. Note however that Dul and Hak [2007] define case studies in a way which does not include statements on data collection or measurement techniques. By that, they make explicit that the data collected and analysed can in their view be both qualitative and quantitative. In line with this view, we also draw on both quantitative and qualitative data to investigate ongoing buyer-seller interaction in our study.

Concerning the objectives of case research, the case study has traditionally been viewed primarily as a means for exploring relatively unknown phenomena, which is particularly appropriate when one is trying to understand phenomena that have an important social element and comprise “how” and “why”-questions [Yin, 2003]. Such questions can, according to Easton [2007], be considered explanatory. More recently, also Edmondson and McManus [2007, as in Eisenhardt and Graebner, 2007] stressed that theory-building research that relies on case studies are specifically suitable for addressing research questions regarding the ‘how’ and ‘why’ in unexplored areas.

Many authors argue that case studies solely rely on qualitative data collection methods, which by definition makes case studies exploratory. Johnston et al. [1999] however point out that it is not the qualitative or quantitative nature of case research that makes it exploratory or confirmatory: it is the nature of the research question and the rigorous application of the appropriate methodology. Case studies use both quantitative and qualitative methodologies to help the researcher comprehend phenomena as well as why certain characteristics or effects occur or do not occur [Meredith, 1998]. From a managerial perspective, the interpretative character of case research allows for very context-specific managerial recommendations, which lead to more actionable prescriptions [Matthyssens and Vandembemt, 2003]. This echoes Johnston et al. [1999] who claim that from an organisational change perspective, case research may be more influential than the findings of quantitative research attempts.

In the period 2005-2007, various members of the department Management of Technology and Innovation (including myself) undertook the joint project of writing a book on case research methodology, under editorial supervision of Jan Dul and Tony Hak. The contributors to this book adopt a different and rather novel perspective on case research. Succinctly speaking, Dul and Hak [2007] deem case studies an appropriate research strategy not only for exploration, but also for theory building and theory testing. Exploration refers

to the process of creatively combining information from various sources (both theoretical and empirical) to (re)formulate propositions. Theory building research is explicitly designed to gather empirical evidence for the formulation of propositions. Finally, theory testing research is intended to test the formulated propositions.

This dissertation comprises all three types of case research: exploration, theory building and theory testing. Building on Gladwin [1989] and Howard and Morgenroth [1968], Woodside and Wilson [2003] argue that the quality of a case study research study may increase dramatically when the study is designed to include theory building and theory testing cases. Johnston et al. [1999] argue that by taking a more systematic and theory-based approach to case study research, case studies may provide a useful, yet underdeveloped, tool to investigate industrial marketing phenomena.

The three different types of case studies will be elaborated on when explaining the design of this study in the next section.

3.2 RESEARCH DESIGN

In this section, the research design is explained. Firstly, starting from the research questions in Chapter 1, the key variables and the presumed relationships that are of interest to this research are defined. Miles and Huberman [1994] propose to develop a conceptual framework, which specifies the key variables to be studied and the presumed relationships between these variables (i.e. a ‘tight’ design). Secondly, case selection is discussed. Finally, the data collection methods are presented.

3.2.1 Constructing a tentative theoretical framework

In order to construct a tentative theoretical framework, the research questions are stated once more:

What does effective interaction for various kinds of business services look like?

- *What existing classifications of (business) services exist? Can these classifications be used to and are they useful for differentiating between various kinds of services given our objective? If not, what business service characteristic drives effective variation in ongoing buyer-supplier interaction from the buyer’s perspective?*
- *What are the key characteristics to describe this variation in interaction?*
- *What does effective buyer-seller interaction look like for different types of services? Is this interaction consistent across buying companies (i.e. is variation in interaction systematic)? To what extent are the interactions associated with a specific type of service distinct?*
- *When is interaction effective? (How) is systematic variation related to success (what is success)?*

These research questions give some indication of the key variables for our framework. On the one hand, it is the classification of business services presented in Chapter 2. On the other hand, it is interaction. A final variable which is important in this research relates to performance, and the performance measure selected here is success of the ongoing service exchange (thus of the continuous dealings between buyer and seller during the contract period).

The classification has been dealt with extensively in the previous chapter, and will therefore not be elaborated in much detail here. It is important to note however that we specifically talk about a classification, and not about a typology, which is a word that many fellow researchers use when they first see the classification. A classification (or taxonomy¹⁸) is a scheme that allocates phenomena (in this case: services) to one of the (in this case: four) mutually exclusive and exhaustive categories based on a set of decision rules [Doty and Glick, 1994]. A typology on the other hand identifies “multiple ideal types, each of which represents a unique combination of the organisational attributes that are believed to determine the relevant outcome(s)” [Doty and Glick, 1994, p. 232]. Mintzberg [1980] discusses organisational *configurations*, which refer to some type of logical clustering of elements in search for harmony in its internal processes and with its environment.

According to these definitions, many existing typologies are actually classifications, like for example Woodward’s [1965], which allows for the classification of organisations in one of three (ordinal) categories, but does not specify ‘ideal’ types of organisations. Furthermore, classifications are not theories, since they do not define key variables along with relationships among these key variables. Thus, the conceptual contribution of Wynstra et al. [2006] is not a theoretical contribution in itself. Rather, it aids in building theory, since classification schemes are the primary means for organising phenomena under study [Hunt, 1999, p. 189]. Hunt [1999] explains that generating useful classification schemes is frequently one of the first steps in theorising. It should be noted here that the classification is deductive in nature. In other words: it was developed before Wynstra et al. [2006] analysed any specific set of data. This indicates that the authors beforehand had knowledge about which characteristics would be relevant for classifying services, as well as about the

¹⁸ The difference between classifications and taxonomies is that the latter draws on hierarchical decision rules for allocating phenomena to categories. Classifications usually use one characteristic of the phenomenon for the allocation process. Looking specifically at the decision rules of Wynstra et al. [2006] (does the service remain inside the buying company or does it move downstream, and then -in each of these two categories- what is it used for), their classification of business services is really a taxonomy.

relationship between these characteristics and other concepts of the theory (derived from similar studies on interaction between buyers and sellers of industrial products [Håkansson, 1982]). Finally, note that in terms of the classification, the type of service can be considered the independent variable, whereas the interaction pattern associated with that type of service is considered the dependent variable.

A typology in contrast *can* be considered a theory, since it meets three primary criteria deemed important by theory-building experts [Doty and Glick, 1994, p. 233-234]. Firstly, it identifies multiple first-order constructs that together make up a second-order construct and specifies a relationship between the second-order construct and a certain desired outcome. Secondly, our typology highlights the internal consistency among the dimensions of interaction and explains why these dimensions jointly result in the desired level of success in the ongoing service exchange. Finally, the specified relationships are falsifiable. By adding to and digging deeper into the classification, the classification can eventually be developed into a typology. This requires development of the second order construct (here: 'ideal' or effective types of buyer-seller interaction) and establishing a relationship between these effective types and performance. Note that here the interaction pattern is the independent variable, whereas success is the dependent variable.

Thus: the classification of business services and the initial conceptualisation of interaction in terms of the key objectives, the buyer-seller interface and buyer and supplier capabilities (Chapter 2) served as the starting point for this research. As a first step in this study, this conceptualisation was expanded to include process-related dimensions (which was already pointed out by Wynstra et al. [2006] as a step towards further development of the research). This extension is important, since the IMP Group has consistently stressed the importance of studying the interactive processes between buyers and sellers. Furthermore, for the purpose of making claims about the relative performance of various patterns of interaction, success was added as a key variable. Finally, in line with arguments presented by Wynstra et al. [2006], the concept of buyer-perceived risk was included in the theoretical framework as a control variable. Johnston and Lewin [1996] conclude that much of the variation in organisational buying behaviour can be related to the level of perceived risk associated with a particular purchase situation. It was deemed important to include this variable in the study, since it could possibly help to explain why certain interaction patterns do not occur, or do not occur as strongly as we would expect. The theoretical framework is presented in Figure 3.1.

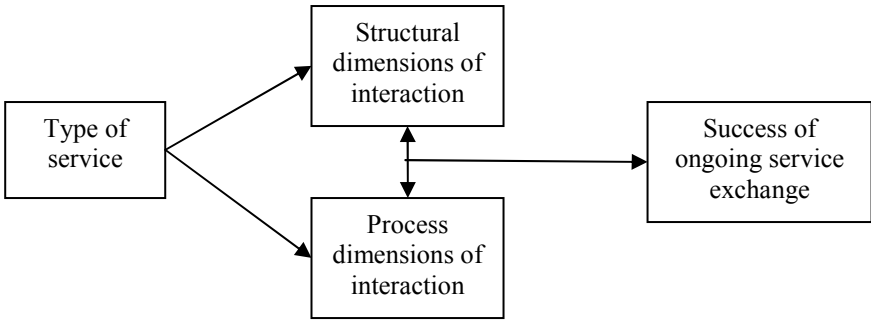


Figure 3.1 Simplified presentation of theoretical framework

3.2.2 Case selection

Case selection decisions depend on the hypotheses that are being researched [Johnston et al., 1999]. Bonoma [1985] explains that case research usually moves from being exploratory to being more confirmatory (prediction). Finally, the researcher becomes interested only in looking at extreme cases to determine limitations of generalisations (disconfirmation). Easton [2007] argues that, if a defensible causal explanation has been produced in one case, the constituents of that explanation provide a basis for developing theory beyond that case. The number of cases depends on the relationship of the current state of knowledge with existing theory: when there is still little theory, one case can be enough to begin the theory building process [Easton, 2007, p. 37]. When there is well-articulated theory, certain aspects of that theory may be investigated in detail in a single case. Easton [2007] states that if the objective is to advance theory, a comparative case study on a limited number of elements of the theory is most suitable. Earlier, Johnston et al. [1999] already stated that evidence from multiple case-designs are more compelling and make the overall study more robust.

In this study, the approach to case selection has been somewhat different. In a one-off study, we have investigated the presence of systematic variation in interaction for forty services (belonging to different classes in the classification) at ten buying companies coming from different industries. The reason for selecting such a large number of companies (and thus cases) is that we sought to identify systematic variation in interaction. In order to determine whether variation observed was systematic, a reasonable number of cases were required. Furthermore, since buyer-seller interaction was expected to be independent of the context in terms of for example the type of industry, we intentionally selected companies that varied in terms of their activities (manufacturing/ providing services), their customers and the industry in which they operated. Case selection was thus parallel in nature rather than sequential

(i.e. conducting a limited number of cases, interpreting the findings, and then selecting some other cases either to replicate or disconfirm findings, et cetera).

A trade-off was made between inviting a large number of buying companies and inviting a more limited number of buying companies and also including their suppliers in the research. It was decided not to collect data *at* suppliers in this study, since we deemed it more realistic to determine clear patterns building on data obtained from one data source (data *on* the suppliers was however collected from the buying companies). Furthermore, from a practical point of view, including suppliers in data collection was not feasible in each individual case: quite a few buying companies indicated to foresee difficulties with trying to get the suppliers to cooperate. Thus, actually, it is a one-sided view on interaction patterns that is studied here.

The presence of systematic variation in interaction for different types of services was thus studied by means of case research. A case is a period of ongoing service exchange for a specific type of service. A case study is a study of the ongoing service exchange for the four different types of services at one buying company. By selecting each of the four service types at each buying company, possible firm-level factors were kept constant. This is in line with Voss et al. [2002], who point out that it is important to also define what factors should be held constant across the sample. Thus, an embedded design is adopted, in which theoretical selection criteria are used both at the level of the individual case and at the level of the company. Consequently, two units of analysis were identified: the case and the buying organisation.

To contrast the ‘convenience’ sampling of cases to support the initial framework [Wynstra et al., 2006], theoretical selection techniques were used at the level of the buying organisation. As was just mentioned, both service providers and manufacturers were included: the first because their more profound experience with services is expected to make them more advanced at obtaining services from external providers, the latter because they are increasingly being confronted with buying services. Companies were furthermore selected on selection criteria related to the type of customers of these buying companies (business customers versus consumers) and the type of production employed by these buying companies (routine or professional service provision; unit, series or process-based manufacturing). The first dimension was selected because it relates to the extent to which the service is standardised. Consumer needs are less explicit and of larger variety, and are thus more difficult to identify [Jackson and Cooper, 1988] and reconcile. As a result, the buying company relies more strongly on “standardised” offerings. In contrast, business customers are more strongly involved in determining exactly what is being supplied, thereby increasing the importance of accurate management of these customers’ needs and wishes by the buying company. Buying companies will then look for more specialised suppliers, and the level

of customisation of the service provider's offering is expected to be higher. The second dimension is derived from the studies conducted by the IMP Group, since these studies indicated that buying companies with differing production methods make use of different purchasing strategies and are confronted with different types of purchasing problems [Håkansson, 1982; Wynstra, 1998]. The different production methods are based on Woodward [1965], who identifies unit/project-, series- or process-based manufacturing; the distinction between routine and professional service providers is frequently made in extant literature [see for example Axelsson and Wynstra, 2002; Silvestro et al., 1992]¹⁹. As such, ten categories of buying companies can be identified (2x5).

The intention of this selection process for buying companies was not to obtain a sample which is representative for a whole population. In contrast, this selection strategy enables replication of our findings, as a result of which the domain to which the theory applies may be (further) developed. Note that this study is limited to companies that have activities in the Netherlands (although some operate on a European or global basis), since that simplifies the (time) efforts involved with data collection.

Ten buying companies agreed to participate (Table 3.1); background information on these companies is provided in Appendix A. The set of companies does not include series-based manufacturers with business customers (for example truck manufacturers) and process-based producers delivering to consumers (for example electricity companies). Such companies were approached, but found unable to participate in the study. Unit-based production for consumers (for example: a craftsman crafting a table for a specific consumer) was excluded from the set, since those organisations are expected to be too small to have a separate purchasing department and thus to have very sophisticated approaches to dealing with their customers throughout the contract period. The fact that we have multiple buying companies in each of the service providing categories is considered important, as we require a sufficient number of observations for component and semi-manufactured services, which are usually difficult to identify at manufacturing companies. Although more manufacturing companies would preferably have been included in our study, we do not consider the bias towards service providers

¹⁹ Silvestro et al. [1992] define mass (routine) services providers as companies with many consumer/ customer transactions involving a limited amount of contact time and limited customization; professional services are considered to be the opposite. They also identify an in-between form, which is called the service shop. However, since the service shop does not provide a distinct type of service, but a service, which resembles to a larger or lesser extent services on either end of the continuum, this form is not separately addressed in this study.

very problematic. The fact that the majority provides routine services is considered beneficial rather than problematic, since this is expected to enable the identification of regularities (systematic variation) more easily than in the case of professional services, which are highly customer-specific and thus characterised by variation in the service itself in addition to any variation in the interaction across different service types.

Table 3.1 Participating companies

Type of organisation		Type of customer	
		Consumers	Organisations
<i>Service provider</i>	<i>Routine</i>	<ul style="list-style-type: none"> ▪ Telecom company²⁰ ▪ Bank²⁰ ▪ Retail division of oil company 	<ul style="list-style-type: none"> ▪ Natural Gas Transportation company ▪ Oil and Chemical Storage company
	<i>Professional</i>	<ul style="list-style-type: none"> ▪ Employment Insurance Agency 	<ul style="list-style-type: none"> ▪ Facility Services Provider
<i>Manufacturers</i>	<i>Unit/project</i>		<ul style="list-style-type: none"> ▪ Construction Company
	<i>Series</i>	<ul style="list-style-type: none"> ▪ Fast Moving Consumer Goods company 	
	<i>Process</i>		

In consultation with the researchers, each company selected four services to be studied irrespective of the value of the dependent variable. We chose for selecting independent of the value of the dependent variable since we wanted to prevent bias in our sample as a result of selecting cases which buying companies deem successful²¹. Fiss [2007] argues for first identifying the sample (which varies both with regard to the independent and the dependent variable), and then during the analysis selecting on the (in)dependent variable. These cases have been listed in Table 3.2, together with the names of the respective buying companies, the type of service, and the functions of the people interviewed.

²⁰ Both the telecom company and the bank deliver to both business customers and consumers. Primarily however one would think of consumers as their customers. For the purpose of this study therefore they were classified as delivering to consumers only. Consequently, the (component and semi-manufactured) services selected for the study are services targeted at consumers.

²¹ Although we specifically asked the companies to select services irrespective of the value of the dependent variable, we acknowledge that, since companies like to make a good impression on the outside world, there may still be a bias towards more successful service purchases.

Table 3.2 Services, companies and informants

	Service	Company	Informants
Component	Call centre services	TEL	1. Category Manager Marketing & Call Centre Services
	Arranging infrastructure at customer locations	TEL	2. Category Manager Construction & Engineering
	Pension fund administration	EIA	3. Purchaser 4. Project leader migration pension fund administration
	Subcontractors for glass cleaning activities	FSP	5. Manager Procurement 6. Business Unit Manager Specialist Cleaning Techniques (south region)
Semi-manufactured	Rental of aerial working platforms	FSP	7. Procurement Manager 8. Business Unit Manager Special Cleaning Services
	Bank hall equipment	BAN	9. Purchaser 10. Project Manager Cards and Circulating Currency
	Promotional campaigns	RDO	11. Procurement Executive 12. Manager Communications BTL & Sales Promotions
	Forecourt maintenance	RDO	13. European Procurement Manager Site Maintenance 14. Senior Engineer European region A
	Promotion/ premiums	BAN	15. Purchaser
	Payment handling services	EIA	16. Senior Buyer Facilities 17. Manager Cash Management
	Drilling services	FEE	18. Supply Chain Engineer (purchasing) 19. Drilling Development Team Leader
	Industrial cleaning services	OCS	20. Commodity Buyer/ Account Manager 21. Chief Terminal Premises 22. Team leader Tank cleaning 23. Superintendent Dayshift Terminal A
	Cleaning for delivery	CON	24. Purchasing Manager Business Unit A 25. Head of Purchasing Business Unit A, region 1
Instrumental	IT outsourcing	TEL	26. Manager Group Category ICT 27. Chief Information Officer 28. Former Chief Information Officer Division Fixed
	Marketing services	TEL	29. Category Manager Marketing & Call Centre Services 30. Category Purchaser Marketing Communications 31. Category Purchaser
	Office automation	EIA	32. Senior Buyer ICT 33. Project Leader European Tender Office Automation 34. Portfolio Manager Work Unit Services
	PR Agency	FSP	35. Manager Marketing
	Training and education	BAN	36. Purchaser 37. Representative of company academy
	Training and education	CON	38. Head corporate education/ Director Corporate Business School

Table 3.2 Continued

	Engineering and construction services	FEE	39. Supply Chain Engineer 40. Senior Project Engineer
	Managing stock of piping materials	FEE	41. Supply Chain Engineer 42. Mechanical Engineer Piping
	Extraction and storage of condensate	NGT	43. Purchaser 44. Representative Operations department
	Project management services	RDO	45. Retail Category Manager Design & Construction 46. EU Construction Focal Point
	Consumer panel	FMG	47. Consumer and Market Insight Manager 48. Manager Trade Marketing department
Consumption	Temporary labour	TEL	49. Manager Procurement Professional, Financial & HR Services 50. Human Resources representative call centre
	Cables and connections for work spaces	EIA	51. Senior Buyer 52. Service Manager
	Decontamination of soil	NGT	53. Purchaser 54. Operations department
	Steel conservation	NGT	55. Purchaser 56. Project Manager Steel Conservation for Maintenance Purposes
	Temporary IT labour	NGT	57. Purchasing Manager
	Travel agent	FSP	58. Procurement Manager 59. Secretary
	Building maintenance	BAN	60. Purchaser 61. Manager Owner Maintenance & Projects
	Office cleaning	BAN	62. Purchaser 63. Product Manager m ² , Interior Design & Maintenance
	e-HRM system	OCS	64. Purchaser 65. Manager Human Resources
	Security	OCS	66. Purchaser 67. Assistant Terminal Manager terminal A
	Office cleaning	RDO	68. Contracting & Procurement Consultant 69. Office Manager
	Gas and electricity	OCS	70. Buyer Projects & Services 71. Manager Terminal A 72. Manager Terminal B
	Waste management	FEE	73. Supply Chain Engineer 74. Representative Waste Management department
	Interior and exterior design of lease cars	CON	75. Project Leader Corporate Strategic Sourcing 76. Representative Corporate Commercial department 77. Head Facility service building A
	Office cleaning	CON	78. Office manager/ Head Civil Services building B 79. Representative Corporate Facility Management department
Office cleaning	FMG	80. Manager Facilities and Services Business Unit A	

A closer look at Table 3.2 reveals that the forty services are not equally distributed across the four classes in the classification. The reasons for not having equal numbers of services of each service type are twofold: 1) some companies invited us to study five rather than four services (thus: two services of one type), for example because these services has just been subject to a major change in terms of the buyer-seller collaboration; and 2) during data collection and especially during analysis, some of the services had to be reclassified. Because the study at each individual company is quite extensive and time- and resource-consuming, we did not want to put the burden of additional data collection on these companies. We therefore decided to reclassify services when needed and maintain our original data set.

3.2.3 Case protocol and data collection methods

First, companies were invited by means of a formal letter to the Chief Procurement Office, the Purchasing Manager or Purchasing Director, which included a case protocol in which the purpose of the study and the requirements and benefits for both parties involved were explained. A case protocol enhances the reliability of the research since it creates transparency regarding the approach used, thereby making the research repeatable [Yin, 2003]. The reasons for approaching the people mentioned are that these people can provide the management support for the research being conducted and were deemed most knowledgeable about which people to interview. Voss et al. [2002] refer to these people as prime contacts.

About fifteen companies were invited to participate in this research; ten responded positively (Table 3.1). Subsequently, an exploratory interview with the prime contact was set up to identify the services to be studied and the people to be interviewed.

The subsequent case study would be of medium extensiveness, involving a limited amount of data collection and covering a short period of time. Data was collected mainly by means of interviews. For each of the services selected, two to three in-depth interviews of 1.5 to 2 hours each were conducted with purchasers (focusing predominantly on the purchasing process) and with contract owners and/ or users, who were deemed to be most knowledgeable on what happened after the purchase). In most companies, the purchasers involved were identified first. They then identified the other informant(s). Interviewing multiple functional representatives enables data source triangulation [Yin, 2003], which enhances construct validity. Consequently, the findings are less prone to error as they would have been had the data been collected from a single informant [Hodgkinson, 1997]. The use of multiple informant techniques addresses the problem of dependency on single informants, yet raise the question of how to reconcile conflicting

answers from various respondents [Johnston et al., 1999]. This point will be elaborated in the analysis section.

The interviews were semi-structured; semi-structured interviews allow for the collection of a large amount and wide variety of information while at the same time safeguarding the coverage of all topics. A standardised list of interview questions was used (thereby enhancing reliability [Yin, 2003]), which is based on the questionnaires used in similar studies conducted by the Industrial Marketing and Purchasing (IMP) Group [Håkansson, 1982], and which addressed topics like the characteristics of the buying and supplying company involved, the characteristics of the service being exchanged, the purchase process and the period after the contract was signed (ongoing service exchange) (Appendix B). Furthermore, buying companies were asked about the supplier's representatives involved, actions/ behaviours, viewpoints, et cetera; however, the suppliers themselves have not been involved in data collection. The complete study comprised 78 interviews (80 informants, see Appendix C), three of which were duo-interviews. Most of the interviews were retrospective in nature [Miller et al., 1997], addressing ongoing service exchanges for services for which the contracts had recently been renewed. Other interviews were contemporary with the periods of ongoing service exchange.

No recording instruments were used during the interviews: taping is a benefit when the exactness of what people have said (e.g. quotes) is important [Yin, 2003]. In this study, trying to interpret what people were trying to say [Stuart et al., 2002] is sufficient, and consequently, the benefits of taping did not outweigh the disadvantages of the time-consuming character of writing transcripts, the temptation to postpone the writing of transcripts, the temptation to pay less attention during the interview because there is a back-up on tape, and the fact that the interviewee might feel uncomfortable with the presence of a tape recorder [Voss et al., 2002].

An extensive report was made of each interview, which was sent back to the interviewees for verification [Danneels, 2002; i.e. member checks Hirschman, 1986; Lincoln and Guba, 1985]. Johnston et al. [1999] argue that subjecting findings to key individuals in the organisations under study to seek their responses is useful for two reasons: 1) misunderstandings may be identified and clarified; and 2) results may obtain a higher degree of validity. Yin [2003] also notes that verifying draft versions of interviews and case reports contributes to construct validity. The approved reports of the individual interviewees were then brought together into one description of the service purchase, which was again verified with the individual interviewees and the prime contact in order to eliminate any inconsistencies and to provide further clarification if necessary. Furthermore, at two points in time (immediately after all data collection had finished, and a year after that), the results obtained

were presented to and discussed with the buying companies' prime contacts during a round table meeting. This ensured an appropriate interpretation of results and increased the possibilities for additional data collection. The round table discussions were also used to focus the ongoing research on the most relevant/ interesting issues. Danneels [2002] suggests that making presentations to the participating firms is a useful way for verifying the findings of the study. Finally, the interview results were also discussed within the research team, who all gave input during data collection and analysis²².

The interviews were complemented with other sources of information (documents, websites, et cetera), thereby providing opportunities for triangulation [Dubois and Gadde, 2002; Ramsay, 1998; Yin, 2003]. Johnston et al. [1999] suggests that by investigating a company's historical documents and conducting in-depth interviews, case research is highly suited for questions addressing causality. Putting these data together results in rich descriptions, which helps to understand why things happened as they did.

Finally, self-administered questionnaires were used to measure success and risk. Success was evaluated by asking the relevant informants (the purchasers and contract owners/ internal customers involved) indicate on a five-point scale their perceptions of the ongoing service exchange process and the outcome of the service exchange process relative to their expectations in advance of the start of the contract period (level of success associated with the ongoing service exchange). The questions, which concerned different aspects of success, were not weighed in advance of the measurements, nor did we ask respondents to weigh the individual questions (as is done in more advanced measurements of service quality like the SERVQUAL model [Parasuraman et al., 1985]). The questions relating to success were derived from questions used in interviews conducted by the IMP Group [Håkansson, 1982] for their study of interaction between buyers and sellers of industrial goods (for example: Critical issues that arose have been resolved satisfactory by the supplier). The questions regarding risk, which is considered a function of importance, complexity and novelty (the latter two determine uncertainty), are developed from existing literature (see for example McQuiston [1989] on operationalisations of these concepts) (see Appendix D). It should be mentioned here that the purpose of the self-administered questionnaires was to complement/ verify the data obtained from the interviews, rather than to have an advanced tool for measuring risk and success which would be highly important when aiming to test theory. The questionnaires were thus evaluated alongside the more detailed investigations through the interviews [Johnston et al., 1999].

²² The research team consisted of one principal researcher and the advisors of this doctoral dissertation.

3.3 RESEARCH PROCESS

Hereafter, the research process is discussed. We explain how we conducted different analyses on various subsets of the total data-set, as well as which cases we used in which steps of this research. The research process is elaborated for each of the three different phases of this research: exploration, theory building and theory testing (see also Figure 3.2).

As is illustrated in the discussion the different phases of this research, an iterative approach to case research was adopted. Dubois and Gadde [2002] propose an approach called ‘systematic combining’, in which the theoretical framework, the empirical fieldwork and the case analysis evolve simultaneously. Systematic combining can be discussed in terms of two activities: 1) matching theory and reality; and 2) direction and redirection. It concerns a continuous process of going back and forth between theory and practice: on the one hand, the initial conceptual framework is developed in the light of what is observed in practice; on the other hand, the evolving framework directs the search for data. Similarly, Melnyk and Handfield [1998] state that with theory-driven empirical research, theories are viewed essentially as work-in-progress. Furthermore, Verschuren [2003, in Easton 2007] noted that case research is a process of iterative-parallel research which “implies a continuous moving back and forth between the diverse stages of the research project”.

Systematic combining as such relies more strongly on theory than induction, since the theory is not built from scratch (as is the case in grounded theory) [Dubois and Gadde, 2002]. Rather, theory is built by combining data with grounding in existing theories. Orton [1997] refers to this idea as iterative grounded theory, Danneels [2002] builds on Burawoy [1991] and calls it the extended case method.

At the same time, systematic combining is even more distant from deduction than induction, since findings during the research process may lead to new areas of attention. Consequently, new theory may be added. Thus, systematic combining builds theory based on direction and redirection, rather than on following through on a-priori developed testable hypotheses. It is important to note however that the case study method adopted here requires theory to be consulted prior to data collection. Johnston et al. [1999] state that when research hypotheses do not drive the research, findings can only be thought of as exploratory and/ or descriptive.

Hereafter, the three phases of this research are explained in more detail. Please refer to Figure 3.2 for an illustration of the various steps undertaken in this research.

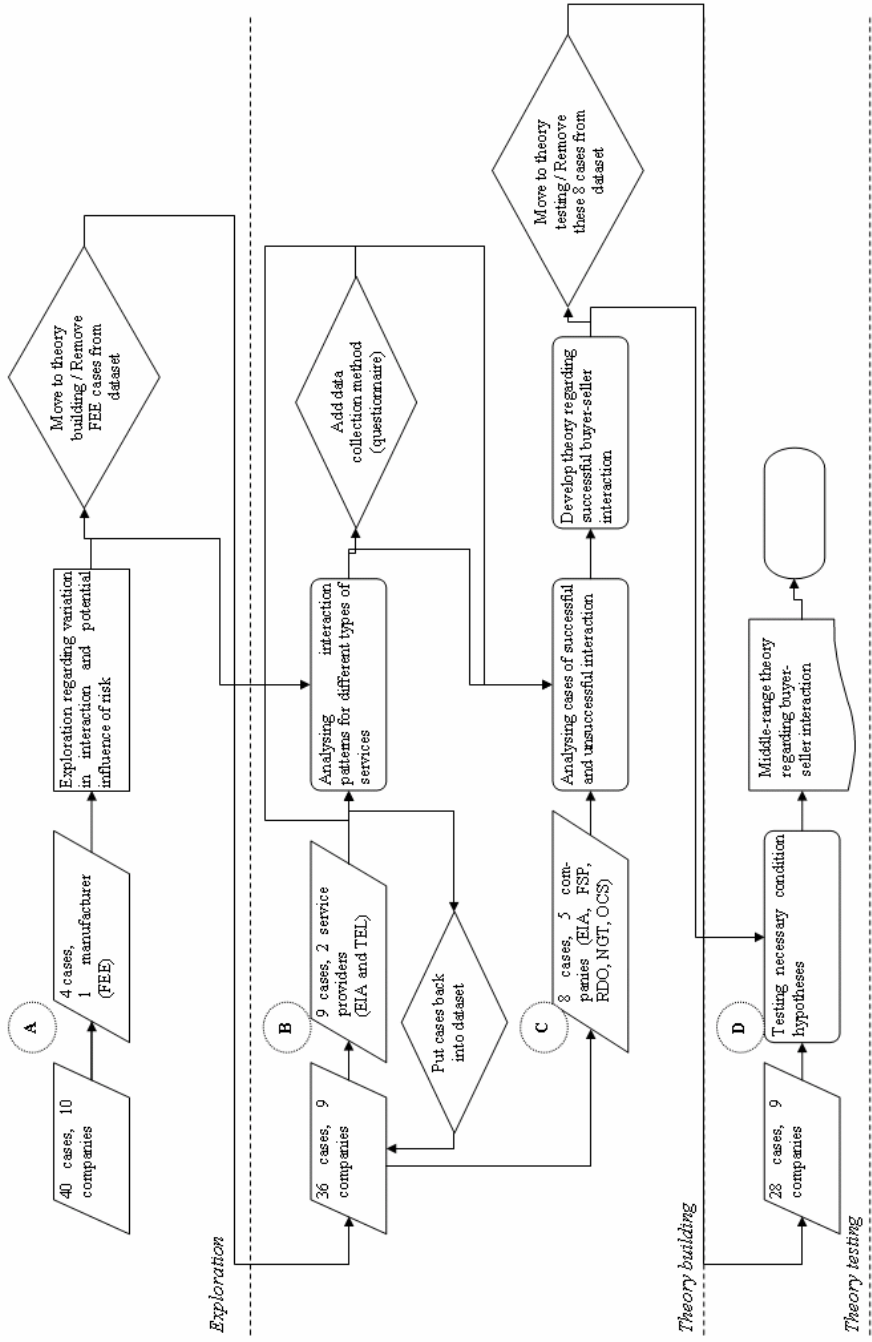


Figure 3.2 Flowchart representing the research process

3.3.1 Exploration

Taking the initial theoretical framework as a starting point, an exploratory case study was conducted to: 1) explore the presence of variation with regard to the process dimensions of interaction; and 2) explore the influence of the level of perceived risk on ongoing buyer-seller interaction (Chapter 4). Note that a case study comprises the study of each of the four service types at a specific buying company; a case refers to the period of ongoing service exchange for a specific service purchase.

From our original set of 10 companies/ 40 cases, we selected one manufacturing company for our exploratory study. This company, FEE, was selected because it was the first company at which data was collected (refer to (A) in Figure 3.2). The four services selected were a semi-manufacture, two instrumental services (one with high and one with low buyer-perceived risk) and a consumption service. The ongoing service exchanges for these four services were studied by means of interviews and document analyses.

After data collection at one company (FEE) had taken place, some time was taken to analyse the data and to get some preliminary ideas of the results obtained, as recommended by [Eisenhardt, 1989; Voss et al., 2002]. These analyses enabled the identification of important themes, which were addressed more extensively in the interviews with the other companies. The interview data for FEE were complemented for these themes. Thus, this single case study served as a pilot study to validate the data collection instruments.

Although the case study did not include all four types of services, the study enabled the identification of different patterns of interaction for the different types of services. Furthermore, the results indicated that the level of buyer-perceived risk involved influenced the explicitness of the interaction pattern: the interaction pattern for the high-risk instrumental service was more clearly defined than the pattern for the low-risk instrumental service.

The results provided initial support for the theoretical framework. The four cases used for exploration were removed from our data-set; our remaining data-set thus consists of 36 cases.

3.3.2 Theory building

In a next step, this single case study was replicated with the purpose of building propositions regarding variation in interaction. Thus, we move into the theory-building stage of the research, which comprised two steps.

First step in theory-building

As a first step towards developing propositions on effective buyer-seller interaction (Chapter 5), two case studies were conducted at two service companies: EIA and TEL (refer to (B) in Figure 3.2). As such, nine cases were

again taken from our set of 36 cases. Conducting two case studies in parallel enabled making both within-company and cross-company comparisons. Eisenhardt [1989] advocates to start with within-case analyses to cope with the vast amounts of data which are usually collected with case research. While in the field, notes were made of emergent ideas, observations, important themes and potentially relevant concepts, which were subsequently discussed within the research team.

The companies at which the studies were conducted were purposefully selected to be service companies, since it was expected that both component and semi-manufactured services are more easily found here. Additionally, being service companies, these companies were expected to have a more professional approach to services buying, which would increase the chances of finding variation between different types of services. In general, since these companies are well-performing, professional companies, we expected all cases to be studied to be successful: this was important since we wanted to identify effective interaction patterns. We decided to conduct the study at two companies, since Johnston et al. [1999] argue that evidence from multiple case-designs are more compelling and make the overall study more robust. On the other hand, involving more than two companies in this theory-building exercise would have (in our view, unnecessarily) substantially increased the size of the study.

This study comprised nine services: two component, one semi-manufactured, three instrumental and two consumption services. These services were studied by means of interviews and document analyses. Furthermore, in order to verify whether all cases studies were indeed successful (and to what extent), data was collected on success and risk by means of a different data collection method, a small self-administered questionnaire. Eisenhardt [1989] argues that it is legitimate to add data collection methods when building theory from case studies, since investigators are trying to understand each case in as much detail as possible. Therefore, any alterations or additions that are likely to result in new or firmer theoretical insights can be justified, as long as they are made in a systematic way. Similarly, Dubois and Gadde [2002, p. 555] explain that empirical observations may result in the “identification of unanticipated yet related issues that may be further explored in interviews of by other means of data collection”. As such, a mixed-method approach was adopted, which enabled some method triangulation [Yin, 2003].

Developing new data collection methods

The self-administered questionnaires were aimed at measuring success of the ongoing service exchange and the level of risk involved with the service being purchased. Success is measured by measuring the degree to which the

buying company is satisfied with the outcome of interaction (the service delivered) and the success associated with the interaction process [Edvardsson and Olsson, 1996; Grönroos, 1982] relative to its expectations in advance of the purchase. This is in line with Parasuraman [1998, p. 312], who noted that service quality is a function of a gap between expectations and performance.

The questions relating to success were derived from questions used in the interviews (for example: Critical issues that arose have been resolved satisfactorily by the supplier) (see Appendix D). There were more items to measure the success of the process than to measure the success of the outcome (8 versus 4). Consequently, process results impact the success score more strongly than do outcome results. Given the facts that the process is a means to achieve a certain outcome and that a good process is perhaps even more important than a good outcome [Bolton and Drew, 1992; Matthyssens, 1998; Zeithaml et al., 1996], this is not considered very problematic.

Risk was conceptualised as a function of consequences (measured in terms of seriousness/ importance) and uncertainty (which is made up of complexity and novelty) [Bauer, 1960; Mitchell and Greatorex, 1993; Sheth, 1973]. The questions regarding risk are developed from existing literature (see for example McQuiston [1989] on operationalisations of these concepts).

All members of the research team were involved in developing the questionnaire. The research instrument was then pre-tested among fellow academics and practitioners by having them complete the self-administered questionnaire. The test respondents were asked to provide comments on the content of questions (to determine whether the concepts being studied had been operationalised in an appropriate manner), as well as on the phrasing (to ensure the clarity of questions).

Performing additional data collection

The self-administered questionnaires were sent to the people that were interviewed. Each interviewee was asked to fill out the questionnaire for the service for which he/ she was interviewed. The answering scale used is a five-point Likert scale ranging from 1) Totally disagree to 5) Totally agree. For each company, the overall results of the questionnaires were fed back to the prime contact, in order to verify the results obtained. This contributed to establishing construct validity [Yin, 2003].

The answers to these questionnaires provided, at least within each company, more objective data on the relative levels of risk and success for the four services studied. After controlling for the level of buyer-perceived risk involved, the study resulted in the development of propositions on what interaction patterns for each of the four service types looks like.

However, since the interaction pattern found for instrumental services was associated with mixed levels of success, it was decided to perform another

theory-building exercise, in which cases of successful ongoing service exchange would be compared with cases of unsuccessful ongoing service exchange (Chapter 6). Since this second theory-building step concerns an analysis with a different purpose than the first, the nine cases of the first theory-building step are ‘put back’ with the rest of the cases, thereby bringing the set of cases back to 36.

Second step in theory building

We selected a case of successful and a case of unsuccessful ongoing service exchange for each of the four types of services (refer to (C) in Figure 3.2); thus, eight cases in total. The selection of extreme cases, or ‘polar types’, facilitate observing contrasting patterns in the data [Eisenhardt and Graebner, 2007]. Case selection took place with regard to the value of the dependent variable: high versus low success. Since only three of the 36 cases studied were really unsuccessful, it was decided to treat these cases as exceptions and omit them from the set of cases to choose from. Instead, the ‘worst of the rest’ were selected as cases of unsuccessful ongoing service exchange. The cases furthermore had to be characterised by a reasonably high level of buyer-perceived risk.

The cases selected came from five companies: one of the companies at which two cases were selected provided two successful cases (EIA); one provided a successful and an unsuccessful case (RDO), and one provided two unsuccessful cases (OCS). The two other companies, NGT and FSP provided a case of successful and a case of unsuccessful ongoing service exchange respectively.

The patterns of interaction for the successful and the unsuccessful services were compared: by eliminating common characteristics from the interaction patterns for successful cases, so called ‘effective’ patterns of interaction were identified for each of the four service types. In establishing relationships between patterns of interaction and the level of success, the factor “luck” needed to be kept in mind [Barney, 1986; Stinchcombe, 2000]: any firm encounters runs of good and bad luck, which makes it very difficult to distinguish between good luck and successful interaction. However, it is possible to identify which interactions are problematic and which are not; whether the functional interaction results from luck or good strategy is, however interesting, not critical for the results of this research.

The cross-case analyses resulted in the development of propositions on what interaction pattern would lead to success for each type of service, i.e. effective patterns of interaction. These propositions could be developed into testable hypotheses. Hypotheses suited for case study research include those proposing the existence of a phenomenon, or the presence of absence of a phenomenon under certain conditions [Johnston et al., 1999].

Since one cannot test theory with the cases that were used to develop that theory, the four successful and the four unsuccessful cases used in this step were removed from the data-set. As such, 28 cases remain for testing our theory.

Adding new theory

While the effective patterns were developed from the case studies, literature research was continued. As such, we followed the approach of Dubois and Gadde [2002, p. 553], who describe that “Parallel to the data collection, the search for complementary theories continued”. Eisenhardt [1989, p. 544] indicates that: “An essential feature of theory building is comparison of the emergent concepts, theory or hypotheses with the extant literature.” She argues for comparisons with literature bringing forward conflicting findings, as well as literature suggesting similar findings.

Two streams of literature were found to be particularly useful for the phenomenon under study. The first is a stream of research on organisational configurations and contingency theory [Doty and Glick, 1994; Drazin and Van de Ven, 1985; Fiss, 2007; Kogut and Ragin, 2006]. The second is a stream concerning the use of case research for testing theory, particularly through the development of necessary and/ or sufficient condition hypotheses [Braumoeller and Goertz, 2000; Dion, 1998; Dul and Hak, 2007]. The ideas obtained from this literature led to the insight that, since each of the four service types could now be associated with an effective pattern of interaction, the classification of business services had actually been developed into a typology of buyer-seller interaction. Doty and Glick [1994] explain how a typology in itself can be considered a theory. The literature on organisational configuration helps to understand how data collected on patterns of interaction could be analysed in a more rigorous manner.

3.3.3 Theory testing

The previous steps had resulted in propositions on what interaction patterns lead to success for each service type. Based on these findings, extended configuration hypotheses could be developed [Mintzberg, 1980, p.328], which basically claim that effective structuring requires consistency among design parameters and contingency factors. The propositions developed are tested in Chapter 7.

It was decided to posit the effective patterns as necessary conditions for successful ongoing service exchange [Dion, 1998; Dul and Hak, 2007], in other words: success does not occur if the effective pattern of interaction is not present. Here, we draw strongly on political science literature [see for example Braumoeller and Goertz, 2000; Dion, 1998]. Researchers in this field strongly depend on case research, simply because other research strategies have proved

to be infeasible. For example, for survey research, it is required that one knows the entire population of the instances being researched. Since this is not possible in political science, researchers in this field have had to rely in case studies instead. Consequently, the potential use of case research for developing and testing theory has been advanced primarily in this field.

Eisenhardt [1989] argues for shaping the hypotheses, in which the definitions of the constructs need to be refined to achieve construct validity. After construct refinement, the emergent relationships between constructs should be supported by the evidence in each case studied. Hypotheses are thus 'tested'/ shaped for each individual case rather than for the aggregated cases: as such, the cases are treated as a series of experiments, in which each case is used to confirm or disconfirm the hypotheses [Eisenhardt, 1989; Yin, 2003]. Similarly, Johnston et al. [1999] emphasised that each case directly confirms or disconfirms theory.

When testing necessary condition hypotheses, selection should take place with regard to presence of the dependent variable and absence of the independent variable. The necessary condition hypothesis is refuted for each successful case which does not have an effective pattern of interaction [Dion, 1998]. As a last step in a necessary condition analysis, one needs to establish that a certain necessary condition is non-trivial. Think of the example of gravity as a condition for conducting research: no one will question that gravity is a necessary condition for conducting research (as would be the conclusion from a conventional necessary hypothesis test), but gravity is present whether research is conducted or not. In order to establish that a necessary condition found is non-trivial, there should be cases without the effective pattern present and, consequently, without success.

Moving into the theory-testing stage, 28 cases from nine companies remained from the original data-set; these cases vary with regard to success and risk involved. All cases were used for testing the developed theory.

3.4 ANALYSIS

Analyses had to be performed on the data obtained from two data collection instruments. Hereafter, we explain how we went about analysing these data. The details of the various analyses are explained in the individual chapters.

For the questionnaires (Chapters 5-7), 65 interviewees²³ were identified for the 36 services studied. All these interviewees received a questionnaire: 39 were returned (response rate of 58%). The average scores on process and outcome success were calculated per interviewee. The scores on *success* per service were found to be quite similar across informants. For cases with disagreement among informants, which is a difficulty brought about by the use of multiple informants (see Section 3.2.3), the case design provided us with opportunities to resolve these discrepancies in line with data from the interviews and observations of the researchers. After resolving discrepancies between individual informants, the results were averaged across respondents and across the individual items to obtain one process and one outcome score per service. These again were verified with the interviewees and the buying company's key contact.

For analysing the interviews (Chapters 4-7), we followed the different steps in qualitative data analysis as suggested by Miles and Huberman [1994] (i.e. data reduction, data display and conclusion drawing/ verification). First, we identified the parts of the interview transcripts which were most relevant for our analysis and coded these texts [Voss et al., 2002]. We specifically sought to extract excerpts regarding the individual dimensions of interaction, the initial stages of the purchase process, risk and success. Findings on the latter two were later triangulated with the results of the questionnaires. The sequential steps undertaken to verify the interview data helped to interpret and/or resolve conflicting statements by the interviewees. The excerpts were then brought together in data tables, thereby reducing the data into categories [Glaser and Strauss, 1967; Miles and Huberman, 1994; in Voss et al., 2002].

Eisenhardt and Graebner [2007] mention the use of 'construct tables' as a way to summarise case evidence and to indicate how focal constructs have been measured (*data display*). Such tables create a strong link between qualitative evidence and building propositions. In the various chapters, we will both use detailed narratives and summarising tables to demonstrate our analysis process and show we built theory. As Eisenhardt and Graebner [2007, p. 29] suggest, the "use of summary tables and aids that summarise the case evidence complements the selective story descriptions of the text and further emphasise the rigor and depth of the empirical grounding of the theory". As such, descriptions of interaction patterns observed were derived from the rich interview data.

²³ Of the total number of 80 interviewees, the eight people that were interviewed in the exploratory case study did not participate in the questionnaire research. Of the remaining interviewees, some had switched jobs and were no longer available for the questionnaire research. Their successors were contacted, but not always able or willing to participate.

Then, conclusions were drawn by making predictions regarding effective interaction and using the case data to verify these predictions [Voss et al., 2002]. In doing so, the predictions as well as the case data were gathered in tabular form and subsequently examined.

For the purpose of testing theory (Chapter 7), the presence of the effective pattern of interaction had to be evaluated. In other words: the similarity or fit between the observed interaction pattern and the effective interaction pattern needed to be evaluated. Venkatraman [1989] identifies six perspectives of fit, each having differing theoretical meanings and requiring specific analytical schemes. The perspective of fit which is most appropriate for the purpose of our analysis is 'fit as profile deviation'. In this perspective, the theoretical meaning of fit is the degree of adherence to an externally specified profile (in our study: the effective pattern of interaction). Earlier, Drazin and Van de Ven [1985] proposed a pattern matching approach to determine fit between context, structure and performance. By calculating deviation scores, the distance from a profile can be evaluated, which can then be related to (lack of) performance. In this research, a similar approach is used: the degree of *similarity* or fit (as opposed to the *distance*) between observed and effective interaction patterns is evaluated on a scale from low, medium and high by the researchers. However, it was felt that these evaluations were quite subjective. Furthermore, decisions on whether fit was low or medium, or medium or high, were not always clear-cut. It was therefore decided to include an additional analysis technique: the use of independent judges.

To reduce the potential for researcher bias on the fit evaluations, an independent expert panel also evaluated the fit of the interaction patterns. Many accepted data collection methods used in marketing utilise multiple judges to interpret qualitative data [Johnston et al., 1999]. A panel was composed consisting of seven experts and seven non-experts. Both the experts and the non-experts are all academics: experts are people who do research specifically in the area of business services, while non-experts do research in the general realm of purchasing and supply management. Two sub groups were created containing both experts and non-experts.

For the purpose of the panel, an evaluation document was created which presented judges with the observed patterns and the respective effective patterns for a subset of the 28 cases; the judges were asked to for each individual dimension (i.e. key objectives, supplier capabilities, et cetera) rate on a scale from 1 to 5 the fit between the two, where 1 refers to highly dissimilar and 5 refers to highly similar. These assessments of fit were used to test the necessary condition hypothesis. Since the fit scores were unanimously low for one of the service types, we did a follow-up exercise in which judges were presented with a set of observed patterns and asked to determine the service type by comparing the observed pattern to each of the four effective

patterns of interaction. The results of this exercise could be used to verify whether the researchers, who first classified the services themselves, provided the judges with the right reference patterns for assessing fit. Thus, when an actual pattern has low fit with the effective pattern, this may be explained by the fact that the researchers have provided the wrong effective pattern, rather than that the buying company is doing things wrongly. This possible additional explanation for misfit needs to be included in the analysis. Also the level of buyer-perceived risk is taken into account, since low fit may also be caused by the fact that the service is associated with low risk.

3.5 GENERALISABILITY OF THE FINDINGS

One of the characterising aspects of adopting a case research approach is that the logic for generalisability is different for case research than for example for quantitative research. In quantitative research, instances to be researched usually form a sample which is representative of a certain population, enabling some kind of statistical generalisation. Consequently, case studies have traditionally been deemed too situation-specific [Weick, 1969] and unsuitable for obtaining scientific generalisation. Aldag and Stearns [1988, p. 260-261] point out that qualitative research in general is commonly perceived as exhibiting a tendency for construct error and poor validation. Such critiques have led many researchers to employ multiple case studies in a manner that suggests that they rely on some kind of statistical generalisation [Easton, 2000].

In our view, this approach is essentially *wrong* since it conflicts with the underlying principles of case research. Johnston et al. [1999] explain that case studies should not be thought of as a form of data collection, but as complete studies. The context and rich background of each case is the basic strength which counters its low statistical representativeness. Consequently, in contrast to generalising to a sampling population, case studies directly confirm or disconfirm theory. Case research thus relies on what Yin [2003] calls analytical generalisation, implying that one can generalise from even a single case, as long as there is strong evidence for the mechanisms that relate the theoretical constructs which make up the theory [Easton, 1995]. Dubois and Araujo [forthcoming] stress that with case studies, the emphasis is on establishing causal relationships within each case rather than finding an ‘on average’ causal relationship across all cases studied.

Consequently, the exact number of case studies is not particularly relevant. In contrast to the varying number of cases mentioned by different authors [Eisenhardt, 1989; Lewis, 1998], the notion of analytical generalisation implies that a single case may be enough [Dubois and Araujo, forthcoming; Easton, 1995]. Dul and Hak [2007] argue that generalisability is not a

characteristic of the results of a study, but of the theory being studied. Specifically, generalisability says something about the domain to which a theory applies, or in other words, under which conditions the relationships between the variables studied hold. Increased generalisability is achieved only through replication [Dul and Hak, 2007]. The differing view on generalisability also implies that cases need to be selected not by means of representative sampling criteria (the cases selected being a proper representation of the entire population), but rather on theoretical selection criteria (thereby defining the boundaries of the domain of the theory). In line with this, Eisenhardt [1989] and Eisenhardt and Graebner [2007] point out that when building theory from case research, one should select cases that replicate or extend the emergent theory. Therefore, selection of cases should take place on theoretical rather than statistical considerations [Glaser and Strauss, 1967]. Johnston et al. [1999] conclude that case selection decisions should stem from the research hypotheses.

In this study, we have thus tried to enhance the possibilities for analytic generalisation beyond the data-set by using theoretical selection criteria for selecting cases (selecting each of the four individual service types at a specific buying company), as well as for selecting buying companies (selecting companies which differ with regard to type of industry, type of customers and type of production). Considering the selection of case companies, the data-set used in this study should not be regarded as being representative for the entire population of (Dutch) buying companies. Also here, we sought to specifically select those companies that due to contextual factors might display different patterns if interaction. As such, we would be able to investigate/ determine the boundaries of the domain to which the theory to be developed applies.

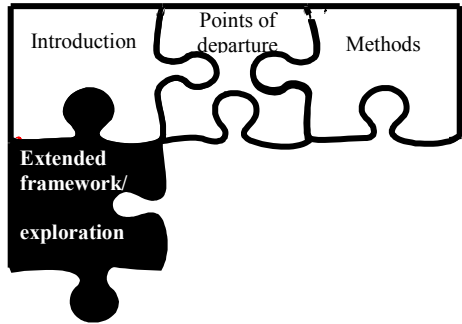
This chapter has elaborated on the process of conducting this research. The following chapters deal with each of the steps explained here in more detail. Starting from the classification, the different chapters show how theory on interaction between buyers and sellers of business services is gradually built and eventually tested.

Chapter 4 Extending the framework

Taking the classification of business services and the conceptualisation of interaction as presented in the previous chapter as a starting point, this chapter extends the original conceptual framework.

First of all, the original conceptual framework is criticised for emphasising structural dimension of interaction, i.e. buyer and supplier representatives involved and required capabilities. In this chapter therefore, the structural dimensions of interaction are augmented with process dimensions, i.e. institutionalisation and adaptation. Secondly, the concept of buyer-perceived risk is investigated in more detail.

Propositions are developed on how the processes of interaction may vary for different types of services, and how the level of buyer-perceived risk involved is expected to influence ongoing interactions. These propositions are explored in a single case study, i.e. the study of four services at one manufacturing company. The insights obtained are used to direct the next steps in this research project.



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in Business and Industrial Markets.*

Chapter 4

An Empirical Investigation of Interaction between Buyers and Sellers of Business Services²⁴

Wendy van der Valk, Finn Wynstra, Björn Axelsson

ABSTRACT

This paper presents the results of an exploratory study into the influence of risk on the interaction between buyers and sellers of different types of business services. We build on a recently developed usage-based classification of business services which identifies four types of services: earlier studies have indicated that the different types of services are associated with different key objectives, and require differing functional involvement and organisational capabilities. Furthermore, these patterns were found to emerge more clearly for more strategic or more advanced business services.

This article aims to make a theoretical contribution by: 1) augmenting the conceptualisation of interaction by including process dimensions; and 2) exploring the influence of perceived risk on patterns of interaction. We develop propositions and empirically investigate these through a single in-depth case study.

The results suggest that the level of perceived risk influences the extent to which distinct interfaces and interaction processes are defined and designed. Further research should therefore primarily investigate ongoing interaction for services characterised by a high level of perceived risk. The level of perceived risk does not affect the actual design of the interfaces and processes.

Keywords: business services, interaction, purchasing, buyer-seller relationships

4.1 INTRODUCTION

The services marketing discipline [Grönroos, 2000; Lovelock, 1983; 2001; Zeithaml and Bitner, 1996] has consistently been emphasising that (consumer)

²⁴ The authors would like to acknowledge the useful comments made by Wilfred Dolfsma, Ferdinand Jaspers and Thomas Ritter, and the anonymous journal reviewers.

services are produced in interactive processes between the seller and the buyer. Zeithaml et al. [1988, p. 35] claim that “in most services, quality occurs during service delivery, usually in an interaction between the customer and contact personnel of the service firm”. As such, one could argue that the success of a service is actually established in the encounter between service provider and buyer. These observations equally apply to business services, and highlight the presence of *ongoing buyer-seller interaction*, or in other words: continuous interaction during the service delivery process.

Recently, Grönroos [2004] stressed the importance of the service encounter and the customer-service provider interactions it comprises. This parallels a shift in the strategy debate towards a micro perspective on strategy and strategising [Johnson et al., 2003], thereby calling for emphasis on the processes and practices that make up the daily activities of organisations and that relate to strategic outcomes. Johnson et al. [2003] argue that as the transparency of resource markets increases, sustainable advantage remains more and more in the level of detail of the buyer-seller relationship. Hence, daily activities and ongoing interaction are the ‘stage’ for strategic behaviour.

Consequently, studies into buying business services could benefit from focusing more on the ongoing business (as opposed to the ‘transactional’ purchasing process), where the design and management of interfaces and interaction processes are an important determinant of the actual outcomes of the customer-supplier relationship. Unfortunately however, researchers in the area of PSM have not fully acknowledged this typical aspect of services, and have largely focused on the initial phases of the purchasing process, such as supplier selection [Day and Barksdale, 1994]. An exception is Mitchell [1994], who briefly touches upon problems and risks in the buying process for consultancy services and includes project management and performance evaluation in addition to the stages comprising the up-front decision-making process.

In order to investigate this notion of ongoing interaction from a purchasing and supply management perspective, Wynstra et al. [2006] recently proposed a classification of business services based on how the service is used/ applied by the buying company. They furthermore identified several dimensions in terms of which patterns of interaction can be described and found variation on these dimensions in their exploratory studies. However, as acknowledged by Wynstra et al. [2006], this conceptualisation of interaction is rather static, since it involves only structural dimensions. Furthermore, Wynstra et al. [2006] mention the potential influence of the level of perceived risk associated with the service to be purchased; yet, they do not develop this notion. Finally, in their exploratory studies, these authors did not explicitly address selection issues or the development of research instruments.

The purpose of this paper is two-fold. Firstly, it extends the conceptual framework provided by Wynstra et al. [2006] by adding process dimensions to the set of dimensions used to describe patterns of interaction. According to Whetten [1989], identifying how a proposed change in the number of variables affects accepted relationships between the variables is a good way to demonstrate the value of this change. Secondly, we conceptually investigate the influence of perceived risk and conduct a single, exploratory case study aimed at understanding whether and how this factor influences buyer-seller interaction. This case study draws on theoretical sampling, as well as on a case protocol and an interview guide. Conclusions are drawn and areas for future research are discussed.

4.2 USAGE AS A DRIVER FOR VARIATION IN ONGOING INTERACTION

Most firms nowadays tend to engage in a limited number of long-lasting relationships. As a result, the ongoing interaction in these business relationships has become highly important. The Industrial Marketing and Purchasing (IMP) Group was one of the first scholarly groups to acknowledge the importance of the ongoing business relationship and the interactions involved [Ford, 2002; Håkansson, 1982]. In ongoing business relationships, buying companies and suppliers interact during exchange episodes and as part of the long-term relationship (across exchange episodes). Functional interaction between buyers and sellers is required to ensure successful ongoing exchange.

In order to determine what a functional pattern of interaction looks like, the IMP Group has extensively investigated ongoing interaction between buyers and sellers of industrial goods. They were able to identify variation in interaction and found that the type of application of a purchased good is the main determinant of buyer-supplier interaction [Håkansson, 1982]. Based on this attribute, Håkansson [1982] distinguishes three classes of goods: capital equipment, raw and processed materials and components (note that services are not explicitly accounted for in this classification). Similarly, Jackson and Cooper [1988] identify three classes containing both products and services: 1) capital products (major equipment); 2) operation products (minor equipment and MRO services); and 3) output products (raw materials/ components and 'production services' purchased for the final product)²⁵.

Building on the classifications of Håkansson [1982] and Jackson and Cooper [1988], Wynstra et al. [2006] propose a classification of business

²⁵ MRO services are purchased by an organization to run its operations (i.e. maintenance, but also legal services) while production services become part of the production process for a particular (set of) product(s) [Jackson et al., 1995].

services, based on how the service is used by the buying company, and claim that this is one of the main factors affecting the appropriate (effective) design of customer-supplier interfaces and interactions. Four types of services can be identified: component services, semi-manufactured services, instrumental services, and consumption services.

Component services are, without transformation by the buying company, passed on to the end-customer. Examples are subcontractors for a cleaning company, or (inbound) call centre services for a telecom company. Semi-manufactured services are transformed by the buying company before being passed on to the final customer; these services are primarily used as an *input* by the buying organisation for particular offerings for final customers. An example is outsourced market research, which is then used by a marketing and advertising company to develop a marketing plan for a client. Instrumental services directly affect how the buying company's primary processes are carried out (they are not delivered to end-customers). An example is subcontracted ICT services to support the operations of a logistics service provider. Finally, consumption services do not directly affect how the buying company's primary processes are carried out. An example is the cleaning of office buildings for a consultancy agency.

This classification has several important benefits. Firstly, it focuses specifically on business services, which according to Boyt and Harvey [1997] and Jackson and Cooper [1988] have received far less attention than consumer services. Secondly, it takes into account services that are being passed on to (business) customers: these services have largely remained unaddressed in services marketing research [Jackson and Cooper, 1988]. Thirdly, it takes on a buying firm's rather than a service provider's perspective. Finally, it enables the identification of similarities between services that technically speaking of a different nature. Whereas business services are usually classified with regard to the nature of the service (IT, HRM), the service providers or the stakeholders involved [Agndal et al., 2006], our classification draws attention to the importance of an individual service for the buying firm, for example for customer satisfaction or for the continuity of the buying company's primary processes. Similarly, Fitzsimmons et al. [1998] argue that it is important to identify who or what is the recipient of the service (people, things or processes), since this provides an understanding of the nature of the service being offered and the required interactions. Focusing on what they can/should do with the service and its provider rather than on the service itself enables buying companies to think about what functional aspects are crucial and consequently who should be involved to what extent in the purchasing decision process and the exchange process that follows thereafter. These issues are expected to be equally relevant for business service providers.

4.3 DEVELOPING THE CONCEPT OF INTERACTION: ADDING PROCESS VARIABLES

Exploratory case studies into service procurement indicate that differences exist with regard to the *key objectives of interaction*, *type of representatives involved* and *required buyer and supplier capabilities* (Table 4.1) [Wynstra et al., 2006]. For example: the key objective for component services is to have the service fit with the buying company's existing offerings, whereas for instrumental services, the service should result in the desired effect on/ change in the primary processes. These key objectives have certain implications for the resources required from buyer and seller [Cunningham and Homse, 1986].

On the one hand, the key objective of interaction is reflected in the type of functional representatives involved in the ongoing interactions. For component services, for which the end-customer plays an important role, this involvement comes from people representing the end customer (often the marketing discipline) or perhaps even the end customers themselves. The fact that instrumental services affect the buying company's primary processes resulted in the involvement of business development and primary process representatives. Other internal users often include general management and service specialists (e.g. internal lawyers in the case of legal services).

On the other hand, different key objectives will require differing capabilities from both the buying and the supplying organisation. When providing component services, the supplier has to understand the service itself as well as how it fits with the buying firm's complete (downstream) offering. Furthermore, an important capability is to match internal capacity with the buying company's demand pattern. Critical customer capabilities include the ability to (timely) interpret, translate and communicate (changes in) final customer demands and the ability to synchronise and coordinate the design ('architectural knowledge') and delivery ('assembly capacity') of the different services. For instrumental services, the supplier should have a thorough understanding of the buying firm's production process. Furthermore, since instrumental services often have a long-term character, the supplier has to be able to sustain and support the service for an extended period of time [Håkansson, 1982, p. 163-192]. Critical customer capabilities concern the ability to interpret, translate and communicate the demands of internal users and the capability to (help) implement and leverage these services within the own organisation.

Although Wynstra et al. [2006] acknowledge the limits of their conceptualisation of interaction in terms of objectives, capabilities and interfaces and point out that the concept of interaction can be further developed by including process-related dimensions, they do not address this in large detail. This seems counter-intuitive, since the IMP Group has

Table 4.1 Differences in objectives, capabilities and interfaces for the different service types

Type of service	Objectives	Critical supplier capabilities	Critical customer capabilities	Supplier representatives	Customer representatives
<i>Component services</i>	<ul style="list-style-type: none"> The service should fit with the customer's final offering 	<ul style="list-style-type: none"> Production capacity and quality Development capabilities (in case of specialised services) 	<ul style="list-style-type: none"> Translating/communicating final customer demands (on ongoing basis) Synchronising the supply of various service components 	<ul style="list-style-type: none"> Marketing representatives regarding the supplier's own service 'Downstream' specialists (knowledgeable of the customer's final offering) 	<ul style="list-style-type: none"> Specialists regarding the service bought, and marketing representatives knowing the needs of the buyer's customer
<i>Semi-manufactured services</i>	<ul style="list-style-type: none"> The buying company should be able to transform the service in the desired way 	<ul style="list-style-type: none"> Production capacity and capability to maintain a stable quality Innovative capabilities (when used as an external expert and for strategic services) 	<ul style="list-style-type: none"> Translating final customer demands Optimising fit internal - supplier's operations Synchronising suitable contact interfaces between internal and the supplier's operations 	<ul style="list-style-type: none"> 'Production planning' and marketing representatives 	<ul style="list-style-type: none"> Production and quality representatives
<i>Instrumental services</i>	<ul style="list-style-type: none"> Service should affect customer's primary processes in the desired way Service should fit with important characteristics of primary processes 	<ul style="list-style-type: none"> Business development and innovation Business and service production design services 	<ul style="list-style-type: none"> 'Implementation' skills: understanding what fits when, how and for whom 	<ul style="list-style-type: none"> Product representatives, often including a team of consultants or process engineers 	<ul style="list-style-type: none"> Business development representatives and affected internal customers
<i>Consumption services</i>	<ul style="list-style-type: none"> The service should support various core processes 	<ul style="list-style-type: none"> Ability to supply the desired service and (if needed) adapt it to the specific situation of customer 	<ul style="list-style-type: none"> Translating/communicating internal customer demands (on ongoing basis) Follow up on performance and user satisfaction 	<ul style="list-style-type: none"> Marketing representatives 	<ul style="list-style-type: none"> Buyers and internal customers

consistently stressed the importance of studying the interactive processes between buyers and sellers and identified two key interaction processes: institutionalisation and adaptation.

Institutionalisation occurs when buyer-seller relationships are long-term: in these relationships, conscious decision-making may be substituted by routine behaviour [Håkansson, 1982]. As such, patterns of interaction will either be deliberately designed or, more often, emergent. Institutionalisation may for example emerge in the inter-organisational contact patterns as well as the role relationships being built up over time. Following Håkansson [1982, p. 54], who analyses institutionalisation as an element of the inter-functional and interpersonal contact patterns between the companies and the terms of trade, contract procedures and protocols, we propose to primarily focus on communication as an area in which institutionalisation takes place, since this is expected to be strongly coherent with the structural dimensions of interaction, i.e. key objectives and functional representatives involved.

The differences in terms of key objectives, functional representation, organisational capabilities, institutionalisation and adaptation will obviously be reflected in these inter-organisational contact patterns between the buying company and the service provider. Indeed, Wynstra et al. [2006] found that patterns of communication for the different service types differed in terms of broadness and the high-priority issues addressed. Håkansson [1982] suggests that the frequency and form of communication in relation to the topic discussed and the individual that was contacted are important dimensions when trying to understand the information exchange between buyer and seller, both within and across exchange episodes. Similarly, Cunningham and Homse [1986] mention frequency, intensity and hierarchical and functional scope of customer-supplier contacts as short-term aspects of the interaction process. We therefore propose to analyse the contact patterns in terms of frequency, intensity and hierarchical and functional scope (note that the latter two are covered by studying which actors are involved).

Adaptations refer to any relation-specific changes or investments made by the parties involved aimed at facilitating buyer-seller collaboration. Brennan et al. [2003] brought forward several areas in which adaptation can take place when exchanging industrial products (derived from Håkansson [1982] and adapted to the specific situation of services by Brennan): service specification, service design, service delivery processes, capacity and demand management, administrative procedures, financial procedures, adaptations with regard to provision of sensitive information and changes to organisation structure. They furthermore pointed out that adaptations can be unilateral (one firm making a modification for a specific exchange partner, without the exchange partner making a reciprocal modification) or mutual (reciprocal modifications).

With regard to these process dimensions, several propositions can be developed. For example: for component services, which become part of the offerings to final customers, critical issues in the buyer-seller dialogue are the integration of the service into the overall offering of the buying company, end-customer requirements (i.e. regarding the sourcing of the component or the desired use of the component) and the coordination of service production/delivery and consumption. Since the demand for the purchased service is strongly related to the purchase pattern of the buying companies' customers, adaptations are made with regard to capacity and demand management.

For instrumental services, a critical issue in the buyer-seller dialogue is how and to what extent the service impacts the buying company's primary processes. Buyer and seller will furthermore discuss developments in the supply market and within the buying organisation, as to obtain long-term alignment. Regarding adaptations, sensitive information regarding for example the buying company's strategy is provided to the service supplier, in order to enable the supplier to optimally address the developments within the buying organisation. Because of the long-term collaboration between buying company and service provider, special arrangements are also made with regard to financial and administrative procedures. The complete set of propositions regarding processes of interaction is as follows:

P1 For component services...

- A. ...the most important issues in buyer-seller communication are customer requirements, the fit of the service with the rest of the offering, and the customers' evaluation of the service.
- B. ...adaptations mostly occur with regard to the specification and design of the service, and capacity and demand management. Furthermore, critical information regarding the buying company's value proposition will be exchanged.

P2 For semi-manufactured services...

- A. ...the most important issues in buyer-seller communication are customer requirements, service transformation possibilities and the fit between the customer's and the supplier's processes.
- B. ...adaptations mostly occur with regard to service delivery and capacity and demand management. Furthermore, critical information regarding the buying company's value proposition will be exchanged.

P3 For instrumental services...

- A. ...the most important issues in buyer-seller communication are the buying company's strategy and developments, and the effect of the service on the buying company's primary processes
- B. ...adaptations mostly occur with regard to organisational structure. Furthermore, critical information regarding internal developments at the buying company will be exchanged.

P4 For consumption services...

- A. ...the most important issues in buyer-seller communication are internal customer demands, the internal customer's evaluation of the service and how to optimise efficiency (i.e. by reducing administrative workload)
- B. ...adaptations mostly occur with regard to financial and administrative procedures.

4.4 THE PERCEIVED RISK FRAMEWORK AND ITS CONSEQUENCES FOR BUYER-SELLER INTERACTION

In addition to variation with regard to structural dimensions of interaction, Wynstra et al. [2006] furthermore found that patterns for interaction were more explicitly defined and designed for some of the services studied. For example: a "qualified" dialogue between the companies involved could be observed for the strategic and knowledge intensive component service, whereas for the non-strategic component services, broader patterns of interacting people were found. Also, the variety and number of involved specialists differed for an advanced semi-manufactured service versus one that is a standard. Based on these findings, they suggest that patterns of interaction surface most clearly for those services that are associated with a high degree of perceived risk, or high potential impact.

This suggests that the buying companies studied designed the interaction with the supplier with reference to other factors than how the service is used/ applied by the buying company. Often, buying companies use (slight adaptations to) existing portfolio models [Kraljic, 1983; Van Weele, 2005] to analyse the purchase situation and develop their purchasing strategies accordingly. Van Weele [2005, p. 40] mentions various factors that affect the buying process or the buying decision, like for example the amount of money involved with the purchase.

Most of these purchasing portfolio models are based on concepts derived from Organizational Buying Behavior (OBB) literature, like importance (see for example the work on buy-classes by Robinson et al. [1967]) or risk (see the work on perceived risk by Sheth [1973]). From their review of the three most influential models of organisational buying behaviour [Robinson et al., 1967; Sheth, 1973; Webster and Wind, 1972], Johnston and Lewin [1996] conclude that much of the variation in organisational buying behaviour can be related to the level of *perceived risk* associated with a particular purchase situation. Building on Bauer [1960], Mitchell and Greatorex [1993] and Sheth [1973] claim that perceived risk is a combination of consequences (measured in terms of seriousness/ importance) and uncertainty. Indeed usually, perceived risk is viewed as the function of two variables: the importance of the purchase and the level of uncertainty associated with the outcome of the purchase

[Gelderman and Van Weele, 2002; Henthorne et al., 1993; Kraljic, 1983; Wilson et al., 1991].

McQuiston [1989] defines *importance* as the purchase's impact on organisational profitability and productivity. Importance/ seriousness can thus be interpreted as the extent to which a service is strategic or critical for customer satisfaction: in the case of component and semi-manufactured services, service delivery failure can have a direct impact on end customers. The seriousness of delivery failure can thus be higher for component and semi-manufactured services than for instrumental and consumption services. The service can also be of critical importance for the continuation of the buying company's production processes or result in a short-term or long-term impact on for example the primary processes of the buying company: this mostly applies to instrumental services. Consumption services will generally be considered unimportant for the buying company's profitability, competitive advantage, or for continuity of the buying company's primary processes²⁶.

Uncertainty is a concept that is usually made up of complexity and novelty. Considering complexity, two areas of complexity can be identified [McQuiston, 1989]: complexity of the purchase situation and complexity of the product (service) being purchased. Since we are interested in the potential influence of complexity (as an element of risk) on ongoing interaction, we focus on the complexity of the service. This complexity depends on the inherent complexity of the service (i.e. the extent to which a service is advanced) and the inherent complexity of the context in which the service is applied [Fisher, 1976, p. 30]²⁷. Similarly, novelty refers to the extent to which buyers are familiar with similar services or similar contexts in which the service is to be applied [Fisher, 1976, p. 30].

The importance of these factors is also noted by Fitzsimmons et al. [1998], who point out that the importance or criticality of the service to the buying firm must be considered in the purchasing decision, and by Smeltzer and Ogden [2002], who find that the nature of the services being purchased and their associated complexity are major factors for purchasers.

Regarding the influence of perceived risk on interaction, Johnston and

²⁶ Note that a consumption service like office cleaning can be considered highly important when regarded from the perspective of the internal customers/ users of the building.

²⁷ Fisher [1976, p. 30] furthermore proposes the level of experience the buying company has with the technological characteristics of the service and the level of sophistication of the buying firm in this specific area. In our view, this resembles McQuiston's [1989] definition of novelty; this latter factor therefore determines uncertainty rather than complexity.

Bonoma [1981] and McQuiston [1989] demonstrate that the functions/ people involved in interactions with suppliers vary with the novelty, complexity and importance of a purchase. Johnston and Bonoma [1981] define five measurable dimensions of the buying centre and found that novelty, complexity and especially importance were very helpful in explaining the level of managerial involvement, the functional disciplines involved, the number of people involved and the degree of linkage between members of the buying centre. McQuiston [1989] expands on the theory of buy classes [Robinson et al., 1967] by studying the combined effects on novelty, complexity and importance and finds that particularly the last two constructs were found to explain participation and influence of different organisational functions.

Johnston and Bonoma [1981] furthermore claim that the influence of novelty, complexity and importance is likely to be present in and have an effect on both the purchase situation and the interactions afterwards. Within the OBB research tradition however, these interactions have not been studied in great detail. For example: the influence of risk on ongoing interaction may be reflected in a higher level of managerial involvement. Therefore, in line with the claim of Johnston and Bonoma [1981] and the findings of Wynstra et al. [2006], we propose that differentiated patterns of interaction emerge more clearly for those services that are characterised by high perceived risk, since buying companies will make more conscious decisions on how to deal with services associated with high risk. These ideas lead to the development of the following propositions:

- P5A Differentiated patterns of interaction occur strongly for services characterised by a high level of perceived risk.
- P5B Services associated with a low level of perceived risk will have a fairly similar pattern of interaction. This pattern equally applies to any of the service types, and is different from the pattern associated with a high-risk service of that same type.

Huemer [2004] argues that in cases of high risk and vulnerability, trust becomes significant. Similarly, Moorman et al. [1992] claim that without vulnerability, trust is unnecessary. They argue that an increased level of trust positively affects the quality of interactions, since higher trust will lead to more extensive and timely information-sharing. Huemer [2004] discusses how trust can be actively developed in buyer-seller relationships. The active development of trust enables moving away from 'business as usual' and to reduce predictability to the extent that exploratory activities are made possible. We, however, assume here that a high buyer-perceived risk leads the buying company to design the interfaces and interactive processes with the supplier more explicitly. Only during the contract period can trust be actively built, as a result of which the influence of buyer-perceived risk on ongoing interaction may be mitigated.

4.5 A SINGLE CASE STUDY INTO ONGOING BUYER-SELLER INTERACTION

Wynstra et al. [2006] conducted exploratory studies into ongoing interaction between buyers and sellers of business services and found systematic variation with regard to structural dimensions of interaction: process dimensions of interaction and the potential influence of perceived risk were not included in this study. Furthermore, sampling issues and the development of research instruments had not been explicitly addressed. However, considering the lack of established theory on ongoing buyer-seller interaction patterns in business services, Yin [2003] provides an argument for exploring the presence of systematic variation in interaction in companies selected by means of theory-driven sampling criteria, and with properly developed research instruments.

The various propositions will now be investigated by means of a single case study. In this case study, i.e. the study of one service of each service type at one buying company, we: 1) explore the presence of variation with regard to the process dimensions of interaction; and 2) explore the influence of the level of perceived risk on ongoing buyer-seller interaction²⁸. In this case study, we draw on a pre-determined case protocol and interview guide.

This case study is part of an overall research project, in which we intend to study one service of each type at several companies. Such an approach enables both within-company and cross-company comparisons, the results of which are used to develop the emergent theory. We developed a theoretical sampling frame based on two dimensions: 1) the type of company (service providers versus manufacturing companies); and 2) the type of customer of the buying company (other companies or consumers). We invited multiple companies in each of the resulting categories; eventually, ten companies agreed to participate in our study. From these ten companies, a Fossil Fuels (oil and natural gas) Exploration and Exploitation company (FEE) was selected for this case study; the reason for choosing this company was that it was the first company at which data could be collected.

FEE finds and produces oil and natural gas in the Netherlands and the Dutch part of the continental plate. It is the largest natural gas producer in the Netherlands, with annual production of around 50 billion m³, which covers around 75% of Dutch demand. With an oil production of 0.8 million m³ a year, FEE covers about 4% of the country's total oil demand. FEE also performs various construction projects with differing sizes, ranging from relatively

²⁸ Since in this case study we were to use our case protocol and interview guide for the first time, this study would also be used to evaluate the suitability and usability of our research instruments and case protocol.

small modifications to the realisation of complete land or offshore installations for the extraction of oil and/ or natural gas.

In consultation with the authors, FEE selected the four services (one service purchase for each category in the usage-based classification) to be studied. We sought variation in terms of the type of service and the level of perceived risk associated with the service. Unfortunately, we were not able to identify a component service. This can be explained from the fact that at manufacturing companies, it will usually be more difficult to identify services that move downstream to customers: instrumental and consumption services will be more common.

With regard to variation in the level of perceived risk, we selected two instrumental services: one with high perceived risk and one with low perceived risk. We chose to select two instrumental services, since two semi-manufactured services (with varying degrees of perceived risk) would be difficult to find at a manufacturing company. Consumption services are hardly ever associated with high perceived risk.

We thus selected one semi-manufactured service (high risk), two instrumental services (one with high and one with low risk) and a consumption service (low risk). The level of risk associated with the service purchases reflects the level of risk as perceived by the buying company. The services selected and their brief descriptions, their respective classifications, and the functions of the people interviewed can be found in Table 4.2.

Table 4.2 Services and informants

(CMP: component, SEM: semi-manufactured, INS: instrumental, CNS: consumption)

	Service	Informants	Type
FEE	<i>Drilling services</i>	<ul style="list-style-type: none"> ▪ Supply Chain Engineer (purchasing) ▪ Drilling Development Team Leader 	<i>SEM</i>
	<i>Engineering and construction services</i>	<ul style="list-style-type: none"> ▪ Supply Chain Engineer ▪ Senior Project Engineer 	<i>INS</i> <i>RISK=HIGH</i>
	<i>Managing stock of piping materials</i>	<ul style="list-style-type: none"> ▪ Supply Chain Engineer ▪ Mechanical Engineer Piping 	<i>INS</i> <i>RISK=LOW</i>
	<i>Waste management</i>	<ul style="list-style-type: none"> ▪ Supply Chain Engineer ▪ Representative Waste Management department 	<i>CNS</i>

Each of the purchases was studied by means of two to three in-depth interviews of 1.5 to 2 hours each with purchasers and with contract owners and/ or users. The interviews with the purchasers focused predominantly on the purchasing process and to a lesser extent on the ongoing stages, whereas for the contract owners, who were deemed to be most knowledgeable on what happened after the purchase, the emphasis was on these ongoing stages (data source triangulation; Yin [2003]). In most cases, the buyer involved was approached first. Other informants were usually identified by the buyer. We tried to take the supplier's perspective into account by asking the buying company about supplier representatives involved, actions/ behaviours, viewpoints, et cetera; however, suppliers have not been involved in data collection.

The interviews were semi-structured. The interview guide was based on the interview guides used in similar studies conducted by the IMP Group [Håkansson, 1982]. Of each interview, extensive interview summaries were made and sent back to the informants for verification. Approved summaries at the informant level were merged into one description at the case level, which was again sent to the informants in order to eliminate any inconsistencies and to provide further clarification if necessary. Furthermore, the interview results were extensively discussed by the authors to further enhance validity²⁹. Table 4.3 summarises how we dealt with various issues of validity and reliability.

4.6 RESULTS OF THE CASE STUDIES

We now turn to descriptions of the four case studied, after which we will perform a within-case and two cross case analyses: one across the three service types, and one across the two instrumental services. The findings for the cases at FEE have been summarised in Table 4.4; we will refer to this table in our analysis.

4.6.1 A semi-manufactured service: drilling services

FEE works with a main contractor, which provides the equipment/ installations and the personnel to perform the actual drilling for oil, and which is paid a refund for its costs plus a reasonable profit margin. The main contractor also manages the contracts with third parties (which can only be contracted in consultation with FEE) and carries out some project planning activities. This service becomes part of the customer processes (increased speed of production due to the use of a special drilling technique);

²⁹ The research team consisted of one principal researcher and the two co-authors of this paper.

Table 4.3 Validity and reliability in the case studies

Type of validity	Methods of addressing this in the case studies
<p><i>Construct validity</i> “establishment of correct operational measures for the concepts being studied”</p>	<ul style="list-style-type: none"> ▪ Triangulation of multiple informants: different internal representatives ▪ All informants received draft versions of the interview report for comments ▪ Draft versions of the complete case report were verified with at least one key informant from each buying firm ▪ Three research team members gave input during data collection and analysis ▪ Result: emergent explanations adjusted and expanded; participants agreed to the interpretations
<p><i>Internal validity</i> “establishing causal relationships whereby certain conditions are shown to lead to other conditions, as distinguished from spurious relationships”</p>	<ul style="list-style-type: none"> ▪ Use of conceptual framework ▪ Result: conceptual framework augmented/relationships between variables in conceptual framework identified and substantiated
<p><i>External validity</i> “establishing a domain in which the study’s findings can be generalised”</p>	<ul style="list-style-type: none"> ▪ Theoretical selection of cases at the level of the service purchase ▪ Result: revised framework applicable to different types service purchases
<p><i>Reliability</i> “demonstrating that the operations of a study can be repeated with the same results”</p>	<ul style="list-style-type: none"> ▪ Development of case protocol ▪ Development of (interview) questionnaire ▪ Result: methodology transparent and repeatable

Based on: Yin [2003].

furthermore, demand for the service is strongly connected to customer demand. It is therefore considered a semi-manufactured service. The service comprises a high risk purchase, since non-performance of the contractor results in substantial production (and thus revenue) loss.

For this service, the key objective of interaction is to integrate the drilling service into FEE’s primary processes. Consequently, the supplier needs to understand not only its service delivery process, but also FEE’s primary processes. The fact that this contract involves a new drilling technique puts certain requirements on the innovative capabilities of the supplier (further development and fine-tuning of the technique). The supplier needs to understand the safety requirements of FEE, as well as the impact of non-production in FEE’s revenues. FEE has to be able to explain these issues well. Furthermore, FEE should provide a good forecast on when a drilling period

will start, as well as to maintain the time schedule in order not to cause delays themselves (coordination of FEE's and the supplier's processes). We find the involvement of production planners; however, marketing involvement is lacking. This can be explained from the fact that production is delivered to a company which is part of the same conglomerate as FEE: formally, this is an external customer, but because it is within the conglomerate, FEE's production planners may guard the stakes of these companies. Regarding the supplier representatives, an account and a contract manager represent the commercial side of the supplier. Technical specialists are involved to plan, prepare and perform drilling activities. Communication is intensive and concerns production progress and deviations that may occur. Adaptations mostly occur with regard to the specification and design of the service: the supplier has developed the new technique in collaboration with (and thus custom for) FEE.

FEE is satisfied with the contractor's performance in terms of the service provided and service provision. The service is delivered at the right time with the right quality and there have been no major problems in the collaboration. In a new contract however, the focus will be more on cost optimisation issues in addition to delivering projects.

4.6.2 A high risk instrumental service: engineering and construction services

FEE has started a development project aimed at the profitable exploitation of an oil field. Steam produced by a hydropower plant is injected into the earth, resulting in oil "sinking" into specially constructed trenches (horizontal pits). The construction and subsequent maintenance of the trenches and the hydropower plant have been outsourced to an engineering & construction consortium. This service is targeted at the buying company's primary processes, and represents a major investment: therefore, it is considered an instrumental service. The risk associated with this service purchase is large since it is a greenfield project involving large investments.

The key objective is to realise the production facilities as quickly as possible so that FEE can start production. This requires the involvement of technical specialists (people knowledgeable about construction activities). Since this project involves an expansion of FEE's business activities, business development representatives are involved. This project involves a long-term collaboration (the life cycle of the oil field is estimated to be 25 years); the selection of the consortium was therefore done with the greatest care. Furthermore, the final decision was made by a tender board (higher management involvement), which consisted of the technical disciplines, finance, sales, et cetera (all represented by someone from the senior management level).

During the ongoing service exchange, a senior project manager and a core team of five to six people (amongst others engineering and quality) are dedicated to the consortium, with purchasing in an advisory role. The consortium is represented by a management team consisting primarily of a proposal manager and technical representatives (involved with the detailed design and execution of the development project). Communication for the engineering services is intensive and formal and mostly concerns progress in terms of project realisation and the technical performance objectives. The information exchanged is critical, since the plan to redevelop an existing oil field is considered sensitive information from a competitive perspective).

At the moment of studying this case, the project was still ongoing, and FEE has been confronted with a number of delays. However, this is inherent to a development project of this size, and FEE is generally satisfied with the services provided and the process of service provision.

4.6.3 A low risk instrumental service: managing stock of piping materials

One of the construction activities of FEE concerns constructing pipelines. Three suppliers have been contracted to manage the inventory of the required materials (i.e. flanges and fittings) at FEE's construction sites. This service remains within the buying company and directly affects the (primary) construction processes of FEE: this makes this service an instrumental service. Orders for materials (majority of spend) and related services (i.e. welding, construction or digging services) are placed on a daily basis and vary in size from several euros to several millions of euros. Failure of service delivery can lead to delays in the construction activities, which can eventually result in claims of customers because of discontinued natural gas supply. The same goes for quality deficiencies in the materials purchased. Key objective is thus to maintain continuity of FEE's primary processes. Overall however, the risk involved with this contract is considered low, since the chances of a delay actually resulting in customer dissatisfaction are minor.

This service affects the primary process of FEE: non-delivery or low quality cause immediate delays. A mechanical engineer (contract owner) therefore is involved with designing the service process and ensuring its fit with FEE's primary processes. Since this purchase concerns a European contract, a global account manager is also involved. After the contract had been signed, the contract owner and the supply chain engineer conduct quarterly review meetings with the supplier. Since delivery reliability and quality are important, these issues are discussed here. The coordination of supplies, the scope of activities and specifications remain with the business

lines. Both FEE and the supplier have made adaptations with regard to service specification and design (standardisation of Stock Keeping Units).

At the beginning of the contract period, there were some problems; however, these were not too serious (no delays). The contract reviews demonstrate increasing performance and overall, FEE is satisfied with the service provided and service provision.

4.6.4 A consumption service: waste management

Waste management refers to the collection of perilous waste, regular waste (coming from on and offshore drilling locations and office buildings), construction and demolition waste, processing of contaminated earth and drilling waste at various FEE locations, and delivering it to appropriate processors. One service provider has been contracted for dealing with and carrying the administration for the majority of the waste streams (80%). The service remains within FEE and does not affect its primary processes: it is therefore considered a consumption service. Although the contract is critical with regard to environmental and safety regulations, risk is low.

The key objective here is to support the primary process by dealing with the waste resulting from production and abandonment of activities in an appropriate manner, as to safeguard FEE's corporate reputation and its license to operate. Consequently, the supplier has to conduct these activities efficiently, thereby understanding that good performance is critical for FEE's license-to-operate. FEE has to be able to clearly communicate where waste can be found (internal demand) and the safety regulations that apply. This is ensured by assigning a representative from the waste management department the role of contract owner. The user has daily contact with the supplier about for example collecting containers. The contract owner and purchasing have regular contact with two account managers (marketing representatives) about execution of activities, the contract, optimisation opportunities, et cetera.

There have not been any critical issues in this contract and FEE is content with the service provided and service provision. The supplier has made some relation-specific investments with regard to clothing (because of safety regulations) and containers (rented from the supplier by FEE). Furthermore, the supplier has set up a dedicated service centre, which serves as FEE's focal contact point. FEE in turn has made some adaptations with regard to administrative procedures.

4.6.5 Cross-case analysis

Looking across the three service types, we can clearly see distinct patterns of interaction. With regard to the process dimensions of interaction, we see that for semi-manufactured services, communication mostly concerns production progress and deviations that may occur, since this will immediately affect FEE's delivery to customers. Customer requirements are not an important topic in the communication: as was mentioned, this may be explained by the fact that FEE's customer is part of the same conglomerate. However, the findings regarding communication for semi-manufactured services are not in line with our expectations, and we find that P2A is not supported. Adaptations have taken place with regard to service specification and design, which provides support for P2B.

For the instrumental services, communication involves the exchange of critical information, as well as how the service delivered affects the buying company's primary processes (continuity of primary processes/ enabling production at new locations). The exchange of critical information was not so profound for the stock management services; this is explained by the fact that the stock management services are characterised by low risk. We therefore conclude that P3A is supported. For the high-risk instrumental service, adaptations were mostly made with regard to organisational structure. P3B is thus supported. In contrast, for the low risk service, adaptations mostly concerned administrative procedures.

From these observations, we can see that the interactions for the low risk instrumental service are more similar to the pattern for consumption services than to the pattern for the high risk instrumental service. Communication for consumption services namely focuses on the requirement of internal customers (the users at various production locations) and optimisation opportunities. Consequently, adaptations are made to financial and administrative procedures, as to increase the efficiency of the collaboration. This provides support for P4A and P4B.

Thus, we conclude that for the process dimensions of interaction, our case study shows differences across the three types of services studied. We can not say however whether this variation is systematic; replications of our study are required to verify this. Concerning the structural dimensions of interaction, our findings are in line with the findings of Wynstra et al. [2006].

Looking specifically at perceived risk, certain differences can be identified between the pattern for the high-risk instrumental service and the low-risk instrumental service. This becomes manifest in the type of representatives involved on the side of the buying company. The level of managerial involvement seems to be higher for the high-risk service. Furthermore, communication seems much more formalised and covers a wider range of

Table 4.4 Findings for the different types of services at FEE

	Objectives	Critical supplier capabilities	Critical customer capabilities
<i>FEE_SEM</i>	Deliver a service that enables production during drilling	<ul style="list-style-type: none"> ▪ Understand how service contributes to revenue generation FEE ▪ Understand importance of safety aspects ▪ Innovativeness 	<ul style="list-style-type: none"> ▪ Provide accurate forecast of demand ▪ Maintain time schedule (delay in production means revenue loss)
<i>FEE_INS HIGH RISK</i>	Realise capital investments in construction as soon as possible (so they can generate revenue)	<ul style="list-style-type: none"> ▪ Understand how the capital investment fits with FEE's primary process ▪ Understand FEE's specific requirements ▪ Project management skills 	<ul style="list-style-type: none"> ▪ Clearly specify tasks and responsibilities of supplier ▪ Maintain time schedule (delays result in revenue losses)
<i>FEE_INS LOW RISK</i>	Ensure timely availability of piping materials to prevent disruption of primary process	<ul style="list-style-type: none"> ▪ Understand how non-availability of materials affects primary process (reliability) ▪ Enable standardisation of materials 	<ul style="list-style-type: none"> ▪ Clearly specify how they want the supplier to contribute to the primary process ▪ Clearly specify tasks and responsibilities of supplier
<i>FEE_CNS</i>	Fulfil governmental requirements to clean up waste resulting from FEE's primary process	<ul style="list-style-type: none"> ▪ Understand how service contributes to FEE's license to operate ▪ Reduce integral chain costs ▪ Create process which can pass (environmental) accountancy audit 	<ul style="list-style-type: none"> ▪ Clearly communicate locations and types of waste ▪ Communicate safety requirements

Supplier representatives	Customer representatives	Communication	Adaptation
<ul style="list-style-type: none"> ▪ Account manager ▪ Contract manager ▪ Administration department (for support purposes) ▪ Technical specialists (regarding ongoing delivery) 	<ul style="list-style-type: none"> ▪ Supply chain engineer (purchasing) ▪ Technical representatives ▪ Contracting 	<ul style="list-style-type: none"> ▪ Production progress, deviations ▪ Daily operational contact, quarterly review meetings ▪ Evaluation on well-by well basis 	<ul style="list-style-type: none"> ▪ Specification and design developed by FEE ▪ Cost plus payment ▪ Exchange of sensitive information
<ul style="list-style-type: none"> ▪ Management team consisting of proposal manager and technical representatives 	<ul style="list-style-type: none"> ▪ Purchasing ▪ Technical representatives ▪ Tender board 	<ul style="list-style-type: none"> ▪ Feasibility of outsourcing scenario's ▪ Schedule and deliverables ▪ Formalised contact points including hold and witness points and review moment 	<ul style="list-style-type: none"> ▪ Specification and design customised ▪ Fixed unit price per m³ and kWh output ▪ Exchange of sensitive information
<ul style="list-style-type: none"> ▪ Managing Director ▪ Sales/ account manager ▪ Engineers ▪ Quality manager 	<ul style="list-style-type: none"> ▪ Supply chain engineer ▪ Global account manager ▪ Mechanical engineer ▪ Project employees 	<ul style="list-style-type: none"> ▪ Quality and delivery reliability ▪ Frequent communication 	<ul style="list-style-type: none"> ▪ Service design customised ▪ Standardisation of materials ▪ Service centre
<ul style="list-style-type: none"> ▪ Two account managers: one for contractual and one for commercial aspects 	<ul style="list-style-type: none"> ▪ Supply chain engineer ▪ Waste manager 	<ul style="list-style-type: none"> ▪ Coordination of activities ▪ Industry specific safety standards ▪ Scorecard results (HSE, savings, administration) 	<ul style="list-style-type: none"> ▪ Transparent pricing with flexible (maximised) profit margin ▪ Investments in company clothing and containers ▪ Supplier set up service centre

topics. The engineering services are more customer-specific than the stock management services; as a result, buyer and seller become more integrated and more (mutual) adaptations are made. Yet, when regarding the actual design of the interaction pattern (what the pattern looks like), we do not find clear differences between the engineering services and the stock management services: we only find that the pattern for the high-risk service is stronger. Note furthermore that there are more differences between the patterns for the (high-risk) semi-manufactured and the high-risk instrumental service on the one hand and the consumption service on the other hand, than between the pattern for the low-risk instrumental service and the pattern for the consumption service. These findings provide support for P5A.

The stock management services have a pattern which is, in terms of intensity, fairly similar to the pattern for consumption services: similar topics are addressed in the communication process between buyer and seller, and adaptations occur in similar areas. Also, the number of representatives involved and their managerial levels are quite similar across the two services. These observations support P5B.

Based on these findings, we conclude that the level of perceived risk has an influence of the interactions between buyers and sellers of business services. However, this influence is mostly reflected in the visibility of a pattern of interaction, rather than in what the pattern of interaction actually looks like.

4.7 CONCLUSIONS, LIMITATIONS AND FURTHER RESEARCH

Research into buying business services has mainly focused on the initial stages of the purchasing process: not much attention has been given to what happens after the purchase decision has been made [Bryntse, 2000]. Purchasing and supply management is however not just a matter of completing individual transactions, but certainly also of dealing with supplier relationships on an ongoing basis. This is especially true for business services, which are characterised by their interactive nature.

Wynstra et al. [2006] recently brought forward a classification scheme based on the way the buying company uses the service and found that ongoing interaction between buyers and sellers of business services will vary for the resulting four types of services. They furthermore proposed that the interaction between the buying company and service provider may vary with the level of perceived risk involved.

This article has empirically explored the influence of perceived risk on ongoing interaction between buyers and sellers of business services. A single in-depth case study was conducted with an extended conceptual framework of ongoing buyer-seller interaction: in this framework, interaction was not only

conceptualised in terms of the structural variables brought forward by Wynstra et al. [2006], but also in terms of processes of interaction like communication and adaptation.

The results indicate that the level of perceived risk involved indeed affects the ongoing interactions between buyers and sellers of business services. We found higher level management involvement for the high-risk service, and more formal communication structures. Yet, the influence of perceived risk was found to be not so much reflected in what the patterns of interaction look like, but more in how clearly these patterns can be observed.

This implies that buying companies will issue more intensive interaction with providers of high risk services. For service providers, an understanding of this effect is important in order to be able to involve the appropriate actors and resources to deal with representatives of the buying company.

4.7.1 Limitations and further research

A few critical notes however should be mentioned here. One of these notes has to do with the selection of the cases, since we were not able to identify component services at FEE. This can be explained by the fact that we started our exploration at a manufacturing company: component and semi-manufactured services are more common and thus more easily found at service companies. This limitation could not be overcome in this study, but future studies should be explicitly aimed at investigating ongoing interaction for component services. Furthermore, since it was hard to identify multiple semi-manufactured services with differing risk levels as well as high-risk consumption services, we were only able to select a high and a low risk service for one of the service types. As a result, our findings regarding the influence of risk are only based on a single observation.

Since the level of perceived risk was found to influence the clarity with which distinct patterns of interaction can be identified rather than the design of the patterns, this was not considered to be too problematic. We deem our results to have sufficient rigor and therefore propose to in future studies control for risk in the analysis.

A last critique concerns the fact that data was only collected from the buyer's perspective. In this case study, we were able to obtain information on all the dimensions of interaction, including dimensions that concerned the supplier (i.e. supplier representatives involved, critical supplier capabilities). However, a concept like interaction would be done justice by means of two-sided data collection. In future studies therefore, suppliers should be involved in data collection.

This study has made an attempt to further increase our understanding of differentiated ongoing interaction between buyers and sellers of business

services. Furthermore, it has provided empirical support for the idea that the level of perceived risk involved affects the clarity of patterns of ongoing interaction.

Further research could be aimed at validating the patterns observed in this case study at various other companies (replication). Studying services at many different companies will result in the inclusion of many different services: as such, generic patterns of ongoing interaction *across* the wide variety of services that organisations buy can be identified. This would at the same time address the observation by Agndal et al. [2006], who conclude that purchasing and supply management research covering different types of services is scarce.

Since this study did not include component services, we propose to perform a new exploration at service companies, since the chances of finding both component and semi-manufactured services are expected to be higher there than at manufacturing companies. We suggest performing this exploration at a limited number of buying companies, since this enables making cross-case analyses. Furthermore, these studies enable us to verify which dimensions show consistent and strong variation; future studies focusing on just these dimensions can then be executed at a large number of buying companies and/ or based on two-sided data-collection.

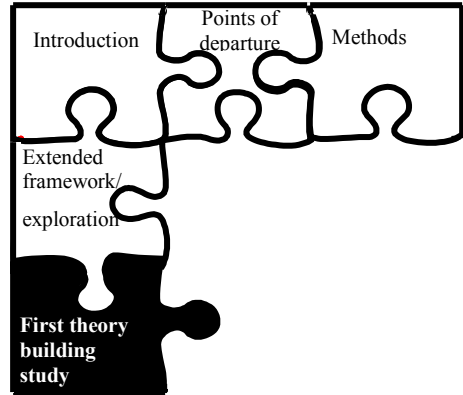
When analysing the findings, one should control for the level of perceived risk involved. We cannot use risk as a selection criterion, since that would lead to almost excluding (usually low-risk) consumption services from our further studies.

Chapter 5 First theory building study

In this chapter, the extended conceptual framework is used to conduct theory-building case studies at two service providing buying companies.

Nine purchases of services that belong to different classes in the classification are studied with the aim of identifying effective patterns of interaction for each of the four service types. In the analysis, we control for the level of buyer-perceived

risk involved. The results show that the two buying consistently differentiate their interactions in line with the classification. However, for one of the service types, the effective pattern of interaction is associated with differing levels of success. The link between patterns of interaction and success needs further attention.



*This article has been revised and resubmitted to an
operations management journal.*

Chapter 5

Identifying Effective Buyer-Seller Interaction patterns in Ongoing Service Exchange: Evidence from Multiple Cases³⁰

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ABSTRACT

Purpose – To build theory on effective buyer-seller interaction for different types of business services. We use a classification of business services which identifies four service types based on how they are used by the buying company.

Methodology/approach – We investigate buyer-seller interaction for each of the four service types at two service providing buying companies.

Findings - The results indicate that the two buying companies consistently differentiate their interaction for different types of services. These findings are in line with our theoretical ideas as well as with earlier work in this area. Since the cases studied are successful, the interactions are considered to be effective.

Research limitations/implications – The effective patterns identified lead to varying levels of success in the ongoing service exchange. Therefore, additional research is required to determine what makes an interaction pattern really effective.

Practical implications – Our results indicate that how a buying company uses a service has implications for the design of the buyer-seller interface and processes of interaction.

Originality/value of the paper – The study contributes to the body of knowledge in operations management by focusing on the design and management of series of service encounters in B2B relationships. It is a first step towards empirical validation of an area with scant theoretical development.

Keywords - Business services, purchasing, interaction, multiple case study

Paper type - Research paper

5.1 INTRODUCTION

Although the importance of service management has since long-time been acknowledged by researchers in the operations management (OM) discipline,

³⁰ The authors would like to thank Vareska van de Vrande and Uladzimir Radkevitch for their insightful comments in helping to improve this paper.

Roth and Menor [2003] indicate that the penetration of “services” in OM journals remains surprisingly low. The research that is conducted is highly fragmented and revolves mostly around specific industry sectors, research methods or specific decision-making issues [Roth and Menor, 2003]. Similarly, purchasing and supply management (PSM) researchers have mainly investigated the purchase of one particular type of services (e.g. PR agency [Lichtenthal and Shani, 2000; West, 1997]; maintenance/ facility services [Ancarani and Capaldo, 2005; Lehtonen and Salonen, 2005; Van Mossel and Van der Valk, 2006]). Smeltzer and Ogden [2002] state that the variety in business services as seen from the buyer’s perspective and how buying companies deal with this variety is an important research topic. Service management has covered a wide variety of services in relation to understanding customers and their requirements; yet, not much attention has been paid to supply side issues [Harland et al., 1999].

Furthermore, PSM research has mainly addressed the initial stages of the service procurement process [Day and Barksdale, 1994; 2003], as opposed to the ongoing exchange process. These exchange processes for services require ‘joint production between buyer/ customer and provider of the service [Fuchs, 1968], which usually involves a high level of customer contact [Chase, 1978; Chase and Tansik, 1983; Cook et al., 1999; Nie and Kellogg, 1999; Sampson, 2001]. This simultaneity requires a deeper examination of the service process [Karmarkar, 1996], including the design and control of the underlying series of service encounters [Johnston, 1999, p. 117; 2005]. Services marketers have denoted these encounters and the interactions therein as the main object of their research [Grönroos, 2004]. In these encounters, the specification of the nature of interactions between the service providers and customers becomes highly important [Roth and Menor, 2003]. Most research on service operations however focuses on the *consumer/ server* interaction part of the process [McLaughlin et al., 1991]: *business-to-business* interactions have so far received relatively little attention. Although the importance of services supply chains has been acknowledged by various authors [Ellram et al., 2004; 2007; Sampson, 2000], Åhlstrom and Nordin [2006] note that further investigation of service supply relationships is warranted.

This study therefore specifically deals with ongoing buyer-seller interaction within and between service encounters for *different types* of services. In-depth case research is conducted into ongoing buyer-seller interaction for different types of business services. The objective is to build theory on what an effective interaction pattern looks like for different service types. An effective pattern is a pattern associated with successful ongoing service exchange. The services to be studied are selected with regard to the usage-based classification of business services proposed by Wynstra et al.

[2006]: these authors consider the way in which a service is used by the buying company to be one of the main determinants of effective interaction.

The structure of the paper is as follows. First, the classification and the original ideas regarding variation on structural dimensions of interaction of Wynstra et al. [2006] are discussed. We furthermore build on Van der Valk et al. [2006], who extended this framework to include process dimensions of interaction and developed propositions. After explaining our research design and data collection methods, we present the findings of the case studies and link these back to the works of Wynstra et al. [2006] and our propositions. Finally, conclusions, limitations and suggestions for further research are discussed.

5.2 USAGE AS A DRIVER OF SYSTEMATIC VARIATION IN INTERACTION

Cook et al. [1999] listed service typologies³¹ that are based on various operations and marketing viewpoints and their purposes. These purposes include strategy issues, productivity and efficiency, and organisational design. None of these classifications however facilitates the development of meaningful guidelines for designing and managing service encounters.

Wynstra et al. [2006] claim that buying-company usage is one of the main determinants for designing effective buyer-seller interfaces and interaction processes. They derive their idea from studies into ongoing interaction between buyers and sellers of industrial goods [see Håkansson, 1982], in which different types of goods were identified based on how they were used by the buying company, but also build strongly on a classification of industrial purchases (both goods and services) brought forward by Jackson and Cooper [1988]. Underlying the latter classification was the idea that industrial goods are classified according to their application by the buyer. As such, Wynstra et al. [2006] identify four service types:

- Component services: are passed on to end-customers without being transformed by the buying company (i.e. external maintenance professionals hired by a manufacturer of production machinery).
- Semi-manufactured services: are integrated into the buying company's offering to end customers (i.e. a weather forecast used by an airline to create flight plans).
- Instrumental services: remain within the buying company and affect how the buying company's primary processes are carried out (i.e. management

³¹ Despite the differences between classifications, taxonomies and typologies (see Doty and Glick [1994]), Cook et al. [1999] include all three segmentation approaches in their survey.

consultancy aimed at developing and implementing a new business strategy for a telecom company).

- Consumption services: remain within the buying company and do not affect how the buying company's primary processes are carried out (i.e. gardening services bought by a bank).

Component and semi-manufactured services move downstream to customers and as a result enter a chain of consecutive buyer-seller relationships; instrumental and consumption services in contrast remain within the buying company. From a marketing perspective, Parasuraman [1998, p. 310] noted that customer-seller links differ for services used internally (instrumental and consumption services) and services that will be sold to the next level of customers in the supply chain – either after being integrated with the buying company's offering (semi-manufactured) or directly (component). From an operations point-of-view, Sampson [2000] points out that the actual outcome of (bi-directional) buyer-seller linkages is largely dependent on the design and management of interfaces and interaction processes. Thus: for buying companies, understanding and being able to manage the interaction with a supplier is just as important as being able to specify and contract the desired service. Insights into effective interfaces and interaction processes are therefore highly relevant, also to practitioners.

The classification by Wynstra et al. [2006] is used to empirically study buyer-seller interaction. Although Chase [1996, p. 300-301] claims to observe a shift from developing conceptual service classifications to refinement of their dimensions and empirical validation, Roth and Menor [2003, p. 155] point out that little progress has been made. Cook et al. [1999] noted some exceptions [e.g. Bowen, 1990; Kellogg and Chase, 1995; Silvestro et al., 1992], but state that conceptual models continue to be introduced, like Wynstra et al.'s [2006]. Our study builds on this classification and is specifically aimed at its empirical validation.

5.3 VARIATION IN INTERACTION

Starting from the usage-based classification of business services, Wynstra et al. [2006] conducted some exploratory studies into the ongoing interactions for different types of services. Ongoing here refers to the period *after* the contract has been signed, i.e. the period of ongoing service exchange³². Wynstra et al. [2006] investigated several dimensions of interaction mentioned in the Interaction Model [Håkansson, 1982], and first of all observed variation

³² Note that in many cases, some elements of the post-purchase interactions are already reflected in the initial stages of the purchase process, for example in which functional disciplines are included in the buying centre.

with regard to the *key objectives* of interaction. These key objectives in turn put differing requirements on the type of organisational resources involved from either party involved, i.e. the *type of functional representatives involved* in the ongoing interactions and the *critical capabilities* required [Cunningham and Homse, 1986]. We base ourselves on Wynstra et al. [2006] to describe how each of these dimensions vary for the four types of services.

5.3.1 Interaction for component services

For component services, the key objective is to ensure the fit between the service being purchased and the buying company's existing offerings. Since these services are being passed on to end customers, identifying and communicating end customer demands is an important customer capability. Consequently, people from the marketing discipline are strongly involved in the ongoing interactions, since they are knowledgeable about these end-customer requirements. Translating these demands into high quality service delivery is an important supplier capability. Sampson [2001] furthermore notes that for these kinds of services, service operations need to be robust enough to handle the varying nature of inputs supplied by end-customers.

5.3.2 Interaction for semi-manufactured services

The key objectives for semi-manufactured services are quite similar to those for component services. In addition, optimizing the form and degree of processing of the service with respect to the buyer's application is a key objective [Fitzsimmons et al., 1998, p. 372; Håkansson, 1982, p. 58-63]. Marketing representatives are usually involved in the ongoing interactions, but also the people that will transform the service for the final offering (e.g. production representatives). Again, being able to identify, communicate and translate customer demands are important buyer and supplier capabilities respectively. Also, being able to optimize the fit between the buying company's and the supplier's operations is an important capability for both parties.

5.3.3 Interaction for instrumental services

The key objective for instrumental services is to achieve the desired change in the buying company's processes or resources used within those processes. Usually, representatives of the functional departments or processes at which the service is directed are strongly involved in the ongoing interactions. These services can significantly impact the functioning of organisations, since poor purchase decisions related to consulting services can lead to poor performance, while good decisions can result in good performance [Mitchell, 1994; Soriano, 2001; West, 1997]. Consequently, business development representatives may be involved. Being able to specify

the desired change is an important capability for the buyer, while translating this ‘desire’ into actual change (implementation skills) is an important capability for the supplier. Because of the long-term character of instrumental services, project management skills are important capabilities for both parties.

5.3.4 Interaction for consumption services

Finally, for consumption services, the key objective is to ensure the service supports various organisational processes in a way that facilitates the buying organisation and its employees to carry out their primary tasks [Fitzsimmons et al., 1998; Normann and Ramirez, 1994]. The category mainly consists of a large variety of items that involve significant administrative efforts and with limited importance for the primary process. Therefore, another objective is to achieve an efficient service delivery process. Depending on which service is bought, the internal customers, who are usually strongly involved in the ongoing interactions, can be any functional department, or all.

5.4 AUGMENTING THE ORIGINAL FRAMEWORK

Although Wynstra et al.'s [2006] exploratory studies seem to support the notion of systematic variation in interaction, their studies have some shortcomings. Firstly, case selection was based on convenience rather than on theoretical selection criteria. Secondly, the authors did not specifically develop and validate the research instruments to be used in data collection. We show how we addressed these methodological shortcomings in our methods section. Finally, the findings obtained by Wynstra et al. [2006] mainly concern ‘structural’ aspects of interaction. Van der Valk et al. [2006] argue that considering the dynamic nature of interaction [Håkansson, 1982], more process-oriented dimensions of interaction should be included. Building on the original Interaction Model, Van der Valk et al. [2006] suggest to incorporate the processes of *adaptation* and *communication* in empirical studies of buyer-seller interaction. The latter is conceptualised in terms of the main topics discussed in the buyer-seller dialogue; this dialogue should particularly reflect what the key objectives of interaction are. Van der Valk et al. [2006] propose that:

- For component services, for which the demand is strongly related to the purchase pattern of the buying companies’ customers, adaptations are made with regard to capacity and demand management. For this purpose, the supplier needs to have insight in the buying company’s forecasting system. Communication involves the exchange of information about the buying company’s value proposition.
- For semi-manufactured services, adaptations take place in similar areas as for component services, including the way in which the service is

delivered. Also here, information regarding the buying company's value proposition and demand information is exchanged.

- For instrumental services, the extensive integration between buyer and seller may result in adaptations being made in the organisational structure of both companies. Because of the long-term impact of these services, communication concerns information about the buying company's strategy since this enables the supplier to optimally address the developments within the buying organisation. The service provider in turn provides knowledge/information about relevant developments in the supply market, as to support the buying company's front end processes with the latest innovations.
- For consumption services, adaptations focus mainly on increasing the efficiency of administrative and financial procedures. Communication focuses on daily performance and opportunities for efficiency improvement.

Table 5.1 summarises what the dimensions used to describe an interaction pattern look like for the four types of services. Since earlier research indicated that these variables are fairly crucial when it comes to describing differentiated interaction patterns [Håkansson, 1982], and variation in interaction has been observed for some of the dimensions [Wynstra et al., 2006], the proposed dimensions seem a good starting point for our studying. We may however identify other dimensions of interaction which are not included in the framework, or find a lack of variation on one or more of the proposed dimensions. As such, this empirical study can be used to further develop theory on buyer-seller interaction.

Finally, Wynstra et al. [2006] suggested that the interaction patterns that occur may be influenced by the level of buyer-perceived risk involved. This reflects the ideas brought forward by researchers from the field of Organizational Buying Behavior (OBB), who argue that buyer-perceived risk is an important factor in explaining buying behaviour [Johnston and Lewin, 1996]. For example: Johnston and Bonoma [1981] and McQuiston [1989] found that the functions/ people involved in interactions with suppliers vary with the level of risk involved with a service. We therefore control for risk when analysing patterns of interaction. In line with the OBB research tradition, risk is considered a function of importance and uncertainty; this latter is a function of the complexity and novelty of the purchase.

We now turn to a description of our research design and data collection procedures. We then use the augmented theoretical framework to map patterns of interaction between buyers and sellers of different types of business services.

Table 5.1 Propositions on patterns of interaction for the four types of services [based on Van der Valk et al., 2006; Wynstra et al., 2006]

	Objectives	Critical supplier capabilities	Critical customer capabilities
<i>Component services</i>	<ul style="list-style-type: none"> ▪ The service should fit with the customer's final offering 	<ul style="list-style-type: none"> ▪ Production capacity and quality ▪ Development capabilities (in case of specialized services) 	<ul style="list-style-type: none"> ▪ Translating/communicating final customer demands (on ongoing basis) ▪ Synchronizing the supply of various service components
<i>Semi-manufactured services</i>	<ul style="list-style-type: none"> ▪ The buying company should be able to transform the service in the desired way 	<ul style="list-style-type: none"> ▪ Production capacity and capability to maintain a stable quality ▪ Innovative capabilities (when used as an external expert and for strategic services) 	<ul style="list-style-type: none"> ▪ Translating final customer demands ▪ Optimizing fit between internal and supplier's operations ▪ Synchronizing suitable contact interfaces between internal and the supplier's operations
<i>Instrumental services</i>	<ul style="list-style-type: none"> ▪ The service should affect the customer's primary processes in the desired way 	<ul style="list-style-type: none"> ▪ Business development and innovation ▪ Business and service production design services 	<ul style="list-style-type: none"> ▪ 'Implementation' skills: understanding what fits when, how and for whom
<i>Consumption services</i>	<ul style="list-style-type: none"> ▪ The service should support various core processes 	<ul style="list-style-type: none"> ▪ Ability to supply the desired service and (if needed) adapt it to the specific situation of customer 	<ul style="list-style-type: none"> ▪ Translating/ communicating internal customer demands (on ongoing basis) ▪ Follow up on performance and user satisfaction

Supplier representatives	Customer representatives	Communication	Adaptation
<ul style="list-style-type: none"> ▪ Marketing representatives regarding the supplier's own service ▪ 'Downstream' specialists (knowledgeable of the final offering) 	<ul style="list-style-type: none"> ▪ Buyer specialists regarding the service bought, and marketing representatives knowing the needs of the buyer's customer 	<ul style="list-style-type: none"> ▪ Exchange of information on customer requirements ▪ Fit service with the rest of the offering ▪ Customers' evaluation of service 	<ul style="list-style-type: none"> ▪ Service specification ▪ Service design ▪ Capacity and demand management
<ul style="list-style-type: none"> ▪ 'Production planning' and marketing representatives 	<ul style="list-style-type: none"> ▪ Production and quality representatives 	<ul style="list-style-type: none"> ▪ Exchange of information on customer requirements ▪ Service transformation possibilities 	<ul style="list-style-type: none"> ▪ Service specification ▪ Service design ▪ Service delivery ▪ Capacity and demand management
<ul style="list-style-type: none"> ▪ Product representatives, often including a team of consultants or process engineers 	<ul style="list-style-type: none"> ▪ Business development representatives and affected internal customers 	<ul style="list-style-type: none"> ▪ Exchange of sensitive information about the buying company's primary processes ▪ Effect of service on primary processes 	<ul style="list-style-type: none"> ▪ Organisational structure ▪ Financial procedures ▪ Administrative procedures
<ul style="list-style-type: none"> ▪ Marketing representatives 	<ul style="list-style-type: none"> ▪ Buyers and internal customers 	<ul style="list-style-type: none"> ▪ Service performance ▪ Reducing administrative workload 	<ul style="list-style-type: none"> ▪ Administrative procedures ▪ Financial procedures

5.5 RESEARCH DESIGN

Since the object of this research, i.e. interaction between buyers and sellers of business services, is a dynamic phenomenon with complex links across organisational boundaries which can best be studied in its real life context [Yin, 2003], we opt for case-based research. The case study method has received increased attention as a means for theory development [Dul and Hak, 2007]. Meredith [1998] claims that the emphasis on understanding, which is prevalent in case research, implies a strong focus on theory building. Voss et al. [2002] point out that the number of case-based research papers is growing and acknowledge that the results of case research can be highly influential. Our objectives are twofold: firstly, we intend to describe effective interaction for the four services types. For this purpose, we only look at cases of successful ongoing service exchange. Secondly, we compare these descriptions to find out whether the two buying companies (consistently) differentiate interaction. The descriptions are furthermore compared with findings of Wynstra et al. [2006] and Van der Valk et al.'s [2006] ideas regarding processes of interaction.

We studied buyer-seller interaction for four service purchases (each coming from different classes of the usage-based classification) at ten buying companies. We started our analysis by looking at the data collected at two buying organisations operating in the service industry. We purposefully selected service companies, since we expected that component and semi-manufactured services would be more easily found at service companies. Furthermore, because of their nature, service companies were expected to have a more professional approach to buying services, which would increase the chances of finding variation between different types of services. Conducting the study at multiple buying firms (whereby we expect similar results) enables within-company (cross-service type) and cross-company (within-service type) analyses and enhances robustness of the results [Yin, 2003].

We selected EIA, a Dutch Employment Insurance Agency responsible for the administration and implementation of insured benefits for employees; and TEL, the market leader in the major segments of the Dutch telecommunications market. These companies were selected because they are large, professional and well-performing organisations, at which service purchases are more likely to be successful. Consequently, we expected the service purchases that would be studied to be successful. We deliberately pursued success at the company rather than the service level, since we already had certain selection criteria at the level of the service: in consultation with the researchers, the companies could propose any four services, as long as

they all belonged to different classes of the classification³³. TEL offered us the opportunity to study two instrumental services: during a contract period, the company had recently made significant changes in the ways they dealt with their service providers, and consequently TEL was very interested in an evaluation of those changes. Thus, the study at TEL comprises five services.

During data collection however, the service originally selected as a semi-manufactured service at TEL was found to fit better in the category of component services and was therefore reclassified. Since we had already nearly finished data collection at TEL and since TEL had already made additional resources available for the study of the second instrumental service, we did not want to burden the company with additional data collection. Considering the theory-building character of this study, having only one semi-manufactured service on which to build our analysis was not believed to be highly problematic.

5.6 DATA COLLECTION AND ANALYSIS METHODS

Each of the purchases was studied by means of semi-structured interviews and self-administered questionnaires (method triangulation [Yin, 2003]). Although interaction is a dyadic phenomenon, data was collected at the buying company only for two reasons: 1) we were primarily interested in how buying companies handle different kinds of services; and 2) given the theory-building character of our study, starting by studying interaction at one side of the relationship seems appropriate. An attempt to include the supplier's perspective was made by asking the buying company about the supplier's representatives involved, actions/ behaviours, viewpoints, et cetera.

5.6.1 Interviews

Two to three semi-structured interviews of 1.5 to 2 hours each were conducted with buyers and with contract owners and/ or users (source triangulation; Yin [2003]). The interviews with the buyers focused predominantly on the purchasing process; while the interviews with contract owners focused on what happened after the purchase. The interview guide was based on the lists of questions used in the Industrial Marketing and Purchasing (IMP) studies [Håkansson, 1982]. No recording instruments were used during the interviews, since taping is primarily beneficial when the *exactness* of what people have said (e.g. quotes) is important [Yin, 2003]. In our study, making sense of what people said [Stuart et al., 2002] was sufficient, and consequently, the benefits of taping did not outweigh the disadvantages mentioned by Voss et al. [2002].

³³ Note that the logic applied when selecting the services (cases) is based on theoretical considerations, as opposed to selecting a representative sample from a population, which is a common approach for example in surveys.

Extensive interview descriptions were made and verified with the individual interviewees. Approved descriptions were used to develop case descriptions, which were verified with all interviewees for that case. These case descriptions were furthermore extensively discussed among the research team³⁴ by comparing observations with observations for the other services studied at the same company as well as with observations for that service type at the other company. As such, agreement regarding interpretations was reached and emergent patterns of interaction were identified.

The services selected and their brief descriptions, their respective classifications, and the functions of the people interviewed can be found in Table 5.2. Table 5.3 summarises how we dealt with the issues of validity and reliability.

Table 5.2 Services and informants

(CMP: component, SEM: semi-manufactured, INS: instrumental, CNS: consumption)

	Service	Informants	Type
<i>EIA</i>	<i>Pension administration services</i> (collecting and administering fees, making payments to pensioners)	<ul style="list-style-type: none"> ▪ Senior Buyer Personnel & Organisation ▪ Secretarial Officer Pension Fund 	CMP
	<i>Payment of social benefits</i> (executed by a bank)	<ul style="list-style-type: none"> ▪ Senior Buyer Facilities ▪ Manager (mgr) Cash Management 	SEM
	<i>Office automation services</i> (software, hardware and generic services)	<ul style="list-style-type: none"> ▪ Senior Buyer ICT ▪ Project Leader European Tender Office Automation ▪ Portfolio Mgr Work Unit Services 	INS
	<i>Installation & maintenance of cables and connections for work spaces</i> (phone, Internet)	<ul style="list-style-type: none"> ▪ Senior Buyer ▪ Service Mgr 	CNS
<i>TEL</i>	<i>Inbound call centre services</i>	<ul style="list-style-type: none"> ▪ Category Mgr Marketing & Call Centre Services 	CMP
	<i>Arranging infrastructure at customer locations</i> (i.e. linking an office building to a glass fibre network)	<ul style="list-style-type: none"> ▪ Category Mgr Construction & Engineering 	CMP
	<i>IT Outsourcing</i> (managed IT, software, data centre)	<ul style="list-style-type: none"> ▪ Mgr Group Category ICT ▪ Chief Information Officer Royal TEL ▪ Former Chief Information Officer Division Fixed 	INS
	<i>Marketing services</i> (media, promotions, PR agency, market research and contents)	<ul style="list-style-type: none"> ▪ Category Mgr Marketing & Call Centre Services ▪ Category Purchaser Marketing Communications ▪ Category Purchaser 	INS
	<i>Temporary labour</i> (focus on support staff (extra "hands"))	<ul style="list-style-type: none"> ▪ Mgr Procurement Professional, Financial & HR Services ▪ Mgr Human Resources call centre 	CNS

³⁴ The research team consisted of one principal researcher and the two co-authors of this paper.

Table 5.3 Validity and reliability in the case studies

Type of validity	Methods of addressing this in the case studies
<p><i>Construct validity</i> “establishment of correct operational measures for the concepts being studied”</p>	<ul style="list-style-type: none"> ▪ Triangulation of questionnaire and interview data ▪ Triangulation of multiple informants: different internal representatives ▪ All informants received draft versions of the interview report for comments ▪ Draft versions of the complete case report were verified with at least one key informant from each buying firm ▪ Three research team members gave input during data collection and analysis ▪ Overall results discussed during round table meetings attended by prime contacts ▪ Result: emergent explanations adjusted and expanded; participants agreed to the interpretations
<p><i>Internal validity</i> “establishing causal relationships whereby certain conditions are shown to lead to other conditions, as distinguished from spurious relationships”³⁵</p>	<ul style="list-style-type: none"> ▪ Use of conceptual framework ▪ Result: relationships between the different variables from the conceptual framework identified and substantiated
<p><i>External validity</i> “establishing a domain in which the study’s findings can be generalised”</p>	<ul style="list-style-type: none"> ▪ Theoretical selection of cases at the firm level and the level of the service purchase ▪ Result: revised framework applicable to different types of firms and service purchases
<p><i>Reliability</i> “demonstrating that the operations of a study can be repeated with the same results”</p>	<ul style="list-style-type: none"> ▪ Development of case protocol ▪ Development of (interview) questionnaire ▪ Result: methodology transparent and repeatable

Based on: Yin [2003].

³⁵ In determining internal validity, we follow a process-based approach by investigating for each individual case why the configuration of dimensions results in the desired effect. According to Eisenhardt [1989], understanding this 'why' of the relationship is crucial in establishing internal validity.

5.6.2 Self-administered questionnaires

The initial insights obtained from the interviews on success and risk were complemented/ verified with data obtained through the use of self-administered questionnaires, which measured on a five-point Likert scale the extent to which respondents agree or disagree with statements related to these concepts (Appendix D).

The questionnaires measured the interviewees' perceptions of *success* relative to their expectations in advance of the contract period. This is in line with Parasuraman [1998, p. 312], who noted that service quality is a function of a gap between expectations and performance. In conceptualising success, we follow Grönroos [1982] and Edvardsson and Olsson [1996], who distinguish between the customer outcome and the customer process. Items were developed to evaluate success associated with both sub dimensions. *Risk* was conceptualised as a function of importance and uncertainty; the latter in turn is a function of complexity and novelty of the service to the buying firm [see for example McQuiston, 1989]. Items were developed to measure these individual concepts.

A pre-test was conducted among fellow academics and practitioners, who were asked to fill out the questionnaire with a specific buying situation in mind (for example: the purchase of an advertising campaign by a Facility Services Provider). They were furthermore asked to provide comments on the content of questions (to determine whether the concepts being studied had been operationalised in an appropriate manner), as well as on the phrasing (to ensure the clarity of questions). The feedback obtained was used to make adjustments to the questionnaire where necessary.

When analyzing the results for *success*, we assumed equal weights for both process and outcome, and averaged the scores on all items measuring success ($1.0 \leq \text{success} \leq 5.0$). In order to obtain a single measure of *risk*, we multiplied the average score for importance with the average score for uncertainty ($1.0 \leq \text{risk} \leq 25.0$)³⁶. The results for the individual services were verified with all interviewees.

³⁶ We chose to multiply the importance and uncertainty scores, since this leads to an exponential increase in risk when either one or both dimensions are high. As a result, we are able to more clearly differentiate between services with low, medium and high risk. Averaging the importance and uncertainty scores on the other hand would potentially even out a high score on either or both these dimensions, which does not properly reflect the associated level of risk. According to Peter and Ryan [1976], a multiplication approach to obtain an overall indication of risk is common. Mitchell [1999] states that the logic for this multiplicative model is not provided in literature, but is likely to stem from probability theory, in which probabilities are multiplied with monetary values to calculate expected gains.

5.6.3 Results of the questionnaires

We now present the results of the questionnaires (Figure 5.1). The horizontal axis represents the success associated with the outcome of the interaction (scale from 1 to 5); the vertical axis represents the success associated with the process of interaction (scale from 1 to 5). The size of the circles corresponds with the level of buyer-perceived risk involved with the service purchase (L = low risk, M = medium risk, and H = high risk). It can immediately be seen that the service purchases are quite nicely positioned along a diagonal line: it seems that the customer process and customer outcome are strongly correlated. One might even posit that high satisfaction with the process precedes high satisfaction with the result.

Figure 5.1 furthermore shows that overall the service purchases have average scores with regard to both the interaction process and outcome. Thus, the services purchased can indeed be considered successful, though not highly successful. Notably, the services associated with the highest level of perceived risk (the instrumental service at EIA and one of the instrumental services at TEL) are the least successful service purchases. Thus, we expect these cases to display a somewhat different interaction pattern.

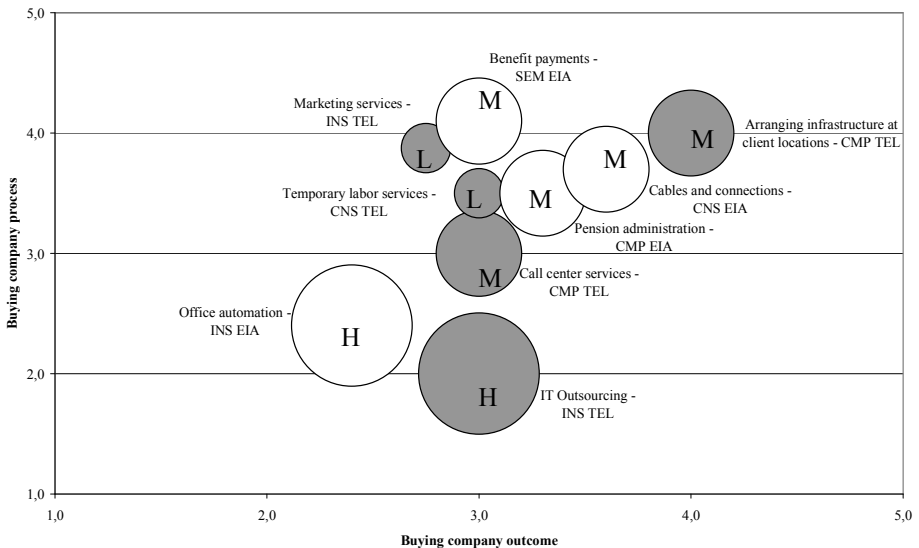


Figure 5.1 Success and risk associated with the interaction of the service purchases at EIA and TEL (CMP = component, SEM=semi-manufactured, INS= instrumental, CNS=consumption)

5.7 CROSS-SERVICE TYPE ANALYSES AT EIA AND TEL

We now turn to the interactions observed for the different types of services studied. First, we investigate the services purchased by each of the two companies in detail to see whether the dimensions of interaction differ for the different service types (within-company, cross-service type analysis). As an illustration of our analysis methods, we first present descriptions of our case data. For purposes of length, we only present case descriptions for two services at one of the companies. We purposefully choose one service of each of the two main groups (component/ semi-manufactured versus instrumental/ consumption) to maximize variation in interaction. The data for all four services is summarised in Table 5.4. We then discuss some of the dimensions of interaction to demonstrate how they vary across the four service types.

A similar procedure was followed to analyse the findings at TEL. We will not elaborate on the detailed data, but directly move on to confronting the findings at EIA and TEL to highlight similarities and differences (within-service type, cross-company analysis). Again, we discuss some of the dimensions to illustrate our approach. Based on these analyses, we develop patterns of effective interaction and confront these patterns with the earlier findings of Wynstra et al. [2006] and the ideas by Van der Valk et al. [2006].

From the group of services that moves downstream to EIA's customers, we provide a detailed description of the component (CMP) service: pension administration services. From the group of services that remain within the buying company, we elaborate on the instrumental (INS) service: office automation.

5.7.1 Pension administration services (EIA_CMP)

Every employee pays pension fees during his or her working life, from which they will obtain monthly payments upon retirement. The EIA pension fund is administered by an external provider, and encompasses the collection of fees from employers, carrying the administration of these fees and making payments to pensioners. The administrator as such is directly providing services to EIA's customers and this service can thus be considered a *component service*.

The purchasing team consisted of two, later three, representatives of the board of the pension fund, the director of the employers' 'Pension bureau', purchasing and an external consultant, who provided both content-related and administrative support. This team had an advisory role towards the pension

board. EIA specified the services that they wanted to buy, as well as special circumstances that might occur and the way the prices should be determined. Services were specified by means of mapping process flows and identifying measurement moments with corresponding Key Performance Indicators (KPIs). In order to assess the administrator in advance of the purchase decision, EIA requested certificates and reference customers, visited the administrators and had them present themselves to the board of the pension fund.

In the ongoing phase, the purchasing team becomes a project team that works on the transition process. During this process, both the pension board and the purchasing team have quite intensive contact with the administrator. Ongoing contract management is a joint task for the product manager and the buyer. The product manager is responsible for content-related issues, whereas purchasing is concerned with performance evaluation and improvement. The administrator makes quarterly information available to the board (this information is checked by the pension fund's accountant) and monitors external developments. A client or fund manager and the pensions' director attend the monthly board meetings.

5.7.2 Office automation services (EIA_INS)

Office automation for work spaces includes investments in software (licenses), hardware (e.g. PCs, laptops) and generic services (e.g. email, file printing services). These investments have a long-term character and impact EIA's primary processes: therefore, this service is classified as an *instrumental service*.

EIA put together a project team consisting of a buyer, legal representatives, representatives of ICT service management (manage IT services on a daily basis), architects/ designers and representatives from contract management (about 15 people in total). This team determined the requirements based on information obtained from suppliers and from an analysis of internal customer demands and wishes. Capabilities that were emphasised by EIA were efficiency (by making total cost a supplier selection criterion), quality, flexibility, innovativeness (by making added value a selection criterion), and reliability.

After the supplier had been selected, several documents were drawn up to support the overall contract. In the ongoing phase, weekly operational meetings take place which are attended by ICT service management and purchasing. Monthly, tactical meetings are held to deal with problems that could not be resolved at the operational level and to prepare for strategic meetings. The latter takes place once or twice a year and involves the Board of Directors of EIA and the supplier's directors; here, the overall relationship is preserved. Purchasing will sit in on the strategic meetings if they involve issues that may influence the commercial relationship.

Table 5.4 Findings for the different types of services at EIA

	Key objectives	Supplier capabilities	Buying company capabilities
<i>EIA_CMP</i> <i>Pension administration</i>	<ul style="list-style-type: none"> ▪ Making sure that the administration service fits with EIA and its other services 	<ul style="list-style-type: none"> ▪ Delivery capabilities like accuracy and the ability to deal with a considerable number of transactions ▪ Understand that they deal with end customers 	<ul style="list-style-type: none"> ▪ Ability to clearly specify requirements ▪ Ability to clearly communicate the consequences of not meeting requirements
<i>EIA_SEM</i> <i>Payment of social benefits</i>	<ul style="list-style-type: none"> ▪ Making sure the payment process becomes an integral part of EIA's primary processes 	<ul style="list-style-type: none"> ▪ Delivery reliability ▪ Flexibility (peak demand) ▪ Understand how their performance affects EIA's performance 	<ul style="list-style-type: none"> ▪ Ability to clearly specify requirements ▪ Ability to clearly communicate the consequences of not meeting requirements ▪ Ability to live up to requirements and delivery reliability issues themselves
<i>EIA_INS</i> <i>Office automation</i>	<ul style="list-style-type: none"> ▪ Achieving the desired effect which is enabling EIA employees in their daily activities 	<ul style="list-style-type: none"> ▪ Technical capabilities: quality, operationally enabling ▪ Understand how their performance affects EIA's daily operations ▪ Ability to increase efficiency 	<ul style="list-style-type: none"> ▪ Ability to clearly communicate requirements and how the supplier can enable EIA
<i>EIA_CNS</i> <i>Installation & maintenance of cables/ connections at work spaces</i>	<ul style="list-style-type: none"> ▪ The cables and connections required for EIA to conduct daily business 	<ul style="list-style-type: none"> ▪ Technical capabilities: quality, be operationally enabling 	<ul style="list-style-type: none"> ▪ Create correct overview of where cables and connections are needed and how many

Supplier representatives	Buying company representatives	Communication	Adaptation
<ul style="list-style-type: none"> ▪ Fund manager ▪ Director Pensions 	<ul style="list-style-type: none"> ▪ Involvement of representatives of board pension fund, employer's Pension bureau, purchasing, external consultant – multiple representatives for the board, one representative for other functions 	<ul style="list-style-type: none"> ▪ Transition process (transferring operations to the new administrator), SLA ▪ During transition process daily operational contact with project team ▪ In ongoing phase monthly meetings to discuss collaboration and performance 	<ul style="list-style-type: none"> ▪ New pension fund created to which the existing funds were migrated
<ul style="list-style-type: none"> ▪ (Senior) Account manager ▪ Two assistants of account manager ▪ Director of the bank ▪ Board 	<ul style="list-style-type: none"> ▪ Involvement of Director Financial-Economic affairs, cash management, purchasing, legal representatives, external consultant – one or multiple representatives per discipline 	<ul style="list-style-type: none"> ▪ Fine-tuning payments, planning capacity and demand, opportunities for improvement, trends/developments ▪ Intensive communication at various organisational levels (operational/tactical strategic) regarding daily operations, developments, market trends, new products/ services, et cetera 	<ul style="list-style-type: none"> ▪ Design of uniform payment process for all former implementation authorities, adaptations to working procedures and systems ▪ Newly established cash management department and a technical support department
<ul style="list-style-type: none"> ▪ Business Unit/ Account manager ▪ Bid manager and specialist project team ▪ Operational ICT specialists ▪ Board of Directors 	<ul style="list-style-type: none"> ▪ Involvement of Director ICT, purchasing, contract management, legal, service management, architects – one or multiple representatives per discipline 	<ul style="list-style-type: none"> ▪ Regular communication at various organisational levels (operational/tactical/strategic) regarding issues ranging from service performance to the strategic relationship ▪ Service level meetings for daily coordination (multiple times per week) 	<ul style="list-style-type: none"> ▪ No adaptations
<ul style="list-style-type: none"> ▪ Account manager ▪ Technical specialist headed by a team leader 	<ul style="list-style-type: none"> ▪ Involvement from legal, financial control, ICT control, service management, facility experts and external people – one or multiple representatives per discipline 	<ul style="list-style-type: none"> ▪ Weekly service level meetings to discuss performance on KPIs ▪ Daily coordination of service activities ▪ Quarterly meetings purchasing and supplier to discuss past business and performance 	<ul style="list-style-type: none"> ▪ No adaptations

5.7.3 Comparison across all four service types

An analysis of the observations in light of the dimensions of interaction (Table 5.4) leads us to conclude that interaction at EIA is differentiated for the all dimensions studied.

For example, *buying company representatives* involved with the component service are people knowledgeable about pensions and about the customers of the pension fund ("marketing" representation). For the semi-manufactured service, people involved with the service "production" process (making benefit payments) are strongly involved. For the instrumental service, people knowledgeable about the processes at which the service is targeted (IT) are strongly involved; this includes both business development specialists and (operational) service managers. Finally, internal customers (service management) and users are involved with the consumption service.

Critical supplier capabilities for the component service are delivery reliability, the ability to deal with high transaction volumes and understanding that they are dealing with end customers. For the semi-manufactured service, again, delivery reliability is important (because of monthly demand peaks), as well as flexibility and an understanding of how the supplier's performance affects EIA's performance. For the instrumental service, the supplier requires excellent technical capabilities, as well as an understanding of how their performance affects EIA's daily processes. Finally, for the consumption service, the supplier has to be able to achieve high quality in service provision.

Similar analyses can be made for the other dimensions. Adaptations however were only observed for component and semi-manufactured services.

5.7.4 Cross-service type analysis at TEL

A data table similar to Table 5.4 was constructed for the cases studied at TEL (Table 5.5). Also here, the interactions differ with regard to all dimensions of interaction studied.

Looking at what *buying company representatives* are involved, we find that business representatives are involved with the two component services: these people are knowledgeable about the buying company's final offering and end customer requirements. With instrumental services, co-producers of the service (content-experts from IT and marketing) and users (representatives of the businesses that have an IT or marketing related need) are involved. For the consumption service, various internal customers are involved.

Regarding *critical supplier capabilities*, the ability to deliver high quality is important for component services, as well as being able to adapt to the buying organisation's company culture. After all, the supplier is an extension of TEL's organisation, and represents TEL in the eyes of the final customer. For the instrumental services, the suppliers have to be operationally enabling, deliver high quality and be able to contribute to improving TEL's front end

processes (for example by developing an IT solution that will help TEL to better serve existing or start serving new customers). Lastly, in the case of the consumption service, the supplier has to excel in service delivery (being able to deliver the right people at the right time). Again, similar analyses can be made for the remaining dimensions.

5.8 WITHIN-SERVICE TYPE, CROSS-COMPANY ANALYSIS

By comparing the findings at EIA and TEL, we can develop patterns of effective interaction. In doing so, we have to take into account that the two IT related services were not as successful as we had expected. It is therefore particularly interesting to compare the pattern for the marketing services with the patterns for the two IT services, to see whether and how they differ. First however, in line with our decision to deal extensively with two of the service types and less extensively with the others, we make a complete comparison for the three (successful) component services studied by discussing each individual dimension of interaction. We then repeat this exercise for the instrumental services.

5.8.1 Cross-company analysis for the component services

Looking back at the descriptions for the three component services studied, we see that both EIA and TEL involve people knowledgeable about the offering to end customers and the requirements of these end customers. This reflects the key objective of component services, which is to make sure that the service fits seamlessly with the buying company's offering to their customers. Important capabilities for the buying companies are therefore to clearly communicate requirements, as well as how they want the supplier to deal with their customers in terms of culture and behaviour. Important supplier capabilities are delivery reliability and quality, as well as understanding how they should treat their buying company's customers. The supplier involves sales people and people knowledgeable about the downstream service being offered. Important topics in the communication are end customer requirements, supplier performance and improvement initiatives. The adaptations made for the three component services vary: whereas EIA made a change to its internal organisation, TEL made adaptations to the specification for call centres by including KPIs. TEL's supplier had to make adaptations with regard to capacity and demand management for the infrastructural services.

Based on this analysis, we conclude that the interactions for component services are quite consistent across the two companies. It thus seems that these variations are systematic. Based on our analyses, we posit that an effective interaction pattern for component services...

Table 5.5 Findings for the different types of services at TEL

	Key objectives	Supplier capabilities	Buying company capabilities
<i>TEL_CMP1 Call centre services</i>	<ul style="list-style-type: none"> ▪ Making sure the service fits with TEL's total offering (as a final step in the customer service process) 	<ul style="list-style-type: none"> ▪ Ability to deliver high and consistent quality and to improve efficiency 	<ul style="list-style-type: none"> ▪ Ability to communicate to supplier what the call centre service should be like in relation to TEL's business processes ▪ Ability to communicate company culture and behaviour
<i>TEL_CMP2 Arranging Infrastructure at client locations</i>	<ul style="list-style-type: none"> ▪ Making sure the service fits with TEL's total offering (supplier is extension of TEL organisation at client locations) 	<ul style="list-style-type: none"> ▪ Ability to deliver high quality ▪ As an extension of TEL's business, the supplier has to fit with regard to culture and professionalism 	<ul style="list-style-type: none"> ▪ Ability to communicate company culture and behaviour
<i>TEL_INSI IT Outsourcing</i>	<ul style="list-style-type: none"> ▪ Achieving the desired effect of enabling the TEL organisation through professional IT support 	<ul style="list-style-type: none"> ▪ Operational excellence in terms of IT ▪ Ability improve TEL's front end processes ▪ Ability to transform experiences with other customers into ideas for improvement 	<ul style="list-style-type: none"> ▪ Ability to communicate desired effects of service on primary processes ▪ Understand how TEL's performance affects supplier performance ▪ Being operationally enabling
<i>TEL_INSS2 Marketing services</i>	<ul style="list-style-type: none"> ▪ Achieving the desired improvement and sustenance of business performance (such as market share and profitability) ▪ 	<ul style="list-style-type: none"> ▪ Ability to contribute to TEL's business performance ▪ Ability to deliver outstanding quality 	<ul style="list-style-type: none"> ▪ Focus on the content/result rather than the process of providing marketing services (managing output) ▪ Being operationally enabling
<i>TEL_CNS Temporary labour services</i>	<ul style="list-style-type: none"> ▪ How the temp labour agencies support TEL's primary processes 	<ul style="list-style-type: none"> ▪ Ability to deliver the right people at the right time (reliability) 	<ul style="list-style-type: none"> ▪ Ability to specify and communicate the requirements of the various internal customers

Supplier representatives	Buying company representatives	Communication	Adaptation
<ul style="list-style-type: none"> ▪ Account manager ▪ People knowledgeable on how to service customers that call 	<ul style="list-style-type: none"> ▪ Involvement of purchasing (category manager), representatives of business divisions – one or two representatives per discipline 	<ul style="list-style-type: none"> ▪ Monthly meetings to review performance and operational efficiency, and to discuss improvement initiatives 	<ul style="list-style-type: none"> ▪ TEL developed KPI tree to manage call centre performance
<ul style="list-style-type: none"> ▪ Account manager 	<ul style="list-style-type: none"> ▪ Involvement of procurement, business representatives (one representative becomes contract manager) – one representative per discipline 	<ul style="list-style-type: none"> ▪ Requirements, planning, daily coordination, results of vendor rating ▪ Daily coordination of activities, periodical meetings to discuss quality performance and improvement initiatives 	<ul style="list-style-type: none"> ▪ Adaptations with regard to capacity and demand management
<ul style="list-style-type: none"> ▪ Product (ICT) specialists ▪ Account manager ▪ Directors 	<ul style="list-style-type: none"> ▪ IT, procurement, legal, former Director IT business division, higher management – multiple representatives per discipline, large team complemented with temporary members 	<ul style="list-style-type: none"> ▪ Intensive face-to-face communication on a daily basis, about the content of the service and the collaboration/relationship (strategy alignment, transition process, optimization, partnership, progress) 	<ul style="list-style-type: none"> ▪ Introduction of KPIs monitored by dedicated KPI Office
<ul style="list-style-type: none"> ▪ Product (marketing) specialists ▪ Account manager ▪ Director advertising agency 	<ul style="list-style-type: none"> ▪ Involvement of purchasing (category manager), marketing/communication representatives, business stakeholders – one or two representatives per discipline 	<ul style="list-style-type: none"> ▪ Intensive communication during assignments ▪ Monthly meetings to discuss scorecards ▪ Strategy alignment and relationship 	<ul style="list-style-type: none"> ▪ KPIs monitored through marketing dashboard ▪ Increasing transparency in marketing expenditures
<ul style="list-style-type: none"> ▪ Account manager ▪ HR specialists for selecting candidates ▪ Technical specialists for maintaining the intranet application 	<ul style="list-style-type: none"> ▪ Level and type of involvement depends on type of labour being purchased (various internal customers) ▪ Category management 	<ul style="list-style-type: none"> ▪ Establishing volume agreements ▪ Communication limited to hiring temporary employees ▪ Annual evaluation to discuss performance 	<ul style="list-style-type: none"> ▪ Redesign of hiring process at TEL

- ...has as a key objective to make sure that the service fits with the customer's final offering;
- ... is characterised by involvement from people knowledgeable about the downstream service to be provided and sales/ account managers from the side of the supplier;
- ...is characterised by involvement from representatives of external customers from the side of the buyer;
- ...is characterised by timely delivery, quality level, and the ability to improve the buying company's front end processes as being important supplier capabilities.
- ...is characterised by clearly communicating customer requirements and desired behaviour as being important buying company capabilities.
- ... has the customer's evaluation of the service (performance) as well as the buyer-seller relationship and (future) market developments as important topics in the communication.

Because we obtained only limited observations on adaptations, we did not include this dimension in our specification of an effective interaction pattern. We come back to this issue in the final section of our paper.

5.8.2 Cross-company analysis for the instrumental services

A similar analysis can be made for instrumental services. Also here, the dimensions of interaction are largely similar across the three services studied. We thus find similar patterns of interaction for the three instrumental services; yet, these services are not equally successful. We come back to this issue in the last section of this paper.

The key objective of interaction is to achieve the desired change in the buying company's primary processes. This requires implementation skills from the side of the supplier, and the ability to identify the desired change and current status of the primary processes at which the service is targeted. The supplier involves experts on the service to be delivered (here: IT and marketing), while the buyer involves the people involved with the processes at which the service is directed. Communication mostly concerns implementation progress and performance on pre-determined Key Performance Indicators (KPIs). Adaptations concern the specification of the service, which is strongly KPI-based. Table 5.6 summarises the propositions for instrumental services (as well as the other two service types).

Table 5.6 Propositions on effective interaction for different types of business services

<i>P1 In the ongoing buyer-seller interaction, the key objective of interaction for ...</i>		
<i>a</i>	<i>component services</i>	... is to make sure that the service fits with the customer's final offering.
<i>b</i>	<i>semi-manufactured services</i>	... is for the service to fit seamlessly with the buying company's primary processes.
<i>c</i>	<i>instrumental services</i>	... is to make sure that the service affects the customer's primary processes in the desired way.
<i>d</i>	<i>consumption services</i>	... is to make sure that the service supports various core processes.
<i>P2 In the ongoing buyer-seller interaction for ...</i>		
<i>a</i>	<i>component services</i>	... from the side of the supplier, sales people and people knowledgeable about the downstream service being provided will be involved.
<i>b</i>	<i>semi-manufactured services</i>	... from the side of the supplier, account managers and higher level management are involved.
<i>c</i>	<i>instrumental services</i>	... from the side of the supplier, product experts are involved, as well as sales people and higher level management are involved.
<i>d</i>	<i>consumption services</i>	... from the side of the supplier, account managers and technical specialists are involved.
<i>P3 In the ongoing buyer-seller interaction for ...</i>		
<i>a</i>	<i>component services</i>	... from the side of the buyer representatives of external customers (often the marketing discipline) are involved. The level of managerial involvement will be high.
<i>b</i>	<i>semi-manufactured services</i>	... from the side of the buyer, representatives of external customers are involved as well as co-producers of the service.
<i>c</i>	<i>instrumental services</i>	... from the side of the buyer, people involved with the primary processes of the buying company will be involved, as well as representatives of internal customers. The number of people involved with these services will be high, as will the level of managerial involvement.
<i>d</i>	<i>consumption services</i>	... from the side of the buyer, the internal customers will be mainly involved. The level of managerial involvement will be low.

Table 5.6 Continued

<i>P4 In ongoing buyer-seller interaction, important supplier capabilities for ...</i>		
<i>a</i>	<i>component services</i>	... concern the ability to deliver timely and with the desired quality level and the ability to improve the buying company's front end processes.
<i>b</i>	<i>semi-manufactured services</i>	... concern reliability and flexibility with regard to service delivery.
<i>c</i>	<i>instrumental services</i>	... concern being enabling to the buying company, innovativeness and the ability to improve the performance of the buying company.
<i>d</i>	<i>consumption services</i>	... concern delivery reliability, as well as being able to achieve efficiency improvements.
<i>P5 In ongoing buyer-seller interaction, important customer capability(ies) for ...</i>		
<i>a</i>	<i>component services</i>	... are clearly communicating service requirements, as well desired behaviour.
<i>b</i>	<i>semi-manufactured services</i>	... are clearly communicating service requirements and desired behaviour, as well as living up the requirements as a buying company.
<i>c</i>	<i>instrumental services</i>	... is to clearly communicate the desired effect of the service.
<i>d</i>	<i>consumption services</i>	... is to clearly specify the requirements of various internal customers.
<i>P6 In ongoing buyer-seller interaction, critical issues in the buyer-seller dialogue for ...</i>		
<i>a</i>	<i>component services</i>	... are the customer's evaluation of the service (performance) as well as the buyer seller relationship and (future) market developments.
<i>b</i>	<i>semi-manufactured services</i>	... are the coordination of activities, specifically related to capacity and demand issues.
<i>c</i>	<i>instrumental services</i>	... are how the service affects the primary processes (performance) as well as the buyer-seller relationship and strategy alignment.
<i>d</i>	<i>consumption services</i>	... are service delivery (performance) as well as efficiency improvement.
<i>P7 In ongoing buyer-seller interaction, adaptations for ...</i>		
<i>a</i>	<i>component services</i>	... concern the service specification.
<i>b</i>	<i>semi-manufactured services</i>	... concern the service delivery process.
<i>c</i>	<i>instrumental services</i>	... concern service specification, organisational structure and working procedures.
<i>d</i>	<i>consumption services</i>	... concern operational processes.

5.9 DISCUSSION

Our results regarding the structural dimensions of interaction largely support the findings of Wynstra et al. [2006]. For communication, the propositions brought forward by Van der Valk et al. [2006] are supported; the propositions for adaptations however could not be supported. Possibly, for some of the services studied, the contract may be too new for adaptations to have occurred. It may also be possible that adaptations do not occur at all: think of simple legal services which are fairly standardised and in a mature phase of their life-cycle. Consequently, the service and the buyer-seller collaboration will hardly be subject to change.

We also observed variation beyond the dimensions studied. The number of representatives involved is generally higher for *all* four services studied at EIA. We consider this variation to be company-specific. A possible explanation can perhaps be found in EIA's semi-governmental character: as a result, EIA involves more peripheral functions (such as legal, finance, and external consultants) in the ongoing interactions. Indeed, Johnston and Bonoma [1981] found that the more formal the organisation, the larger the number of functional disciplines (and thus the number of people) involved in the buying centre.

However, at the level of the *service type*, the number of people involved was highest with the two IT services (instrumental) studied. This can be explained from the fact that an instrumental service has an impact "on the entire way in which the buying company operates its business" [Wynstra et al., 2006, p. 487]. As a result, instrumental services require a large degree of integration between the provider's and the buyer's processes and many departments are affected. Extensive integration increases the complexity and eventually the risk of the service purchase: this positively affects the size of the buying centre and the level of managerial involvement [Johnston and Bonoma, 1981]. Wynstra et al. [2006] state that the investment-like character of instrumental services will lead to higher-level management involvement.

From these additional observations we can conclude that in addition to some company-specific variation, there may be a relationship between the level of perceived risk associated with the service (high impact on customer satisfaction, high expenditures, long-term impact on the company) and the interaction patterns observed (i.e. number of people involved and higher level management involvement). Note that the risk was medium for marketing services, as a result of which these variations are not observed here.

5.10 CONCLUSION

This paper has addressed the topic of ongoing buyer-seller interaction in the context of buying business services. While the service encounter and its associated interactions are high on the SOM research agenda, these ongoing

interaction processes have not yet been investigated in great detail by either SOM or PSM researchers.

We empirically investigated systematic variation in buyer-seller interaction for nine services at two companies and conclude that buying companies consistently differentiate their ongoing interaction for different service types. Our observations furthermore are in line with the results of prior studies by Wynstra et al. [2006] and support Van der Valk et al.'s [2006] propositions on buyer-seller communication. We had limited observations for adaptations: as a result, the propositions of Van der Valk et al. [2006] could not be supported.

Combining these revised descriptions of effective ongoing interaction with the usage-based classification of business services results in a typology of effective buyer-seller interaction. Such a typology specifies what interaction patterns are most appropriate for the four types of services and can be used by buying companies and service providers to explicitly design their mutual interactions.

In contrast to our expectations that the patterns for successful and less successful instrumental service purchases would differ, we found one and the same interaction pattern for successful and less successful instrumental services. Possibly, the varying levels of success can be explained by the levels of buyer-perceived risk involved: apparently, high risk should be reflected in the extent to which interactions are explicitly designed, or else the service purchase will not be successful. This does not mean that the propositions we developed are meaningless: after all, the propositions for component and semi-manufactured services are based on cases of medium to high-risk purchases. Future research should therefore aim to identify an effective pattern for high-risk instrumental services.

A next step would be to establish whether the effective patterns for high-risk services are non-trivial. In other words: do the interaction patterns for successful ongoing service exchange differ substantially from the interaction patterns for service exchanges that are unsuccessful? For the purpose of such an analysis, in a future paper, we could compare a highly successful service purchase and a less successful service purchase in each category. The findings can be used to further develop our propositions regarding effective interaction.

5.10.1 Limitations and future research

Despite the contributions made in this study, a few criticisms may be raised. One of these criticisms is related to the fact that we did not collect data at both the buyer and the supplier. However, we were primarily interested in how buying companies deal with different kinds of business services. Furthermore, including suppliers in data collection would have substantially increased the size of the study. Finally, considering the theory-building character of this research and the fact that we have some data about the

supplier, we do not consider one-sided data collection to be highly problematic. Further research however should be based on two-sided data collection.

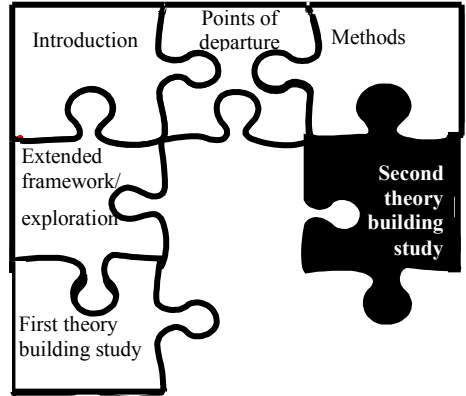
Another important limitation results from the fact that only one semi-manufactured service was included in the study. Although replication of this study is needed for all service types, future research should specifically seek to include a sufficient number of semi-manufactured services.

This paper presents a useful starting point for further research into buyer-seller interaction in business services, in the form of a conceptual framework in combination with a set of propositions regarding effective patterns of interaction. Buying companies can use these propositions as guidelines for designing suitable interfaces with their suppliers and appropriate buyer-seller interaction processes. The insights regarding successful interaction patterns are equally relevant for sellers of business services, since it helps them to address the right issues for the buyer and involve the appropriate functional disciplines and resources.

Chapter 6 Second theory building study

This chapter presents the results of an second investigation of what makes up an effective pattern of interaction. A successful and an unsuccessful service purchase are studied in each of the four classes of the classification. The interaction patterns for the successful and the unsuccessful service purchase are compared to identify a non-trivial pattern of interaction which will hereafter be referred to as the ‘effective’ pattern.

The results of this study demonstrate that for each of the four service types, successful and unsuccessful service purchases are associated with different interaction patterns. Furthermore, a set of generic success factors for successful ongoing service exchange are identified.



This article is currently under review at an operations management journal.

Chapter 6

Identifying Effective Patterns of Ongoing Interaction between Buyers and Suppliers of Business Services³⁷

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ABSTRACT

The design and control of the encounters which comprise service processes has become an important area of service operations management research. Within these encounters, the specification of the interactions that take place between service providers and customers becomes highly important. Researchers in the field of purchasing and supply management however seem to have failed to acknowledge the importance of the interactions between buyers and sellers after the purchase decision has been made, and have mainly focused on the initial stages of the purchase process.

This paper adopts a purchasing and supply perspective and presents the results of eight theory-building case studies aimed at identifying what an effective pattern of ongoing buyer-seller interaction, i.e. a pattern that contributes to successful ongoing service exchange, looks like. We study ongoing buyer-seller interaction for different types of services, comparing a highly successful service purchase to a less successful service purchase for each of the four service types. We find that effective interaction for each of the service types is associated with differing key objectives, functional involvement, organisational capabilities, and content in the buyer-seller dialogue. Furthermore, we find that buying companies are more successful at buying services when they develop a proper service specification, actively perform contract management activities, are actively involved during the start-up/ transition phase of the contract, and have defined a detailed communication structure including topics to be discussed and meeting moments. Both buying companies and service providers can use these effective patterns to design the interface and interaction processes in a way that contributes to successful ongoing service exchange.

Keywords: purchasing, business services, service operations, multiple case study

³⁷ The authors gratefully acknowledge the useful comments of Ferdinand Jaspers and Mark van de Vijver

6.1 INTRODUCTION

Increased outsourcing and a growing importance of intangibles results in firms increasingly moving into service activities. As a result, the need for and the potential of supply chain management in services increases [2006]. Indeed, the procurement of business services has become a substantial element in companies' total acquisition of external resources [Axelsson and Wynstra, 2002; Ellram et al., 2004]. Purchasing business services however has not been directly analyzed in operations management (OM) research [Smeltzer and Ogden, 2002].

This emphasizes the need for more scholarly work on business services [Brown, 2002], particularly from a purchasing and supply management (PSM) perspective [Carter and Ellram, 2003; Sheth, 1996]. The general research focus of most OM academics is (still) manufacturing-oriented [Nie and Kellogg, 1999]; likewise, PSM research has traditionally focused on goods. The literature that is available often centres around one specific type of services (e.g. advertising [Lichtenthal and Shani, 2000; West, 1997] or consultancy [Mitchell, 1994; Stock and Zinszer, 1987]). Similarly, Roth and Menor [2003] indicate that service operations management (SOM) research is highly fragmented and revolves mostly around specific industry sectors, research methods or specific decision-making issues. Consequently, Smeltzer and Ogden [2002] call for research that deals with the variety in business services, as seen from the buyer's perspective and how buying companies deal with this variety, since this enables the identification of generic differences and similarities *across* the wide variety of services that organisations buy.

Furthermore, the importance of service encounters and the customer-provider interactions therein have been strongly emphasized by various SOM scholars. For example, Johnston [1999, p. 117] raises the question whether we know how to design and control the series of encounters that comprise the service process. Roth and Menor [2003] stress the importance of the design of the service encounter, in which the nature of interactions between the service providers and customers must be specified. Machuca et al. [2007] state that the design of the service delivery system is a topic that can be found on most SOM research agenda's; this topic even ranks second on the research agenda of Nie and Kellogg [1999]. For the services marketing discipline, the service encounter has become one of the main areas of research [see for example Grönroos, 2004].

However, such front-office aspects of services, i.e. those which involve the customer/ server interaction part of the process [McLaughlin et al., 1991], have mainly received attention in a business to *consumer* setting: in *business-to-business* settings, such front-office issues have received little attention. Smeltzer and Ogden [2002] deem the fact that most service discussions take

the perspective of the service consumer rather than of the service buyer as a main limitation in SOM research.

This current study aims to accommodate these concerns by studying the *interactions* taking place between buyers and sellers of *various kinds* of business services *after the contract has been signed*. This period is referred to as the ongoing service exchange. As such, we focus on tactical/ operational issues (i.e. implementation issues) in service operations management, an area which is in need of additional research [Machuca et al., 2007]. For the identification of different types of services, we draw on a classification which identifies four types of business services based on the way in which they are used by the buying company [Axelsson and Wynstra, 2002; Wynstra et al., 2006].

Given the paucity of literature in this area, it seems relevant and useful to conduct theory-building research. Swamidass [1991] and Meredith [1998] claim there is a need for more theory building in operations management research. In an earlier study, we studied ongoing interaction for each of the four service types at two buying companies. This study resulted in the identification of distinct patterns of interaction for each of the four types of business services. However, these patterns of interaction were associated with differing levels of success in the ongoing service exchange. Therefore, this paper reports on a comparison of successful and less successful cases of ongoing service exchange: main objective is to build theory on what patterns of interaction are effective for each of the four service types. A pattern of interaction is effective when it is associated with a successful ongoing service exchange, i.e. an exchange in which both the service process and the service outcome are successful [Edvardsson and Olsson, 1996; Grönroos, 1982].

6.2 THEORETICAL BACKGROUND

The importance of ongoing buyer-seller interactions, as opposed to the more transactional purchase process, has first been brought forward by the Industrial Marketing and Purchasing (IMP) Group [Ford, 2002; Håkansson, 1982]. In the case of (business) services, which are produced and consumed in interactive processes between buyers and sellers, the interactions that take place in the ongoing business relationship are highly important for successful ongoing service exchange [Grönroos, 2004]. This underlines the importance of the processes and practices that make up the daily activities of organisations and that relate to strategic outcomes [Johnson et al., 2003]. Similarly, Bower and Gilbert [2007] argue that strategy is made incrementally by managers who at every level of the organisation make decisions regarding the allocation of resources.

According to Wynstra et al. [2006], buyer-seller interactions are mainly influenced by the way in which a buying company uses the service purchased

with respect to its own business processes. The importance of the usage-dimension is also brought forward by Parasuraman [1998, p. 310], who argues that the linkages between buyers and sellers of business services differ for services used internally and services that (possibly after being modified) go further downstream in the supply chain. Similarly, the customer contact approach [Chase, 1981; Chase and Tansik, 1983] is used to make service design decisions related to which activities should be performed in front of customers and which in the organisation's back office, since separating these two types of activities is required to do justice to their different design requirements and maximize the efficiency of the service delivery system. Many service classifications or taxonomies have built on this model [see e.g. Cook et al., 1999; Mersha, 1990; Metters and Vargas, 2000; Soteriou and Chase, 1998]; however, most of these adopt a service provider's perspective. Wynstra et al. [2006] adopt a buyer's perspective and propose a new classification containing four types of business services. Two of these are targeted at downstream customers:

- Component services: are directly provided in front of or to end customers (i.e. coffee service on board of the trains of a railway company).
- Semi-manufactured services: are used by the buying company as part of their offerings to end customers (i.e. cleaning of trains for a railway company).

The two other services are targeted at the buying company:

- Instrumental services: affect how the buying company's primary processes are carried out (i.e. consultancy to improve the railway company's track-capacity utilization).
- Consumption services: become part of the buying company's support processes (i.e. cleaning of office buildings for a railway company).

This classification builds on the classification of Jackson and Cooper [1988], which identifies capital products, operation products (including MRO services) and output products (including production services) and the classification of Håkansson [1982], which consists of capital equipment, components and raw materials/ semi-manufactures. The latter has been extensively used by the IMP Group in studies of ongoing interaction between buyers and sellers of industrial goods and has contributed to understanding buyer-seller relationships.

Wynstra et al. [2006] posit that for each of the four service types, different patterns of ongoing interaction are most effective. These patterns of interaction are made up of several dimensions, which have been derived from the IMP studies [Easton, 1995; Ford, 2002; Håkansson, 1982; Håkansson and Snehota, 1995]. Firstly, the way in which a service is used influences what functional aspects become crucial in the interaction, or more formally the objectives of the interaction [Håkansson, 1982, p. 58-192]. These key objectives have

implications for the functional disciplines that are or should be involved in the production, delivery and consumption of those services, since the quality and productivity of business services are often highly dependent on the human resources involved [2000, p. 210-212]. Similarly, the key objectives influence what capabilities are critical for buyer and seller: Kellogg and Nie [1995] point out that the success of the service process depends on the expertise and experience of the service providers, i.e. on supplier capabilities. In addition to the buyer-seller interface and supplier capabilities, Cunningham and Homse [1986] mention the buyer's capabilities as an important resource in the interaction.

The type of service exchanged also affects the interaction processes that take place between the people involved with the service purchase, since inter-organisational contact patterns emerge between the specialists representing both companies. Furthermore, adaptations to for example the service or the service delivery process are discussed and agreements are reached through personal discussions between representatives of both companies [Cunningham and Turnbull, 1982]. Wynstra et al. [2006] furthermore claimed that patterns of interaction may be more clear for services characterised by high risk.

This classification and the conceptualisation of interaction provide the starting point for our empirical investigation of effective patterns of ongoing buyer-seller interaction. We furthermore include risk in our analysis of interactions.

6.3 RESEARCH STRATEGY, RESEARCH DESIGN AND DATA COLLECTION METHODS

This study adopts a case-based research strategy, since the object of this research, i.e. interaction between buyers and sellers of business services, is a dynamic phenomenon with complex links across organisational boundaries, which can best be studied in its real life context. Although case-based research findings have traditionally at best been regarded as exploratory/ descriptive, Johnston et al. [1999] and Meredith [1998, p. 453] suggest that case studies are a useful strategy for empirical investigation, as long as a systematic and theory-based approach is taken.

In this respect, various contributions have been made to advance the general perception of case based research [Eisenhardt, 1989; Eisenhardt and Graebner, 2007; Voss et al., 2002; Yin, 2003]. However, as pointed out justly by Dubois and Araujo [forthcoming], the approach of Eisenhardt [1989] (and others) highlights many of the problems associated with conducting qualitative research while relying on validation criteria that are more appropriate for quantitative research. For example, the view that sample sizes in case research are always too small to be able to move beyond exploration and perhaps generating theory is shared by many well-established academics. In our

research, we follow Dul and Hak [2007], who argue that (any number of) cases can be used for building theory and even for testing theory. Similarly, Meredith [1998] states that the emphasis on understanding in case research implies a direct focus on theory building.

Our research is designed as to study a wide variety of services at a reasonable number of companies. Company selection took place on: 1) the nature of their operations (service providers vs. manufacturers); and within these groups, companies with a) differing customers (business vs. consumers); and b) differing production modes (routine vs. professional service providers, unit vs. series vs. process production). This selection procedure results in a 2x5 design; eventually, nine companies agreed to participate in this study. Each company selected one service of each of the four service types (irrespective of the level of success) and identified the relevant informants (purchasers and contract owners/ internal customers).

We develop theory on ongoing buyer-seller interaction in two sequential steps, using two different subsets of our total set of 36 cases. Our research focus thus shifts from conceptual development to empirically investigating the relevance of Wynstra et al. 's [2006] business service classification (although Chase [1996] noted that SOM research is shifting from developing conceptual frameworks to validating them empirically, Roth and Menor [2003] note that little progress has been made so far). As such, this theory-building study is an important first step towards empirical validation of our ideas. In a next step, the empirically derived patterns of interaction could be tested and refined (although theory development and theory testing is often an intertwined process [Dubois and Gadde, 2002; Melnyk and Handfield, 1998]).

The first theory-building step comprises the study of all service types at two service companies. As opposed to selecting a representative sample from a population, which is a common approach for example in surveys, our case selection approach comprises a theoretical selection technique. According to Yin [2003, p. 47], theoretical sampling contributes to the development of robust theory. Main objectives of our first theory-development effort are to: 1) describe patterns of effective interaction (based on successful cases); and 2) compare the interactions observed at the two service companies to see whether the differentiation is consistent. Furthermore, this first step enables a comparison with the anecdotal evidence from Wynstra et al. [2006], who explored interaction in a convenience set of cases without rigorously developed research instruments. The detailed findings of our first theory-building study are reported elsewhere and briefly summarised in the next section.

For the second theory-building step, reported in detail in this article, highly successful and less successful high-risk service purchases are selected for each of the four types (theoretical case selection). Successful cases are cases with high scores on both the process and the outcome of service exchange; less

successful cases are cases with moderate scores. We do not select cases of very unsuccessful service exchange for two reasons: 1) such cases are likely to be found at companies with poor management practices in general; and 2) only three out of the 36 services studied were really unsuccessful.

The services (cases) that were thus selected come from five different companies and are studied in detail by means of two to three semi-structured interviews of 1,5 to 2 hours each with purchasers and with contract owners and/ or users. The interviews with the purchasers focus predominantly on the purchasing process, whereas the contract owners and internal customers are deemed to be most knowledgeable on what happened after the purchase (data source triangulation; Yin [2003]). The list of interview questions is based on the questionnaires used in the studies of the IMP Group [Håkansson, 1982]. Extensive interview summaries were sent back to the individual interviewees for verification. Approved interview summaries were merged into case descriptions, which were again sent to the interviewees in order to eliminate any inconsistencies and to provide further clarification if necessary.

Furthermore, interviewees filled out a short self-administered questionnaire aimed at obtaining the buying company's perception of success associated with the service exchange relative to their expectations in advance of the start of the contract period: Parasuraman [1998, p. 312] notes that service quality is a function of a gap between expectations and performance. In line with Grönroos [1982] and Edvardsson and Olsson [1996], success of the service exchange consists of the success associated with the process of service exchange (i.e. number of critical issues, level of mutual understanding) and the success associated with the outcome of the service exchange (the service delivered: i.e. the quality level, extent to which desired effects like cost reduction or increased customer satisfaction are achieved). The questionnaires, which used five-point Likert scales, were also used to evaluate informants' perceptions of the level of perceived risk involved with the service. In line with McQuiston [1989], risk was conceptualised as a function of importance and uncertainty of the service to the buying company, the latter in turn being a function of novelty and complexity.

The results of the questionnaires were aggregated and verified with the informants and the buying company's key contact. Furthermore, both the interview and the questionnaire results were extensively discussed among the authors to further enhance validity (Table 6.1 summarises how we dealt with various issues of validity and reliability). The services selected, the interviewees and the scores on success and risk are listed in Table 6.2. The scores on success are calculated as an average of process and outcome success ($1.0 \leq \text{success} \leq 5.0$); the scores on risk were calculated by averaging the scores on novelty and complexity and multiplying this with the score on

Table 6.1 Validity and reliability in the case studies

Type of validity	Methods of addressing this in the case studies
<p><i>Construct validity</i></p> <p>“establishment of correct operational measures for the concepts being studied”</p>	<ul style="list-style-type: none"> ▪ Triangulation of questionnaire and interview data ▪ Triangulation of multiple informants: different internal representatives ▪ All informants received draft versions of the interview report for comments ▪ Draft versions of the case reports were verified with all informants ▪ Complete case reports verified with key informant from each buying firm ▪ Three research team members gave input during data collection and analysis ▪ Result: emergent explanations adjusted and expanded; participants agreed to the interpretations
<p><i>Internal validity</i></p> <p>“establishing causal relationships whereby certain conditions are shown to lead to other conditions, as distinguished from spurious relationships”</p>	<ul style="list-style-type: none"> ▪ Use of conceptual framework ▪ Result: relationships between the different variables from the conceptual framework identified and substantiated
<p><i>External validity</i></p> <p>“establishing a domain in which the study’s findings can be generalized”</p>	<ul style="list-style-type: none"> ▪ Theoretical selection of cases at the firm level and the level of the service purchase ▪ Result: framework applicable to different types of firms and service purchases
<p><i>Reliability</i></p> <p>“demonstrating that the operations of a study can be repeated with the same results”</p>	<ul style="list-style-type: none"> ▪ Development of case protocol ▪ Development of (interview) questionnaire ▪ Result: methodology transparent and repeatable

Based on: Yin (2003).

Table 6.2 Services selected, informants, and success and risk scores

Type	Service	Company	Success	Informants	Success (1-5)	Risk (1-25)
Component	Pension fund administration	Employee Insurance Agency (EIA)	High	<ul style="list-style-type: none"> ▪ Purchaser ▪ Project leader migration pension fund administration 	3.4	11.0
	Subcontractors for glass cleaning	Facility Services Provider (FSP)	Low	<ul style="list-style-type: none"> ▪ Manager Procurement ▪ Business Unit Manager Specialist ▪ Cleaning Techniques 	3.3	9.8
Semi-manufactured	Payment handling	Employee Insurance Agency (EIA)	High	<ul style="list-style-type: none"> ▪ Senior Buyer Facilities ▪ Manager Cash Management 	3.6	8.7
	Industrial cleaning	Oil and Chemicals Storage company (OCS)	Low	<ul style="list-style-type: none"> ▪ Commodity Buyer/ Account Manager ▪ Chief Terminal Premises ▪ Team leader Tank cleaning ▪ Terminal Superintendent Dayshift 	3.0	10.5
Instrumental	Extraction and storage of condensate	Natural Gas Transportation company (NGT)	High	<ul style="list-style-type: none"> ▪ Purchaser ▪ Representative Operations department 	4.3	7.6
	Project management	Retail Division of Oil company (RDO)	Low	<ul style="list-style-type: none"> ▪ Retail Category Manager Design & Construction ▪ EU Construction Focal Point 	2.9	7.4
Consumption	Office cleaning	Retail Division of Oil company (RDO)	High	<ul style="list-style-type: none"> ▪ Contracting & Procurement Consultant ▪ Office Manager 	3.9	7.2
	Gas and electricity	Oil and Chemicals Storage company (OCS)	Low	<ul style="list-style-type: none"> ▪ Buyer Projects & Services ▪ Terminal Manager ▪ Manager Terminal B 	2.8	11.1

importance ($1.0 \leq \text{success} \leq 25.0$)³⁸. Although the risk scores presented in Table 6.1 may give the impression that the services studied were low in risk; it is important to note that relatively, the services selected had the highest risk scores.

The results were used to select a highly successful and a moderately successful case for all four types of business services. We furthermore select only cases characterised by high buyer-perceived risk [Johnston and Lewin, 1996], since Wynstra et al. [2006] suggested that patterns of interaction would emerge more clearly for high-risk services.

6.4 IDENTIFYING SYSTEMATIC VARIATION IN INTERACTION

In our first set of theory-building cases, we studied each of the four service types at two service companies. The results obtained from mapping the interactions between the buying companies and their providers in terms of the dimensions discussed earlier suggested that each of the four service types indeed is associated with distinct ongoing interactions (Table 6.3). Since these interactions are fairly consistent across the two companies, we consider our results to be patterns of interaction.

For example: the key objective of interaction for component services is to ensure the fit between the service being purchased and the buying company's existing offerings. Sampson [2000] illustrates this with the example checking in and retrieving luggage at the airport. He claims that a design of the luggage handling process from start to finish is required to assure sufficient quality inputs, which in turn allow for a successful luggage claim output [Sampson, 2000, p. 362]. This would for example include verifying the packaging of fragile luggage upon check-in. For instrumental services, the key objective is to achieve the desired change in the buying company's primary processes, whereas for consumption services, the key objective is to ensure the service becomes part of the support processes.

Regarding the type of representatives involved, co-producers of the service are highly involved in the ongoing interactions for semi-manufactured services. Think for example of cleaning public transport vehicles. The

³⁸ We chose for multiplication over averaging the scores on importance and uncertainty, since averaging would potentially even out a high score on importance or uncertainty (or both), which does not properly reflect the associated level of risk. Multiplication in contrast results in an exponential increase in risk when either or both importance and uncertainty are high, thereby differentiating more strongly those services with low, medium and high risk. According to Peter and Ryan [1976], a multiplication approach to obtain an overall indication of risk is common. Mitchell [1999] states that the logic for this multiplicative model is not provided in literature, but is likely to stem from probability theory, in which probabilities are multiplied with monetary values to calculate expected gains.

cleaning is performed by a specialized contractor, but the people that plan the vehicles during the day as well as the people arranging the quality controls will be strongly involved in the interactions. With instrumental services, people knowledgeable about the processes at which the service is targeted will be involved. With consumption services, internal customers will be involved. This may be any functional department or all (think for example of the maintenance services for copiers).

Critical capabilities for suppliers of component and semi-manufactured services are the ability to translate end-customer demands. The ability to communicate end-customer demands is also an important customer capability for component services; for semi-manufactured services, the ability to optimize the fit between the operations of the two organisations is more important.

Finally, considering processes of interaction, the communication regarding component and semi-manufactured services will comprise the coordination of capacity and demand. For consumption services, the focus will be on increasing efficiency. Adaptations for component and semi-manufactured services will involve making adjustments to match capacity with demand, whereas adaptations for consumption services are directed at streamlining financial and administrative processes.

However, since the first subset lacked cases of unsuccessful service exchange (except for the category of instrumental services), we were not able to determine whether these patterns of interaction are non-trivial. It could be that these supposedly effective patterns equally occur in cases of unsuccessful service exchange. Moreover, the pattern found for instrumental services was effective for only one of the cases studied. This instrumental service for which the pattern was successful was characterised by low risk. Possibly, the effective pattern of interaction for high-risk services looks different than the interaction pattern for low-risk services.

Therefore, a second theory-building effort was conducted for which we selected high-risk cases with differing degrees of success in the ongoing service exchange. Main objective of this theory-building exercise is to find out whether and how patterns of interaction for successful ongoing service exchange differ from patterns of less successful ongoing service exchange. Hereafter, we provide a detailed within-case analysis for two of the service types (i.e. the component and the instrumental services) and only briefly discuss the results for the two other service types.

Table 6.3 Patterns of interaction for the four service types

Type	Key objectives	Critical supplier capabilities	Critical customer capabilities
<i>Component</i>	<ul style="list-style-type: none"> ▪ The service should become an element of the buying firm's offering alongside its own products/ services 	<ul style="list-style-type: none"> ▪ Understand the offering of the buying firm ▪ Adjusting the service to the requirements of the buying company ▪ Service quality and reliability 	<ul style="list-style-type: none"> ▪ Ability to clearly specify the offerings of the buying company and how the service should fit with those ▪ Ability to communicate company culture and behaviour
<i>Semi-manufactured</i>	<ul style="list-style-type: none"> ▪ The service should be 'wrapped into' / transformed for the buying company's customer processes 	<ul style="list-style-type: none"> ▪ Understand the buying firm's customer processes ▪ Understand how service is 'wrapped' by buying company ▪ Service quality and reliability 	<ul style="list-style-type: none"> ▪ Ability to explain customer processes and how service will become part of these processes ▪ Ability to maintain (service) 'production schedule'
<i>Instrumental</i>	<ul style="list-style-type: none"> ▪ The service should affect the buying firm's primary processes in the desired way 	<ul style="list-style-type: none"> ▪ Understand primary processes buying firm ▪ Understand how the service will result in desired change (internal customer requirements) ▪ Implementation skills 	<ul style="list-style-type: none"> ▪ Ability to communicate desired effect on primary processes ▪ Ability to enable the supplier in achieving the desired performance
<i>Consumption</i>	<ul style="list-style-type: none"> ▪ The service should become an integral part of various support processes at the buying firm 	<ul style="list-style-type: none"> ▪ Ability to develop efficient routines ▪ Understand internal customer needs ▪ Ability to adapt the service to the specific situation of customer 	<ul style="list-style-type: none"> ▪ Ability to identify and communicate requirements of various internal customers

Customer representatives	Important issues in the communication	Relation-specific adaptations
<ul style="list-style-type: none"> ▪ People knowledgeable of the buying firm's final offering 	<ul style="list-style-type: none"> ▪ Offerings of the buying firm (including timing of service delivery and quality requirements) ▪ Fit of service with final offering 	<ul style="list-style-type: none"> ▪ Service design ▪ Service delivery process ▪ Capacity & demand management
<ul style="list-style-type: none"> ▪ People knowledgeable of buying firm's final offering ▪ Co-producers/ production planners 	<ul style="list-style-type: none"> ▪ Characteristics of the buying firm's customer processes ▪ Integration of service with those processes ▪ Trends and opportunities for improvement 	<ul style="list-style-type: none"> ▪ Service design ▪ Service delivery ▪ Capacity and demand management ▪ Administrative procedures
<ul style="list-style-type: none"> ▪ Representatives of processes affected by the service ▪ Process engineer/ project leader 	<ul style="list-style-type: none"> ▪ Progress of implementation ▪ Exceptions/ deviations and solution mechanisms ▪ Long-term orientation/ company strategy 	<ul style="list-style-type: none"> ▪ Service specification ▪ Service design ▪ Exchange of sensitive information ▪ Changes to organisation structure
<ul style="list-style-type: none"> ▪ Internal customers (various functional disciplines) 	<ul style="list-style-type: none"> ▪ Internal customer demands ▪ How to develop efficient routines 	<ul style="list-style-type: none"> ▪ Service delivery ▪ Administrative procedures ▪ Financial procedures

6.5 SUCCESSFUL VERSUS LESS SUCCESSFUL COMPONENT SERVICES

We selected pension administration at an Employee Insurance Agency (EIA) as an example of a successful component service purchase and subcontractors for a Facility Services Provider (FSP) as a less successful component service purchase.

6.5.1 Buying pension administration services at EIA

EIA is responsible for the administration and implementation of insured benefits for around 1,000,000 Dutch employees. Among these benefits is the pension fund, the administration of which is handled by a single supplier. Services provided by the administrator include the collection of fees from employees and employers, administration, and the payment of pension benefits. This service is a component service: the administrator directly provides its services to EIA's customers. This purchase is considered successful since the administrator lives up to EIA's expectations with regard to the services provided (success = 3.3) as well as the process of service delivery (success = 3.5).

The key objective is to have the service provided match the EIA's desired level of service quality. Furthermore, there are linkages with other services EIA provides: for example, someone's pension depends also on whether that person has been unemployed or not. Consequently, EIA had to be able to clearly communicate the expectations of and information about their clients, as well as how they want their clients to be served. Specific attention has therefore been given to describing the services to be provided in terms of process maps with specific measurement moments and Key Performance Indicators. Furthermore, EIA specified special circumstances and the desired responses, and price structures. As the project leader emphasized, this required the involvement of "the board (including representatives of employers and employees), ..., and especially people knowledgeable about pensions and the execution of pensions." The first can be considered end customer representatives, whereas the latter are knowledgeable about the service to be provided. Finally, EIA developed a migration plan regarding the alignment of payment processes and procedures, including a pre-defined communication structure and allocated roles and responsibilities.

6.5.2 Hiring subcontractors for window cleaning at FSP

FSP is a large facility services provider, which makes use of subcontractors to clean the windows of their client's offices. This service is a component service since the subcontractors deliver the service purchased by FSP directly to FSP's customers (the provider even delivers service on the end

customer's premises). The contract is considered less successful since it has not yet rendered the benefits from intensive collaboration which FSP had determined up front, and although there are no real problems currently (process and outcome scores are both 3.3), problems could arise in the future because quality has been insufficiently addressed.

The key objectives of FSP were to reduce its supply base to increase quality. Technical quality was safeguarded by selecting suppliers that obtained good results on three evaluation forms filled out by the internal customer, the administration department and the BU manager respectively. However, the internal customers defined their own quality levels rather than asking their end customers what they consider to be quality. Issues like desired behaviour, clothing, et cetera, are not explicitly addressed. This can be explained by the fact that there was no involvement of a marketing-like function.

Furthermore, no operational contract manager was appointed. As the purchasing manager at FSP stated "Active operational control is usually required to achieve effectiveness in a contract: processes need to be aligned and things like following up on agreements, invoicing, et cetera, need to be monitored." As a result, the intended intensive collaboration, in which opportunities to improve the front-end processes would be identified, was not realized. Rather, the subcontractors just take on assignments and get paid.

6.5.3 Within-service type analysis

When comparing the successful and the less successful component service purchase, various elements can be identified contributing to (a lack of) effective interaction (Table 6.4). Firstly, EIA clearly had their end customers' interests in mind when sourcing this service. The service has to fit with EIA's other services, putting certain requirements on the supplier in terms of behaviour towards clients and working procedures (as can be seen from the adaptations made to payment processes). By involving people knowledgeable about the activities to be performed to serve the customers well, clear specifications could be drawn up. The representatives of the pension board are the internal customers of the service, and as such safeguard the interests of external customers. Because the administrator is servicing end customers, EIA in contrast puts a lot of effort into making sure the service is delivered according to requirements (correct administration and timing). Intensive communication resulted in many issues being tackled early on in the process. Regular communication still takes place regarding commercial issues, product/content related issues, developments in the supply market and suggestions for (joint) improvement.

Table 6.4 Observations for the component services

	Objectives	Supplier capabilities	Customer capabilities
<i>EIA_CMP</i>	<ul style="list-style-type: none"> ▪ Having a third party perform administration on behalf of EIA with the desired level of quality ('seamless' fit) 	<ul style="list-style-type: none"> ▪ Delivery capabilities like accuracy and the ability to deal with a considerable number of transactions ▪ Understand that they deal with end customers 	<ul style="list-style-type: none"> ▪ Ability to clearly communicate client expectations ▪ Ability to explain how EIA wants the supplier to deal with end customers in terms of attitude, values, et cetera
<i>FSP_CMP</i>	<ul style="list-style-type: none"> ▪ Supply base rationalization ▪ Cost reduction (while improving quality) ▪ No emphasis on fit between service and FSP processes 	<ul style="list-style-type: none"> ▪ Provide high quality service for low costs ▪ Meet requirements resulting from safety regulations ▪ Notion of supplier dealing with end customers is lacking 	<ul style="list-style-type: none"> ▪ Ability to clearly specify technical quality ▪ Accurately forecast end customer demand ▪ Ability to coordinate jobs
<i>Effective pattern</i>	<ul style="list-style-type: none"> ▪ <i>Service must fit seamlessly with buying company's offering to end customers</i> 	<ul style="list-style-type: none"> ▪ <i>Understanding end customer demands</i> ▪ <i>Quality and reliability of service delivery</i> 	<ul style="list-style-type: none"> ▪ <i>Ability to clearly specify customer demands</i> ▪ <i>Ability to communicate company culture and behaviour</i> ▪ <i>Upfront development of communication scheme</i>

Customer representatives	Important issues in the communication	Relation-specific adaptations
<ul style="list-style-type: none"> ▪ Involvement of board representatives (represents clients), people knowledgeable about pensions, purchasing, external consultant, legal, accounting 	<ul style="list-style-type: none"> ▪ Migration process (transferring operations to the new administrator) ▪ Monthly meetings to discuss organisation, implementation, generic and policy issues, improvement opportunities 	<ul style="list-style-type: none"> ▪ Service specification (process maps and KPIs) ▪ Payment processes (administrative) ▪ Price structure (financial)
<ul style="list-style-type: none"> ▪ Purchasing ▪ BU managers (no explicit link to FSP's customers) ▪ Administration department 	<ul style="list-style-type: none"> ▪ Quality and safety requirements (annual evaluation) ▪ Coordination of daily activities 	<ul style="list-style-type: none"> ▪ Systematic approach to supplier selection, job allocation and performance evaluation ▪ Reducing administrative workload (standardized ordering process and price lists)
<ul style="list-style-type: none"> ▪ <i>People knowledgeable of the buying firm's final offering and end customer requirements</i> ▪ <i>Product experts</i> 	<ul style="list-style-type: none"> ▪ <i>General performance</i> ▪ <i>Start-up period of the contract (in general)</i> 	<ul style="list-style-type: none"> ▪ <i>Specification</i> ▪ <i>Administrative and financial procedures</i>

FSP on the other hand did not focus on the fit of the service with its own offerings, but rather aimed for cost reduction and supply base rationalization. Quality played a role here; however, the focus was on technical quality rather than on what constitutes quality in the eyes of end customers. As a result, the suppliers selected may excel in cleaning windows, but may not be very advanced with regard to their customer interaction process. Furthermore, contract management and the buyer-seller collaboration during the ongoing service exchange hardly received attention, as can be seen from the fact that no contract owner/ manager had been appointed. Consequently, communication is mostly limited to the operational coordination of jobs. Adaptations focus on reducing administrative workload rather than on the service delivery process, as would be expected for component services.

6.6 SUCCESSFUL VERSUS LESS SUCCESSFUL INSTRUMENTAL SERVICES

We selected subtraction of condensate by a Natural Gas Transportation company (NGT) as an example of a successful instrumental service purchase and project management services at a the Retail Division of an Oil company (RDO) as a less successful instrumental service purchase.

6.6.1 Buying subtraction services at NGT

NGT buys and sells natural gas. Treatment of the gas (resulting from mixing different gas flows) results in condensate (gasoline-like substance), which can potentially damage customer systems (i.e. turbines at a factory). A specialist supplier therefore subtracts the condensate from the pipeline system at various locations in the Netherlands. This service is an instrumental service, since it directly affects the primary processes of NGT. This service purchase is considered successful because the supplier smoothly took over the subtraction processes from NGT, while at the same time increasing efficiency (process success = 4.5; outcome success = 4.0).

The key objective of interaction is to maintain the quality of the natural gas by removing side products. Important supplier capabilities involve the ability to collect and transport perilous substances, while conforming to safety requirements. Additionally, the supplier needs to understand the potential impact of low performance, since damage to end customer property may result in claims.

NGT heavily involved people with process knowledge in the specification process. Furthermore, NGT's employees performed the subtraction activities together with the supplier's employees, so that the supplier could see what the service activity comprises and learn from the specific knowledge and experiences of NGT employees. In turn, the supplier was able to ventilate their specific expertise here, which has eventually led to optimization of the service

delivery process. The supplier now independently directs and executes the subtraction process. For the operational phase of the contract, a clearly defined communication structure has been put in place.

6.6.2 Buying project management services at RDO

RDO focuses on all retail-related activities of a large oil company. One such activity is setting up and executing construction activities to realize petrol stations around the globe. For these construction activities, RDO deals with Project Management Companies (PMCs) that manage the capital expenditures involved on their behalf. This includes monitoring regional contractors hired to actually perform building or refurbishment activities. This service is an instrumental service since it is aimed at maintaining and expanding RDO's operations. The purchase is less successful because construction projects are usually delayed (outcome success = 2.8), which results in revenue losses.

This service requires close collaboration between RDO's engineers and business development representatives on the one, and the supplier on the other hand. Since this service involves substantial investments, finance people are involved. The project management companies require sufficient management skills to realize construction projects as quickly as possible, since then the petrol stations can start generating revenues.

The purchase has required adaptations to RDO's working methods and communication structure. As the Construction Focal Point stated: "Rather than doing everything themselves and organizing things with local consultants and contracts, the local engineers now had to become more arm's length contract managers that had to monitor and manage the PMCs." For some people, adopting this new way of working was easier than for others. In order to monitor the PMCs, a contract and performance review team has been installed. However, the general tendency at RDO is that speed goes above all: "As long as construction activities are realized quickly and at the right cost, the actual collaboration and the division of roles and responsibilities are of lesser importance". In practice, construction completion dates are frequently exceeded, and it is hard to identify what part of this low performance can be attributed to the PMC.

Table 6.5 Observations for the instrumental services

	Objectives	Supplier capabilities	Customer capabilities
NGT_INS	<ul style="list-style-type: none"> ▪ Maintaining the quality of NGT's production process 	<ul style="list-style-type: none"> ▪ Understand NGT's production process ▪ Understand safety requirements ▪ Understand possible impact of service delivery failure or insufficient quality 	<ul style="list-style-type: none"> ▪ Clearly explain the production process ▪ Clearly explain desired effect of service on production process
RDO_INS	<ul style="list-style-type: none"> ▪ Manage construction activities for fast realization 	<ul style="list-style-type: none"> ▪ Understand how their performance impacts RDO's performance ▪ Project management capabilities 	<ul style="list-style-type: none"> ▪ Manage the supplier at arm's length (not yet very successful)
<i>Effective pattern</i>	<ul style="list-style-type: none"> ▪ <i>The service should affect the buying firm's primary processes in the desired way</i> 	<ul style="list-style-type: none"> ▪ <i>Understand processes buying firm</i> ▪ <i>Understand how the service affects the buying company's primary processes</i> ▪ <i>Implementation skills</i> 	<ul style="list-style-type: none"> ▪ <i>Ability to explain the primary process at which service is targeted</i> ▪ <i>Ability to specify and communicate desired effect</i> ▪ <i>Close monitoring of the contract at start-up (monitoring continues throughout contract period)</i> ▪ <i>Development of extensive communication structure</i>

Customer representatives	Important issues in the communication	Relation-specific adaptations
<ul style="list-style-type: none"> ▪ Purchasing ▪ Technical specialist ▪ People executing the service when it was still performed in-house 	<ul style="list-style-type: none"> ▪ At start-up: exchanging experience in service delivery/ ideas for improvement ▪ Annual evaluations of service delivery and contract 	<ul style="list-style-type: none"> ▪ Service design and delivery according to NGT's requirements ▪ Optimization of service design and delivery based on both buying company's and supplier's expertise
<ul style="list-style-type: none"> ▪ Purchasing ▪ Engineering (central and local) ▪ Local teams supported by national teams responsible for implementation 	<ul style="list-style-type: none"> ▪ Assignment-related local team meetings (coordination of activities, detailing specifications and design) ▪ Monthly central team meetings (reports and budgets, monitoring local activities) ▪ No contract management in place 	<ul style="list-style-type: none"> ▪ Working methods of local engineers ▪ Progress reporting procedures introduced ▪ Introduction of incentive scheme (not successful)
<ul style="list-style-type: none"> ▪ <i>People involved with the primary process at which the service is targeted</i> 	<ul style="list-style-type: none"> ▪ <i>Start-up of contract (start of implementation), deviations and ideas for improvement</i> ▪ <i>Long-term orientation of buyer-seller relationship</i> 	<ul style="list-style-type: none"> ▪ <i>Service design</i> ▪ <i>Service delivery</i> ▪ <i>Using of expertise to optimize service delivery</i>

6.6.3 Within-service type analysis

Comparing the observations for the two service purchases results in the identification of various elements that contribute to (a lack of) effective interaction (Table 6.5). NGT has focused strongly on ensuring that the service would be delivered according to the desired quality and safety standards, thereby having the desired effect on NGT's primary processes. Besides an ability to operate in environments with high safety standards, the supplier's management skills contributed to being able to autonomously carry out the subtraction activities. The smooth and fast transition of the activities between NGT and the supplier was facilitated by the extensive experience NGT has with the subtraction process and the fact that for a while, NGT and the supplier jointly performed the activities. This resulted in adaptations to service design (custom developed subtraction vehicles) and delivery.

In contrast, the key objective of RDO has been speedy realization of capital expenditures. The change in working methods requires the engineers involved to unlearn the old and adopt new practices. RDO tries to facilitate this by providing training, but this turned out to be slow process. This does not benefit speed in the realization of capital expenditures. Furthermore, it seems that there is a gap between centrally developed working methods and local execution: although representatives of engineering have been involved in the purchase trajectory, this mostly concerns senior managers and not the engineers that will actually have to adapt their ways of working.

6.7 DEVELOPING PROPOSITIONS ON EFFECTIVE BUYER-SELLER INTERACTION

The analyses of the component and the instrumental services above demonstrate that for each service type the pattern of interaction associated with successful ongoing service exchange differs from a pattern associated with unsuccessful ongoing service exchange. Similar findings were obtained for the semi-manufactured and the consumption services (Table 6.6).

For example, in the effective pattern for semi-manufactured services, the key objective is to have the service become an integral part of the buying company's offering to end customers. The supplier should understand how their service is being 'wrapped into' the buying company's offering, and should be able to match the demand of the buying company's customers. In this sense, semi-manufactured services are quite similar to component services, and therefore also require the involvement of representatives of the end customer. However, with semi-manufactured services, production representatives are also involved, since they transform the service for and adapt it to the buying company's processes rather than just its offerings. For this purpose, the buying company requires the ability to clearly explain its

processes and requirements to the supplier, as well as an understanding of how their supplier's service becomes part of their own processes. Reliability is very important (for example: in the case of benefit payments, on-time payment is crucial). Main issues in the communication are customer requirements and the fit between the buyer and the suppliers (service) production processes.

In the effective pattern for consumption services, the key objective of interaction that the service becomes an integral part of various support processes. Important capabilities for the supplier are the ability to develop efficient routines and to customize the service to be delivered to the specific situation of the buying company and perhaps even to individual internal customers. Proper representation of these internal customers/ users of the service is therefore highly important. The buying company needs to be able to identify and communicate their requirements to the supplier. Main issues in the dialogue between buyer and seller are daily operations and improvement opportunities.

These descriptions of effective patterns of ongoing interaction can be used to develop propositions in which the effective interaction pattern is related to success. For example: in cases of successful ongoing service exchange for *component* services, ...

- P1a ...the key objective is to make sure that the service fits with the customer's final offering;
- P1b ...representatives of external customers (often the marketing discipline) will be involved;
- P1c ...critical supplier capabilities concern the ability of timely service delivery with the desired quality level and the supplier's ability to improve the buying company's front end processes;
- P1d ...critical customer capabilities are clearly communicating end customer requirements, as well desired behaviour;
- P1e ...important issues in the communication are the customer's evaluation of the service (performance) as well as the buyer-seller relationship and (future) market developments;

In a similar way, propositions can be developed for the other three service types. It is important to note that the dimensions should be considered jointly (as a pattern) rather than individually when it comes to verifying the proposed relationships.

Note that we did not develop propositions regarding adaptations, since the findings regarding adaptations in the current study are conflicting with the results of the previous theory building study. Moreover, the findings of that study did not clearly point to distinct adaptations taking place for each of the four service types. Possibly, the sorts of adaptations that take place are (also) contingent on other factors than service type, for example on the length of the

Table 6.6 Effective patterns of interaction for the different service types

	Objectives	Critical supplier capabilities	Critical customer capabilities
<i>Component</i>	<ul style="list-style-type: none"> ▪ Service must fit seamlessly with buying company's offering to end customers 	<ul style="list-style-type: none"> ▪ Understanding end customer demands ▪ Quality and reliability of service delivery 	<ul style="list-style-type: none"> ▪ Ability to clearly specify customer demands ▪ Ability to communicate company culture and behaviour ▪ Upfront development of a communication scheme
<i>Semi-manufactured</i>	<ul style="list-style-type: none"> ▪ The service should become an integral part of the buying company's primary processes 	<ul style="list-style-type: none"> ▪ Understand buying company's customer processes and how service is integrated in those processes ▪ Flexibility to match demand patterns ▪ Reliability 	<ul style="list-style-type: none"> ▪ Clearly specify characteristics of buying firm's processes and how service will be integrated ▪ Reliability of the (service) 'production process ▪ Upfront development of communication scheme
INSTRUMENTAL	<ul style="list-style-type: none"> ▪ The service should affect the buying firm's primary processes in the desired way 	<ul style="list-style-type: none"> ▪ Understand processes buying firm ▪ Understand how the service affects the buying company's primary processes ▪ Implementation skills 	<ul style="list-style-type: none"> ▪ Ability to explain the primary process at which service is targeted ▪ Ability to specify and communicate desired effect ▪ Close monitoring of the contract at start-up (monitoring continues throughout contract period) ▪ Development of extensive communication structure
<i>Consumption</i>	<ul style="list-style-type: none"> ▪ The service should become an integral part of the buying company's support processes 	<ul style="list-style-type: none"> ▪ Ability to develop efficient routines ▪ Ability to adapt the service to the specific situation of customer 	<ul style="list-style-type: none"> ▪ Ability to identify and communicate requirements of various internal customers ▪ Close monitoring of the contract ▪ Establishing a communication scheme

Customer representatives	Important issues in the communication	Relation-specific adaptations
<ul style="list-style-type: none"> ▪ People knowledgeable of the buying firm's final offering and end customer requirements ▪ Product experts 	<ul style="list-style-type: none"> ▪ General performance ▪ Start-up period of the contract (in general) 	<ul style="list-style-type: none"> ▪ Specification ▪ Administrative and financial procedures
<ul style="list-style-type: none"> ▪ Co-producers/service 'production' planners ▪ People knowledgeable about buying firm's offering 	<ul style="list-style-type: none"> ▪ Characteristics of customer processes and how the service will be integrated ▪ Coordination of service delivery ▪ In- and external trends and developments 	<ul style="list-style-type: none"> ▪ Optimization of buying company's and supplier's processes (process characteristics/capacity and demand management) ▪ Changes to organisational structure
<ul style="list-style-type: none"> ▪ People involved with the primary process at which the service is targeted 	<ul style="list-style-type: none"> ▪ Start-up of contract (start of implementation), deviations and ideas for improvement ▪ Long-term orientation of buyer-seller relationship 	<ul style="list-style-type: none"> ▪ Service design ▪ Service delivery ▪ Using of expertise to optimize service delivery
<ul style="list-style-type: none"> ▪ Internal customers (any functional discipline or all) 	<ul style="list-style-type: none"> ▪ Internal customer requirements ▪ Improvement opportunities ▪ General performance 	<ul style="list-style-type: none"> ▪ Communication structure ▪ Administrative procedures

buyer-seller relationship. Further research is required to obtain a better understanding of the process of adaptations in service relationships.

Overall, we find that the results from the first theory-building exercise have largely been replicated in this second theory-building study. As a result however, the conflicting findings for instrumental services of the previous theory-building study have not been resolved: the effective pattern of interaction for instrumental services, as developed in this study, is similar to the pattern that resulted in successful ongoing service exchange in one, and unsuccessful ongoing service exchange in another case. We will come back to this issue in the following section.

6.8 LEVERAGING PATTERNS OF EFFECTIVE INTERACTION

In addition to the identification of effective patterns of ongoing interaction for the four different service types, we also found generic similarities across the four service types in the form of 'levers' for successful ongoing service exchange. Thus, the case studies have contributed to our understanding of *how* the effective interaction patterns may result in successful ongoing service exchange. As such, the case studies have uncovered new areas of attention, which results in a need for adding new theory. This is illustrative of the process of systematic combining [Dubois and Gadde, 2002], an approach in which theoretical framework, empirical fieldwork and case analyses evolve simultaneously by continuously matching theory and reality, and direction and redirection.

First, the successful service purchases are characterised by active involvement of the buying company's representatives. In contrast, for the less successful service purchases, 'involvement' seems to equal 'being informed'. Active involvement of relevant representatives positively affects the specification process, which requires the buying company to think about the operational phases including the interaction dimension between local (operational) staff, as well as about how the provider's and the buying company's performances are linked. Specifications were not developed to a large level of detail for the less successful service purchases.

The successful cases are furthermore characterised by active contract management. This is in line with Allen and Chandrashekar [2000], who claim that successful services outsourcing requires a shift from managing employees and working processes to managing contracts. This implies that the buying company must shift from improving its own knowledge on how to do certain activities to managing suppliers doing certain activities. In the successful cases in this study, a contract manager had been appointed up front: the contract manager carries responsibility over the contract and is the main contact point for the service provider and the buying firm. These contract managers also played an important role during the initial stages of the purchase process:

defining and designing functional contract management requires operational input from users, co-producers and/or future contract managers. Active contract management furthermore involves paying attention to the contract, also when there are no problems.

In the successful cases, the buying company has been actively involved in the start-up phase of the contract. The contract manager actively seeks to facilitate the supplier during the period in which he first starts to provide the service, and involves the relevant parties in order to make changes when and where necessary. In the less successful cases, the suppliers were pretty much left to themselves, thereby inhibiting a constructive dialogue on the collaboration and how it can be improved.

Finally, in the successful service purchases, formal measurement and evaluation moments are determined with the supplier after selection but in advance of signing the contract. Pre-defined Key Performance Indicators are measured jointly and discussed in formal meetings. Communication structures are set up and roles and responsibilities for both parties are jointly determined.

This leads us to conclude that there are various ‘mechanisms’ which can be used for leveraging the effective patterns of interaction (note that most of these mechanisms are also mentioned in Table 6). These mechanisms are *generic* for each of the four service types and contribute to our understanding of why the expected effects occur or do not occur [Meredith, 1998]. Based on these findings, we bring forward the following propositions:

- P2 Cases of successful ongoing service exchange will be characterised by thoroughly developed service specifications with a reasonable level of detail.
- P3 Cases of successful ongoing service exchange will be characterised by active contract management.
- P4 Cases of successful ongoing service exchange will be characterised by active involvement of the buying company in the start up phase of the contract.
- P5 Cases of successful ongoing service exchange will be characterised by clearly defined communication structures (involving a system with designated process / contract owners).

These findings contribute to our understanding of why the pattern for instrumental services developed in the previous theory-building study did not result in successful ongoing service exchange. In this IT outsourcing project, a dedicated contract manager was not appointed. Rather, the buying company signed the contract and expected the service provider to deliver service exactly as was agreed upon in the contract. When performance turned out to be lower than expected, the buying company did not intervene until after some time. Only then did they seek to facilitate the service provider into improving performance. Furthermore, they began to acknowledge their own contribution in achieving high performance. Possibly, these mechanisms can be considered

important generic prerequisites for success in the ongoing service exchange, which need to be in place alongside differentiated buyer-seller interaction. Additional empirical studies are however required to investigate this idea further.

6.9 CONCLUSIONS

This paper has studied the differences between patterns of ongoing interaction for cases of successful and less successful ongoing service exchange. The results indicate that: 1) distinct effective interaction patterns can be identified for each of the four types of services; and 2) these effective interaction patterns are different from the interaction patterns in the less successful cases. As such, this study is one of few studies in SOM that have moved beyond conceptual development of frameworks and into empirical validation of the classification and its implications for buyer-seller interaction. This theory-building research is an important first step towards validation, as it leads to the development of theoretical propositions, which could be tested in follow-up research.

The identification of effective interaction patterns for each of the four service types implies that managers should adopt a contingent rather than a best practice approach when buying business services [Storey et al., 2006]: a best practice for cleaning office buildings (consumption service) may be totally inappropriate for cleaning of airplanes (component service). As such, our classification together with our findings on effective interaction patterns can be used as a guideline for designing the buyer-seller interface and interactive processes in a way that contributes to successful ongoing service exchange. Heineke and Davis [2007] state that classification of services' characteristics at the level of the process makes the insights obtained from such classifications very beneficial to managers who seek opportunities for improvement.

This study furthermore identified generic mechanisms for leveraging effective interaction. These include: drawing up a specification with a sufficient level of detail, active involvement in the start-up/ transition phase, active contract management, and predetermined measurement moments and Key Performance Indicators. These factors, which are mostly related to the initial stages of purchase process, are important levers for achieving success. Yet, the extent to which these factors can be leveraged is highly dependent on service-specific dimensions, like who to involve in the ongoing interactions. For example: the identification of the relevant stakeholders will result in a more complete specification. This includes linking the people making the purchase decision to the people that actually receive the service/work with the service provider. Consequently, the specification highlights which buyer and supplier capabilities are crucial. A thorough specification also includes how

the buyer and the supplier will deal with each other during the contract period, both with regard to service delivery and the surrounding management processes (i.e. communication and adaptation).

6.9.1 Discussion

A critical review of our dataset reveals that one company (OCS) provided two less successful cases, which raises the question whether the lack of success is really due to a lack of effective interaction. Possibly, the lack of success is explained by OCS having less developed management practices. In contrast, the high success of the EIA cases could be explained by EIA having highly developed management practices.

During a round table meeting, which was organized as part of the case research project and attended by the primary contact persons of the participating buying companies, the potential influence of purchasing maturity was brought forward. Purchasing maturity reflects the level of professionalism in purchasing at the business unit level [Rozemeijer et al., 2003]. Six levels can be identified, ranging from a transaction orientation (low purchasing maturity) to a value chain orientation (high purchasing maturity) [Van Weele, 2005].

Based on our findings, we conclude that the purchasing department of OCS is not yet very mature: the main focus here is on cost reduction. Purchasing maturity at FSP, where the focus is on achieving purchasing synergy, is somewhat higher than at OCS; yet, it stands far from a value chain orientation. Both companies provide cases of unsuccessful ongoing service exchange. The companies providing the successful cases indeed have a higher purchasing maturity than the companies providing the unsuccessful cases. Possibly, purchasing maturity can be viewed as an antecedent to differentiated patterns of interaction. It seems useful to investigate this and other antecedents further.

An example is the degree of change in the contract (steady-state versus major redesign). Purchasing maturity at RDO can be considered relatively high; consequently, the low level of success for the instrumental service purchase cannot be explained by the level of purchasing maturity. However, this instrumental service involves a major redesign in which RDO tries to move to a limited number of large international contracts. This may imply that it is more difficult to differentiate interaction when a purchase concerns a new-task situation [Robinson et al., 1967]. In this study, the level of newness of a purchase was accounted for by the use of perceived risk as a control variable; however, the state of contract is an element of newness which may be insufficiently accounted for by our current measurements of newness, and this should be taken into account in future studies.

6.9.2 Limitations and future research

A few critical notes can be made to this study. Firstly, the concept of interaction has been studied by means of one-sided data collection (buying company's perspective). As a result, we have not been able to verify and complement the buying companies' perspectives with the suppliers'. Considering the theory-building nature of this research, this is not considered to be a major problem. Further research however could benefit from studying interaction based on two-sided data collection.

Secondly, a limitation arises with regard to the number of cases studied for each of the four service types. With only one successful and one unsuccessful observation for each service type, the level of confidence in the results obtained may be limited. Although more observations within each service class would have enhanced the robustness of our results, we deemed it more useful to first investigate a limited number of cases, by means of which we can direct our future research efforts. Further research can be aimed at validating the propositions and identifying the nature of the relationship. Our basic line of reasoning suggests that the effective pattern is needed in order to be successful in the ongoing service exchange. As such, we posit a deterministic causal relationship. Although the original classification did not state such a strong relationship between interaction patterns and service exchange success, testing for such a relationship can be a useful starting point. If the results do not support such a relationship, we may opt for a probabilistic relationship using so-called 'rationalist' methods [Meredith, 1998]. Combining rationalist methods with case research increases the potential for enhancing new theories over the use of either method alone.

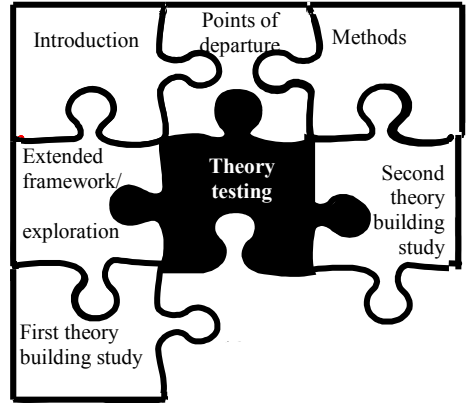
A final limitation has to do with the evaluation of success in the ongoing service exchange. In this study, we rely heavily on perceptions self-reported by managers. Since successful companies are generally expected to have better company cultures, it is likely that managers of these companies claim higher degrees of success. Future research would therefore benefit from developing measures of success that are less prone to respondent bias.

This study has resulted in the development of a set of propositions regarding effective interaction for the four types of business services. Furthermore, various mechanisms for leveraging these patterns have been identified; these mechanisms are generic for all service types. Further research is needed to test our propositions. The findings of this study however provide support for the premise that differentiating the buyer-seller interface and interactive processes results in success in the ongoing service exchange.

Chapter 7 Theory testing

The previous chapter led to the development of effective patterns of interaction for each of the four service types. As such, the classification of business services has been developed into a typology of effective buyer-seller interaction: which pattern is most effective depends on the type of service being purchased. Drawing furthermore on literature arguing in favour for the use of case studies for testing theory, the 'ideal' patterns are considered as necessary conditions for successful ongoing service.

A necessary condition hypothesis test is conducted and not refuted. Furthermore, the necessary conditions are non-trivial.



This article is currently under review at an operations management journal..

Chapter 7

Effective Interaction Patterns between Buyers and Sellers of Business Services: Necessary Condition?³⁹

Wendy van der Valk, Finn Wynstra, Björn Axelsson

ABSTRACT

Previous research has resulted in the development of a typology of effective ongoing interaction between buyers and sellers of business services. According to this typology, there are four types of business services: component, semi-manufactured, instrumental and consumption services. For each of these services, different patterns of interaction are most effective. In this paper, we test whether these effective interaction patterns can be considered necessary conditions for successful ongoing service exchange.

Our hypothesis is confirmed for services characterised by a high level of buyer-perceived risk. Unfortunately, we were unable to determine whether the condition is non-trivial. We were furthermore able to demonstrate that high fit between the observed and the effective interaction pattern is a non-trivial necessary condition for *high success* for component and consumption services, but not for semi-manufactured services. The findings for instrumental services are inconclusive.

Keywords - business services, buyer-seller relationships, interaction, purchasing

7.1 INTRODUCTION

Ongoing interactions have been consistently emphasised by services marketing scholars as being a typical aspect of (business) services [Grönroos, 2000; Zeithaml and Bitner, 1996]. These ongoing interactions have remained largely unacknowledged by scholars in the purchasing and supply management discipline, who have focused on the initial purchasing process as opposed to the ongoing exchange, or on specific services like advertising [Lichtenthal and Shani, 2000; West, 1997], facility services [Ancarani and Capaldo, 2005; Lehtonen and Salonen, 2005; Van Mossel and Van der Valk, 2006] and call

³⁹ The authors furthermore gratefully acknowledge the useful comments of Ferdinand Jaspers, Tony Hak, Luis Araujo, Jan Dul, and Paul Matthyssens, as well those made by attendees of a seminar held in 2007 at the University of Maastricht and by participants of the 3rd IMP Journal Seminar, Trondheim 2007.

centre services [Tate, 2006]). Agndal et al. [2006] point out that many buying companies have organised their purchasing activities around categories of business services with similar ‘technical’ characteristics.

Although the people involved with buying the service need to understand the technical nature of the service and the supplier(s) they are buying from, Wynstra et al. [2006] claim that technical content alone is not sufficient for setting up effective interfaces and interaction processes. They propose a classification based on how the buying company uses the service with respect to its own business processes and argue that this usage-dimension is one of the main determinants of effective ongoing interaction. The classification contains four types of services: two of these are passed on to the buying company’s customers, the other two remain within the buying company.

Taking this classification as a starting point, prior research has identified four distinct patterns of effective ongoing interaction. These effective patterns of interaction for example comprise the involvement of different functional representatives. As such, the classification of business services has been developed into a typology of effective buyer-seller interaction, which specifies effective interactions for each of the four service types.

The objective of this paper is to test whether these effective patterns are necessary for successful ongoing service exchange. We perform this test by means of case research: Dul and Hak [2007] claim that case research is an effective approach for verifying a deterministic causal relationship such as the necessary condition.

The organisation of the paper is as follows: we discuss the typology of effective buyer-seller interaction and subsequently present our hypotheses. After elaborating on our research design, and data collection and analysis methods, we discuss the results of our test. Finally, we present our conclusions and limitations and propose future research directions.

7.2 A TYPOLOGY OF EFFECTIVE BUYER-SELLER INTERACTION

Wynstra et al. [2006] identify four types of business services based on how the buying company uses these services with respect to its own business processes. Two of these, namely instrumental and consumption services, are used within the buying company. Consumption services mostly concern the support processes of the buying company (i.e. catering in the cafeteria of a Fast Moving Consumer Goods company), while instrumental services affect how the buying company’s primary processes are carried out (i.e. Information and Communication Technology for a governmental organisation).

Component and semi-manufactured services on the other hand move downstream in the supply chain to (end) customers of the buying firm. The demand for these services is usually directly related to (end) customer demand. Semi-manufactured services are an input for the buying company’s offering to

(end) customers (i.e. cleaning of an airplane for an airline). Component services are delivered directly to end customers (i.e. hiring external field maintenance specialists at an equipment manufacturer).

This classification builds on existing classifications of industrial goods [Håkansson, 1982] and industrial goods and services [Jackson and Cooper, 1988], and has, given our objective, three main benefits over existing service classifications. Firstly, this classification specifically focuses on *business* services. The classification of business services has received far less attention than the classification of consumer services [Boyt and Harvey, 1997; Jackson and Cooper, 1988]. Secondly, it adopts the buying firm's perspective, as opposed to the supplier's, which is the case in the service classifications of Mills and Margulies [1980] and West [1997]. Finally, it enables the identification of generic similarities and differences across the variety of business services that organisations buy [Smeltzer and Ogden, 2002].

Wynstra et al. [2006] furthermore posit that different patterns of interaction are most effective for each of the four types of business services. Building on this idea, two sequential studies were conducted aimed at identifying what an effective pattern of ongoing buyer-seller interaction looks like for each of the four service types.

Building on research conducted by the Industrial Marketing and Purchasing (IMP) Group [Cunningham and Homse, 1986; Håkansson, 1982; Wynstra et al., 2006], Wynstra et al. [2006] conceptualised interaction in terms of the key objectives of the interaction, as well as the resources (buyer-seller interface and capabilities) required for the interaction. To account for the processual character of interaction, we added communication as a process-dimension of interaction.

Using this conceptualisation, typological types of effective buyer-seller interaction were developed for each of the four service types. Together, these effective interaction patterns and the classification of business services form a typology of effective buyer-seller interaction. Whereas classifications use decision rules to allocate phenomena to one of multiple mutually exclusive and exhaustive categories, typologies “identify multiple effective types, which represent unique combinations of the organisational attributes that are believed to determine the relevant outcome(s)” [Doty and Glick, 1994].

We now elaborate on these effective interaction patterns, first for component and semi-manufactured services (both directed at customers of the buying company), and then for instrumental and consumption services (both directed at the buying company).

7.2.1 Effective interaction for component and semi-manufactured services

The key objective in an effective pattern for component services is to make sure that the service purchased fits with existing service offerings. For

example: when a manufacturer of home appliances buys customer contact services, this service needs to fit with the buying company's overall offering in terms of how call centre agents deal with customers. This requires the involvement of people knowledgeable about end customer requirements (often the marketing department or even end customers). Agents have to be knowledgeable about the buying company's offerings. The buying company needs to be able to translate their customers' requirements to the suppliers, and to coordinate and synchronise the various elements of the service purchased and their own offerings. For example, they have to explain how they want the supplier to treat their customers, as well as provide them with sufficient information on product/ service offerings and the company's values. The supplier in turn has to be able to match capacity with end customer demand and to deal with the buying company's customers in the way the buying company wants them to. Communication concerns the requirements of customers, the fit of the service with the rest of the offering, and the end customers' evaluation of the service.

For semi-manufactured services, the key objective is to make sure that the service to be purchased becomes an integral part of the buying company's customer processes. An example is benefit payment services, carried out on behalf of an employment insurance agency. The service becomes part of the offering to customers; yet, customers do not interact directly with the service provider, but with the buying company. Semi-manufactured services thus are somewhat similar to component services, and representatives of customers need to be involved here as well. Semi-manufactured services furthermore require the involvement of production representatives because the service has to be transformed for and adapted to the buying company's processes rather than just its offerings. In the case of the payment services, the payment issuing process of the buying company and their administration processes need to be integrated with the supplier's execution processes. The buying company needs to be able to explain its processes and specific requirements, and to understand how the service becomes part of their customer processes. The supplier needs to understand how their service affects customers; also, delivery reliability is highly important (in the case of benefit payments, on-time payment is crucial). Communication concerns customer requirements and the fit between the buyer and the suppliers (service) production processes.

7.2.2 Effective interaction for instrumental and consumption services

For instrumental services, the key objective is to achieve the desired effect/ change in the buying company's primary processes. An example is a telecom company hiring management consultancy to professionalise its purchasing function. The fact that instrumental services affect the buying company's processes results in the involvement of business development and process representatives. Here, the functional involvement of the purchasing

department is required, since this department will be affected by the management consultant's service. The supplier needs to understand how the service affects the buying company's primary processes, as well as how the desired effect is to be achieved. In the case of consultancy, a desired effect could be to move to the next purchasing maturity stage. Furthermore, project management/ implementation skills are highly important, to ensure that the supplier will realise the desired change. Since instrumental services usually involve substantial investments with a long-term impact, trends and developments inside the buying company and the supply market are important topics in the communication.

Finally, for consumption services, the key objective of interaction is to have the service fit with various support processes. An example is a bank buying office cleaning services, which should be delivered without disturbing employees or primary processes. It is important that the supplier is able to develop efficient routines and to adapt its service to the specific situation of the buying company, for example by cleaning certain spaces less frequently since they are not used so often. The buying company needs to find good representation of the internal customers/ users of the service (which may be any functional department or all), and has to be able to clearly communicate their requirements. Communication mostly concerns the daily activities and opportunities for improvement.

Table 7.1 summarises the effective patterns of interaction for each of the four service types. Note that the dimensions do not assume values on a continuum; rather, the dimensions are based on nominal scales, where the dimension can assume various different 'forms' rather than values which can be compared.

Prior research showed that patterns of interaction are more clearly visible for services characterised by high buyer-perceived risk. This reflects claims made by scholars from the field of Organizational Buying Behavior: Johnston and Bonoma [1981] and McQuiston [1989] for example demonstrated that the functions/ people involved in interactions with suppliers vary with the level of risk involved with a service. Risk is conceptualised as a function of uncertainty associated with and importance of a purchase. Uncertainty is a function of the complexity and novelty of the purchase. We therefore control for the level of buyer-perceived risk (low versus high) in our analyses of interaction patterns.

Table 7.1 A typology of effective buyer-seller interaction

	Key objectives	Critical supplier capabilities	Critical customer capabilities	Customer representatives	Communication
<i>Component</i>	<ul style="list-style-type: none"> Service has to become an integral part of buying company's offering to end customers 	<ul style="list-style-type: none"> Understanding end customer and how service delivered fits with buying company's customer processes Match service delivery with end customer demand Reliability 	<ul style="list-style-type: none"> Ability to clearly specify customer requirements and how service impacts customer processes Ability to communicate company culture and behaviour 	<ul style="list-style-type: none"> Marketing representatives, people knowledgeable of the buying firm's final offering 	<ul style="list-style-type: none"> Demands of end customer Buying company's customer processes and company culture Transition process Supplier performance Demand management
<i>Semi-manufactured</i>	<ul style="list-style-type: none"> The service should become an integral part of the buying company's primary processes 	<ul style="list-style-type: none"> Understand how service affects performance buying company Flexibility to match demand patterns Reliability 	<ul style="list-style-type: none"> Clearly communicate requirements and the consequences of not meeting requirements Ability to live up to requirements and delivery schedule themselves 	<ul style="list-style-type: none"> Co-producers/service "production" planners End customer representation (marketing/ sales) 	<ul style="list-style-type: none"> End customer requirements Timing of service delivery Trends and developments within buying company and in supply market
<i>Instrumental</i>	<ul style="list-style-type: none"> The service should affect the buying firm's primary processes in the desired way The service should fit with important characteristics of these primary processes 	<ul style="list-style-type: none"> Understand how the service affects the buying company's primary processes Project management/ implementations skills 	<ul style="list-style-type: none"> Ability to communicate desired effect on primary processes (internal customer demands) Ability to enable the supplier in achieving the desired performance 	<ul style="list-style-type: none"> People involved with the primary process at which the service is directed (process engineers) Users of the primary process at which the service is directed 	<ul style="list-style-type: none"> Effects of service on primary processes Performance and improvement opportunities Coordination between primary process and service delivery
<i>Consumption</i>	<ul style="list-style-type: none"> The service should be integrated with various support process 	<ul style="list-style-type: none"> Ability to develop efficient routines Ability to adapt the service to the specific situation of customer 	<ul style="list-style-type: none"> Ability to specify and communicate requirements of various internal customers View service as potential value-added rather than cost 	<ul style="list-style-type: none"> Internal customers (any functional discipline or all) 	<ul style="list-style-type: none"> Internal customer requirements Improvement opportunities Daily business

7.3 HYPOTHESES AND TESTING PROCEDURE

Ragin [1987, as in Fiss, 2007] states that the nature of relationships between an independent variable, which (as in our study) has the form of a configuration, and the dependent variable can best be understood in terms of necessity and sufficiency. A necessary condition hypothesis implies that ongoing service exchange will only be successful if the effective pattern of interaction is present; a sufficient condition hypothesis implies that the ongoing service exchange will be successful if the effective pattern of interaction is present [Braumoeller and Goertz, 2000; Dion, 1998].

Although the original classification did not state a stringent relation between interaction patterns and service exchange success, we posit a necessary condition hypothesis. As opposed to probabilistic relationships, which specify what conditions *are likely to lead to* success, this deterministic relationship provides practitioners with insights on what conditions *are required for* success. The reasons for posing a necessary condition hypothesis are twofold. Firstly, as scholars from various disciplines have brought forward, interaction is crucial in ongoing service exchange [Grönroos, 2000; Johnston, 1999; Roth and Menor, 2003]. Secondly, testing for necessary conditions is useful since examination of the individual cases may provide indications as to how the theory should be adjusted to account for any disconfirmations that may occur. For example: the theory may hold for some, but not all four service types. Or, the five dimensions of interaction may not be equally important for success. Such findings may lead to further development of the typology, for example through refinement of the set of interaction dimensions. Also, the theory may hold only in certain companies, as a result of which the domain of the theory is restricted.

We adopt a case-base research strategy. Although usually considered most apt for exploratory research, case research is increasingly viewed as a suitable approach for theory building [Eisenhardt, 1989; Eisenhardt and Graebner, 2007]. Dul and Hak [2007] argue that case research is also appropriate for *testing* theory: for testing hypotheses expressing necessary conditions, it is the second-best strategy⁴⁰. A necessary condition hypothesis implies that in each case of successful ongoing service exchange (for a specific type of service), the effective pattern of interaction (for that type of service) must be present. We therefore bring forward the following hypotheses:

⁴⁰ The preferred strategy for testing a necessary condition hypothesis is the experiment. An experiment would require manipulation of the independent variable and subsequently observe the effect on the dependent variable. In the case studies, this would imply varying the dimensions of interaction, which will be very hard to do in companies doing every-day business. As a result, an experiment is considered infeasible in this particular study.

H1: In each case of successful ongoing exchange of service type X, the effective interaction pattern for service type X is present, where $X \in \{\text{component, semi-manufactured, instrumental, consumption}\}$.

The formulation of the hypothesis underlines that we treat *each case as a test* of one of the four hypotheses. Dion [1998] notes that verifying whether the effective interaction pattern is present in all cases of successful ongoing service exchange requires selecting cases on the dependent variable. Investigating situations in which the effect did not occur would be redundant: even if the necessary condition would be present, it does not imply that the effect must occur; only that it may occur. As Braumoeller and Goertz [2000, p. 846] pose: “cases in which $Y=0$ are irrelevant to ascertaining the necessity of X for Y and need not be sampled”.

The necessary condition hypotheses are rejected for cases in which there is successful ongoing service exchange without the presence of the effective interaction pattern. If the hypotheses are not rejected, a second step is to evaluate the trivialness of the necessary conditions. After all, a condition may seem necessary but may not at all be related to the desired effect. Think of gravity, which will always be present in cases of writing good papers; however, gravity will also be there when bad papers are written, and is thus a trivial necessary condition. Dul and Hak [2007, p. 78] argue that in order to determine whether the condition is *non-trivial*, one should try to find cases in which the independent variable is absent. While presence of the dependent variable in such cases leads to the rejection of the hypothesis in that specific case, absence of the dependent variable confirms the necessary condition hypothesis and indicates that the condition is non-trivial.

7.4 RESEARCH DESIGN AND DATA COLLECTION METHODS

In a one-off study, we have investigated ongoing buyer-seller interaction in 36 cases (service purchases) at 9 buying companies. We used theoretical selection criteria at the level of the service (studying services from all four classes of the classification at an individual buying company), and at the level of the buying company (selecting service providers and manufacturers with differing production modes and differing types of customers).

The buying companies selected the cases in consultation with the researchers. In earlier studies, eight of these cases were used to develop the effective patterns of ongoing interaction. The remaining set of 28 cases consists of two component, six semi-manufactured, seven instrumental and thirteen consumption services. Table 7.2 lists the services (organized by type), the respective buying companies, and the people interviewed. Although we intended to study one service of each type at every company,

Table 7.2 Services, companies and informants

Type	Service	Company	Informants	
<i>Com- ponent</i>	Call centre services	Telecom company (TEL)	<ul style="list-style-type: none"> ▪ Category Manager Marketing & Call Centre Services 	
	Arranging infrastructure at customer locations	TEL	<ul style="list-style-type: none"> ▪ Category Manager Construction & Engineering 	
	Rental of aerial working platforms	Facility Services Provider (FSP)	<ul style="list-style-type: none"> ▪ Procurement Manager ▪ Business Unit Manager Special Cleaning Services 	
	Bank hall equipment	Bank (BAN)	<ul style="list-style-type: none"> ▪ Purchaser ▪ Project Manager Cards and Circulating Currency 	
	Promotional campaigns	Retail Division Oil company (RDO)	<ul style="list-style-type: none"> ▪ Procurement Executive ▪ Manager Communications BTL & Sales Promotions 	
	Forecourt maintenance	RDO	<ul style="list-style-type: none"> ▪ European Procurement Manager Site Maintenance ▪ Senior Engineer European region A 	
	Promotion/premiums	BAN	<ul style="list-style-type: none"> ▪ Purchaser 	
	Cleaning for delivery	Construction Company (CON)	<ul style="list-style-type: none"> ▪ Purchasing Manager Business Unit A ▪ Head of Purchasing Business Unit A, region 1 	
	IT outsourcing	TEL	<ul style="list-style-type: none"> ▪ Manager Group Category ICT ▪ Chief Information Officer ▪ Former Chief Information Officer Division Fixed 	
	Marketing services	TEL	<ul style="list-style-type: none"> ▪ Category Manager Marketing & Call Centre Services ▪ Category Purchaser Marketing Communications ▪ Category Purchaser 	
<i>Instrumental</i>	Office automation	Employment Insurance Agency (EIA)	<ul style="list-style-type: none"> ▪ Senior Buyer ICT ▪ Project Leader European Tender Office Automation ▪ Portfolio Manager Work Unit Services 	
	PR Agency	FSP	<ul style="list-style-type: none"> ▪ Manager Marketing 	
	Training and education	BAN	<ul style="list-style-type: none"> ▪ Purchaser ▪ Representative of company academy 	
	Training and education	CON	<ul style="list-style-type: none"> ▪ Head corporate education/ Director Corporate Business School 	
	Consumer panel	Fast Moving Consumer Goods company (FMG)	<ul style="list-style-type: none"> ▪ Consumer and Market Insight Manager ▪ Manager Trade Marketing department 	

Table 7.2 Continued

Type	Service	Company	Informants
<i>Consumption</i>	Temporary labour	TEL	<ul style="list-style-type: none"> ▪ Manager Procurement Professional, Financial & HR Services ▪ Human Resources representative call centre
	Cables and connections for work spaces	EIA	<ul style="list-style-type: none"> ▪ Senior Buyer ▪ Service Manager
	Decontamination of soil	Natural gas transportation company (NGT)	<ul style="list-style-type: none"> ▪ Purchaser ▪ Operations department
	Steel conservation	NGT	<ul style="list-style-type: none"> ▪ Purchaser ▪ Project Manager Steel Conservation for Maintenance Purposes
	Temporary IT labour	NGT	<ul style="list-style-type: none"> ▪ Purchasing Manager
	Travel agent	FSP	<ul style="list-style-type: none"> ▪ Procurement Manager ▪ Secretary
	Building maintenance	BAN	<ul style="list-style-type: none"> ▪ Purchaser ▪ Manager Owner Maintenance & Projects
	Office cleaning	BAN	<ul style="list-style-type: none"> ▪ Purchaser ▪ Product Manager m², Interior Design & Maintenance of Buildings
	e-HRM system	Oil and chemical storage company (OCS)	<ul style="list-style-type: none"> ▪ Purchaser ▪ Manager Human Resources
	Security	OCS	<ul style="list-style-type: none"> ▪ Purchaser ▪ Assistant Terminal Manager terminal A
	Interior and exterior design of lease cars	CON	<ul style="list-style-type: none"> ▪ Project Leader Corporate Strategic Sourcing ▪ Representative Corporate Commercial department ▪ Head Facility service building A
	Office cleaning	CON	<ul style="list-style-type: none"> ▪ Office manager/ Head Civil Services building B ▪ Representative Corporate Facility Management department
	Office cleaning	FMG	<ul style="list-style-type: none"> ▪ Manager Facilities and Services Business Unit A

data analysis led to the reclassification of some services. As a result, the 28 services are unequally distributed across the four classes of the classification. Because our study was quite time- and resource-consuming at each individual company, we did not want to burden the companies with additional data collection. Rather, we reclassified services when necessary and maintained our original data set. We return to this issue of a skewed distribution of cases in our limitations section.

7.4.1 Data collection I: interviews

Detailed data collection took place through semi-structured interviews of 1.5 to 2 hours with buyers (focusing mainly on the *purchasing process*) and with contract owners and/ or users (focusing on the *ongoing exchange*). Interviewing multiple functional representatives enables data source triangulation [Yin, 2003]. We based our interview questions on the list of questions used in the studies of the IMP Group [Håkansson, 1982]. Topics addressed were the characteristics of the buying and supplying company involved, the characteristics of the service being exchanged, the purchase process and the period after the contract was signed (ongoing service exchange). Usually, the buyer was approached first; the buyer in turn identified other informants. Although we did not collect data *at* the suppliers, we did collect data *on* the suppliers by asking the buying company about their representatives, actions/ behaviours, viewpoints, et cetera.

Extensive interview summaries were made, which were sent back to the interviewees for verification. Data thus came from analysing and interpreting what interviewees were trying to say [Stuart et al., 2002]. Approved interview summaries were merged into a case summary, which was again verified with the interviewees in order to eliminate inconsistencies and to clarify issues when necessary. The case summaries were also extensively discussed among the principal researcher and the two co-authors of this paper to further enhance validity. Table 7.3 briefly summarises how we dealt with issues of validity and reliability.

7.4.2 Data collection II: self-administered questionnaires

Although the interviews addressed the topics of success and risk, all interviewees also evaluated these two variables by means of a self-administered questionnaire (Appendix D). The data thus obtained would be less prone to interviewee subjectivity; furthermore, the data would enable more objective comparisons across the cases studied.

We asked the informants to evaluate the *success* of the process and the outcome of the ongoing service exchange relative to their expectations in advance of the start of the contract period. Questionnaire items were derived

Table 7.3 Validity and reliability in the case studies

Type of validity	Methods of addressing this in the case studies
<p><i>Construct validity</i></p> <p>“establishment of correct operational measures for the concepts being studied”</p>	<ul style="list-style-type: none"> ▪ Triangulation of questionnaire and interview data ▪ Triangulation of multiple informants: different internal representatives ▪ All informants received draft versions of the interview report for comments ▪ Draft versions of the case reports were verified with all informants ▪ Complete case reports verified with key informant from each buying firm ▪ Three research team members gave input during data collection and analysis ▪ Result: emergent explanations adjusted and expanded; participants agreed to the interpretations
<p><i>Internal validity</i></p> <p>“establishing causal relationships whereby certain conditions are shown to lead to other conditions, as distinguished from spurious relationships”</p>	<ul style="list-style-type: none"> ▪ Use of conceptual framework ▪ Result: relationships between the different variables from the conceptual framework identified and substantiated
<p><i>External validity</i></p> <p>“establishing a domain in which the study’s findings can be generalized”</p>	<ul style="list-style-type: none"> ▪ Theoretical selection of cases at the firm level and the level of the service purchase ▪ Result: framework applicable to different types of firms and service purchases
<p><i>Reliability</i></p> <p>“demonstrating that the operations of a study can be repeated with the same results”</p>	<ul style="list-style-type: none"> ▪ Development of case protocol ▪ Development of (interview) questionnaire ▪ Result: methodology transparent and repeatable

Based on: Yin (2003).

from the interview questions and were equally weighed. A single score was obtained by averaging the scores for each service across all respondents and all items (thus, the maximum score for success is 5.0). We deemed this appropriate since a bad outcome can be mitigated by a good process [Matthyssens, 1998, p. 99]. Consequently, it is not sufficient to focus on outcome quality only: process quality is just as (or perhaps even more) important.

The questionnaire results showed discrepancies for a few cases: these discrepancies were resolved through verification with interview data, the key contact, and the researchers' observations. Although a score of 3.0 represents a logical cut-off value for success, the fact that 25 out of 28 services had success scores between 3.0 and 5.0 led to the decision to investigate the relationship between interaction and success in more detail. Four ranges of success were identified: disillusion ($1.0 \leq \text{success} < 2.0$); disappointment ($2.0 \leq \text{success} < 3.0$); satisfaction ($3.0 \leq \text{success} < 4.0$); and delight ($4.0 \leq \text{success} < 5.0$).

The level of *buyer-perceived risk* was evaluated through measuring the importance, the complexity and novelty of the service. Items were derived from literature (see for example McQuiston [1989] on operationalisations of these concepts). Discrepancies were again resolved by going back to interview data, the key contact, and researchers' observations. A single score was calculated by averaging the scores on novelty and complexity (to determine uncertainty) and multiplying this score with an average score on importance⁴¹ (thus, the maximum score for risk is 25). In line with the four categories for success, four categories of risk were identified: very low ($1.0 \leq \text{risk} < 4.0$); low ($4.0 \leq \text{risk} < 9.0$); high ($9.0 \leq \text{risk} < 16.0$); and very high ($16.0 \leq \text{risk} < 25.0$).

We now turn to data analysis, which comprises two sequential steps: 1) analysing the interview data to develop descriptions of the observed interaction patterns; and 2) evaluating the fit between the observed and the effective interaction patterns. We deal with each of these steps separately.

⁴¹ We chose for multiplication over averaging the scores on importance and uncertainty, since averaging would potentially even out a high score on importance or uncertainty (or both), which does not properly reflect the associated level of risk. Multiplication in contrast results in an exponential increase in risk when either or both importance and uncertainty are high, thereby differentiating more strongly those services with low, medium and high risk. According to Peter and Ryan [1976], a multiplication approach to obtain an overall indication of risk is common. Mitchell [1999] states that the logic for this multiplicative model is not provided in literature, but is likely to stem from probability theory, in which probabilities are multiplied with monetary values to calculate expected gains.

7.5 ANALYSIS OF INTERVIEW DATA

We analysed our *interview data* following the different steps in qualitative data analysis as suggested by Miles and Huberman [1994]. First, we identified the parts of the interview transcripts which were most relevant for our analysis and coded these texts. We specifically sought to extract excerpts regarding the individual dimensions of interaction, the initial stages of the purchase process, risk and success. Findings on the latter two were later triangulated with the results of the questionnaires. The excerpts were brought together in data tables, examples of which will follow later in this section.

We first present rich descriptions of our interview data as an illustration of how we derived patterns of interaction. Note that for purposes of length, we only present the rich descriptions for two semi-manufactured and two instrumental services. As such, we select one service type of each of the two main groups (component/ semi-manufactured versus instrumental/ consumption), thereby maximizing variation in the data presented. Having rich descriptions for a limited number of services and service types enables the reader to make comparisons across service types and understand the analysis procedures followed, while at the same time limiting the amounts of qualitative data to absorb.

7.5.1 Semi-manufactured services

A facility services provider (FSP) rents capital equipment (aerial working platforms) from specialist suppliers and uses these platforms to perform cleaning activities on the exterior of customer buildings. This service is a semi-manufactured service since it is used as an input in FSP's service delivery process. To prevent delays in their FSP's service delivery process, the correct working platform has to be available when and where FSP needs it. FSP clearly communicates their planning and the requirements for each customer location (number of stories of the building to be cleaned, type of premises, et cetera). Furthermore, the FSP employees that schedule the assignments with clients and the required man hours are in direct contact with the people scheduling the aerial working platforms at the supplier. Delivery reliability is an important supplier capability (FSP incurs a revenue loss if the platform is delivered late), as well as keeping track of developments with regard to safety regulations. FSP has involved the business unit managers as well as people knowledgeable about what goes on at a customer location and customer requirements. Based on these observations, we expect that there is fit between the observed and the effective pattern of interaction.

The Retail Division of an Oil company (RDO) purchases forecourt maintenance, which comprises maintenance to and around gas stations (fuel systems, pavement, buildings, et cetera). This service is a semi-manufactured service, since it RDO's customers are confronted with the results of maintenance (e.g. the gas station should look neat, and fuel pumps should

Table 7.4 Observations for semi-manufactured services

	Key objectives	Critical supplier capabilities	Critical customer capabilities	Customer representatives	Communication
<i>Cleaning for delivery at CON</i>	<ul style="list-style-type: none"> ▪ Cleaning at the end of a construction project 	<ul style="list-style-type: none"> ▪ Performing basic cleaning activities (e.g. sweeping) ▪ Being available on demand 	<ul style="list-style-type: none"> ▪ Specify cleaning activities to be performed 	<ul style="list-style-type: none"> ▪ Purchasing (central and local) ▪ Representatives of operating companies performing construction projects 	<ul style="list-style-type: none"> ▪ Quality of cleaning activities ▪ Evaluation per individual project ▪ Periodical evaluation
<i>Aerial working platform at FSP</i>	<ul style="list-style-type: none"> ▪ Availability of correct platforms to prevent disruption of FSP's customers processes 	<ul style="list-style-type: none"> ▪ Delivery reliability and responsiveness/ flexibility ▪ Ability to inform FSP of safety requirements and field-specific developments 	<ul style="list-style-type: none"> ▪ Clearly communicate cleaning job characteristics ▪ Reliable planning of jobs 	<ul style="list-style-type: none"> ▪ Purchasing ▪ BU managers ▪ Someone who has an overview of jobs and allocates them to suppliers 	<ul style="list-style-type: none"> ▪ Job characteristics (required height, kind of material platform will work from (sand, concrete), et cetera) ▪ Progress of jobs ▪ Annual evaluation
<i>Bank hall equipment at BAN</i>	<ul style="list-style-type: none"> ▪ Developing ATMs that service customers quickly, reliably and effectively 	<ul style="list-style-type: none"> ▪ Understand end customer skills to operate ATMs ▪ Ability to minimise downtime and schedule maintenance accordingly 	<ul style="list-style-type: none"> ▪ Explain customer requirements 	<ul style="list-style-type: none"> ▪ Purchasing ▪ Product management ▪ Software specialists ▪ External customers ▪ Approval by line managers 	<ul style="list-style-type: none"> ▪ Customer evaluation of prototypes ▪ Maintenance/ repair performance ▪ Replacement of incumbent ATMs ▪ Two strategic meeting / year; daily operational contact

Table 7.4 Continued

	Key objectives	Critical supplier capabilities	Critical customer capabilities	Customer representatives	Communication
<i>Premiums at BAN</i>	<ul style="list-style-type: none"> End customer bonding through premium 	<ul style="list-style-type: none"> Understand characteristics of premium target segment and desired customer perception Availability of premium when promotion starts Safety (premiums for children) 	<ul style="list-style-type: none"> Communicate characteristics of target segment and desired perception of promotional campaign 	<ul style="list-style-type: none"> Purchasing Marketing/communications 	<ul style="list-style-type: none"> End customer characteristics and perceptions Quality, safety, availability premium and time schedule Intensive communication during development
<i>Forecourt maintenance at RDO</i>	<ul style="list-style-type: none"> Up keeping technical performance of fuel systems and facilities without disrupting the customer process 	<ul style="list-style-type: none"> Ability to minimise disruption of RDO's customer process Responsiveness in case of problems 	<ul style="list-style-type: none"> Clearly communicate current status of technical installations and facilities 	<ul style="list-style-type: none"> Purchasing Engineering 	<ul style="list-style-type: none"> Coordination of activities, planning/ progress/ budgets Coordination daily/ hourly, informal contact twice a week and monthly formal meeting
<i>Promotional campaigns at RDO</i>	<ul style="list-style-type: none"> End customer bonding through promotions with specific products (i.e. a can of soda) 	<ul style="list-style-type: none"> Understand characteristics of promotion target group Understand RDO's desired appeal to customers Availability of products when promotion starts 	<ul style="list-style-type: none"> Communicate target customer characteristics Maintain the schedule of the promotional campaign 	<ul style="list-style-type: none"> Purchasing Marketing Division manager approves of campaign 	<ul style="list-style-type: none"> End customer characteristics and desired perception Basic idea (if available) Promotion availability/ start of campaign Communication assignment-related with increasing intensity

work). Maintenance should be performed in a way that does not disturb the customer processes. The supplier tries to minimise downtime of the technical systems, as well as any disturbance resulting from maintenance activities. Furthermore, the supplier is responsive in case reactive maintenance is required. RDO clearly explains the current status of systems and facilities and communicates these timely so that the supplier can plan his workload. In contrast to our expectations that marketing would be involved with semi-manufactured services, there is neither marketing / sales involvement nor some other kind of customer representation. We therefore expect low fit between the observed and the effective pattern.

Table 7.4 summarises the data collected for all semi-manufactured services.

7.5.2 Instrumental services

Table 7.5 presents the results for all instrumental services studied. Training and educational services are purchased to develop the skills and competencies of the construction company (CON)'s employees, and thus affect the way CON carries out its primary processes. Therefore, it is an instrumental service. CON has its own business school, which hires third parties to provide short skills training, company-specific training; project management training, and (international) management training. The key objective of interaction is to develop CON's employees' skills in the desired way. CON therefore determines the current skill levels and specifies the desired change in employees' skills and competencies. This enables the supplier to provide appropriate training for individual employees. Furthermore, suppliers of company-specific training have a thorough understanding of the industry CON is operating in. CON representatives involved are people organising the training ('engineers' of the training process), as well as various employees or their representatives (internal customers). Communication concerns skills to be developed and organisation of the training.

For IT Outsourcing at TEL, the key objective is to have the supplier take over all managed IT so that they can use their expertise to improve the quality of services delivered, while reducing costs. Since IT is a major enabler for TEL's organisation and affects the way in which TEL carries out its primary processes, this service is an instrumental service. TEL put effort in explaining their primary processes and determining desired service levels, since the supplier needs to organise the IT in a way which supports the primary processes and develops them further. TEL mostly involved people with an IT background, people from finance and legal representatives. Purchasing involvement was largely lacking, especially in the beginning of the outsourcing trajectory. After signing the contract, TEL expected the supplier to conform to the agreements made, thereby neglecting the transition of managed IT from TEL to the supplier. As a result, the supplier is still trying to get

organised and has hardly been able to contribute to business development. This has put substantial pressure on the outsourcing relationship: intensive communication takes place to resolve the issues.

7.6 EVALUATING FIT BETWEEN OBSERVED AND EFFECTIVE INTERACTION

The evidence from the interviews was used to develop descriptions of *interaction patterns* for each of the individual cases studied. These descriptions were subsequently evaluated in terms of their similarity to the effective pattern of interaction for that specific service type. Similarity was conceptualised as fit as profile deviation [Venkatraman, 1989]; the overall assessment of fit was based on the extent to which deviations occurred on the individual dimensions. The principal researcher evaluated fit on a nominal scale (low, medium, high); the results of this step were again discussed with the two co-authors of this paper to enhance reliability. These scores were then correlated with the nominal values of the dependent variable (where disillusion and disappointment represent low success, satisfaction represents medium success, and delight represents high success)

Additionally, the fit between observed and effective interaction patterns was determined by a panel of independent judges for two reasons. Firstly, the evaluations of the judges were used to reduce potential researcher bias. Such bias, according to Johnston et al. [1999], may result from the researchers having specified the effective patterns, performed data collection, described the observed patterns and made the comparison. Hirschman [1986] suggests to subject the findings of a study to outside auditors to evaluate whether the findings appear logical and free from prejudice. Johnston et al. [1999] claim that many accepted data collection methods used in marketing research use multiple judges to interpret qualitative data. Secondly, the judges (who were unaware of the success scores) would evaluate fit on a five-point ordinal scale, which enables the identification of more precise relationships (for example, between effective interaction and delight rather than satisfaction).

We composed a panel of judges consisting of people doing research in the area of business services or in the broader field of purchasing and supply management. For each case, the judges evaluated the fit of each individual dimension (because of the high workload involved with evaluating 28 cases on five dimensions, we used two sets of judges each evaluating half of the cases). Since the scores on the individual dimensions did not differ substantially between the two types of judges, we deemed it suitable to average all judges' fit scores for a specific dimension. Since we had no reasons a priori to believe that some dimensions may be more important than others, all dimensions were weighed equally when calculating the overall fit of the pattern. Four categories of fit were identified: complete misfit ($1.0 \leq \text{fit} < 2.0$); misfit ($2.0 \leq \text{fit} < 3.0$); fit ($3.0 \leq \text{fit} < 4.0$); and complete fit ($4.0 \leq \text{fit} < 5.0$).

Table 7.5 Observations for instrumental services

	Key objectives	Critical supplier capabilities	Critical customer capabilities	Customer representatives	Communication
<i>Training and education at CON</i>	<ul style="list-style-type: none"> ▪ Provide training that will develop employees' skills in desired way 	<ul style="list-style-type: none"> ▪ Understanding employees current skills and skills to be developed ▪ Understanding primary processes of buying firm and specific characteristics of the industry 	<ul style="list-style-type: none"> ▪ Identify and clearly communicate desired (change in) employee skill level 	<ul style="list-style-type: none"> ▪ Director of internal business school (member of personnel department) ▪ Local director ▪ Training coordinator ▪ Head of Personnel ▪ HR consultant 	<ul style="list-style-type: none"> ▪ Employee skills to be developed, areas of attention for individuals ▪ Training content, duration, organisation ▪ Results of training (evaluation) ▪ Intensive communication during development of training, annual evaluation
<i>IT Outsourcing at TEL</i>	<ul style="list-style-type: none"> ▪ Achieving the desired effect of enabling the TEL organisation through professional IT support 	<ul style="list-style-type: none"> ▪ Operational IT excellence ▪ Ability to think in terms of improving TEL's front end processes ▪ Ability to transform experiences with other customers into ideas for improvement 	<ul style="list-style-type: none"> ▪ Ability to communicate desired effects on primary processes ▪ Understand how TEL's performance affects supplier performance ▪ Being operationally enabling 	<ul style="list-style-type: none"> ▪ IT, procurement, legal, former Director IT ▪ business division, higher management – multiple representatives per discipline, large team complemented with temporary members 	<ul style="list-style-type: none"> ▪ Intensive face-to-face communication on a daily basis, about the content of the service and the collaboration/ relationship (strategy alignment, transition process, optimisation, partnership, progress)
<i>Marketing services at TEL</i>	<ul style="list-style-type: none"> ▪ Achieving the desired improvement and sustenance of business performance (e.g. market share, profitability) 	<ul style="list-style-type: none"> ▪ Ability to contribute to TEL's business performance ▪ Ability to deliver outstanding quality 	<ul style="list-style-type: none"> ▪ Focus on the content/result rather than the process of providing marketing services (managing output) ▪ Being operationally enabling 	<ul style="list-style-type: none"> ▪ Involvement of purchasing, marketing, communication, business stakeholders – one or two representatives per discipline 	<ul style="list-style-type: none"> ▪ Intensive communication during assignments ▪ Monthly meetings to discuss scorecards ▪ Strategy alignment and relationship

Table 7.5 Continued

	Key objectives	Critical supplier capabilities	Critical customer capabilities	Customer representatives	Communication
<i>PR Agency at FSP</i>	<ul style="list-style-type: none"> ▪ Publishing articles in outlets that offer visibility to existing and new customers 	<ul style="list-style-type: none"> ▪ Being knowledgeable about relevant magazines and skilled at 'selling' articles 	<ul style="list-style-type: none"> ▪ Clearly communicate target audience and message they want to get across 	<ul style="list-style-type: none"> ▪ Marketing manager 	<ul style="list-style-type: none"> ▪ Progress on publishing articles submitted by FSP ▪ Publicity value ▪ Communication assignment-related, annual performance evaluation
<i>Consumer panel at FMC</i>	<ul style="list-style-type: none"> ▪ Provide market information to marketing/ sales managers so they can do their job 	<ul style="list-style-type: none"> ▪ Understand how information will be used to change marketing/ sales strategy ▪ Understand fit between service provided and processes marketing department ▪ Understand requirements internal users 	<ul style="list-style-type: none"> ▪ Identify information needs and communicate these 	<ul style="list-style-type: none"> ▪ Representatives marketing departments ▪ Category management 	<ul style="list-style-type: none"> ▪ Internal demands (level of detail data, timeliness of delivery, et cetera) ▪ Innovative ideas (cross-category thinking, information sharing) ▪ Weekly contact, annual evaluation
<i>Training and education at BAN</i>	<ul style="list-style-type: none"> ▪ Delivering training that will contribute to BAN's employees' skills 	<ul style="list-style-type: none"> ▪ Understand employees' skills and specific needs ▪ Understand BAN's primary processes ▪ Understand desired effect of training 	<ul style="list-style-type: none"> ▪ Clearly communicate desired (changes in) employee's skills ▪ Ensure that employees that participate have sufficient capabilities at beginning of training 	<ul style="list-style-type: none"> ▪ Purchasing ▪ Educational specialists (buying company has internal academy) ▪ Approval by steering committee 	<ul style="list-style-type: none"> ▪ Employee skills to be developed, specific areas of attention for individuals ▪ Results of training (were the desired objectives achieved) ▪ Intensive communication during development of training, annual evaluation
<i>Office automation at EIA</i>	<ul style="list-style-type: none"> ▪ Achieving the desired effect which is enabling EIA employees in their daily activities 	<ul style="list-style-type: none"> ▪ Technical capabilities: quality, operationally enabling ▪ Understand how their performance affects EIA's daily operations ▪ Ability to increase efficiency 	<ul style="list-style-type: none"> ▪ Ability to clearly communicate requirements and how the supplier can enable EIA 	<ul style="list-style-type: none"> ▪ Involvement of Director ICT, purchasing, contract management, legal, service management, architects – one or multiple representatives per discipline 	<ul style="list-style-type: none"> ▪ Regular communication at various organisational levels (operational/ tactical/ strategic) regarding issues ranging from service performance to strategic relationship ▪ Service level meetings for daily coordination (multiple times per week)

Table 7.6 summarises the data obtained on fit, success and risk for each of the 28 cases.

Table 7.6 Results of the judging panel

Service	Service type	Fit by researchers	Fit by judges (1-5)	Success (1-5)	Risk (1-25)
1. Call centre services	CMP	High	4.00	4.2	9.8
2. Arranging infrastructure	CMP	Medium	3.37	3.6	5.2
3. Rental of aerial working platforms	SEM	Medium	3.20	3.7	7.0
4. Bank hall equipment	SEM	High	3.69	3.7	6.8
5. Promotion/ premiums	SEM	Medium	3.37	5.0	6.9
6. Promotional campaigns	SEM	Medium	3.37	3.8	8.0
7. Forecourt maintenance	SEM	High	3.43	3.5	6.7
8. Cleaning for delivery	SEM	Low	2.80	3.2	4.2
9. Training & education CON	INS	High	3.97	3.6	3.4
10. IT Outsourcing	INS	High	4.31	3.2	10.5
11. Consumer panel	INS	Medium	3.57	3.1	8.6
12. Training and education BAN	INS	Medium	4.00	2.8	3.4
13. Marketing services	INS	High	3.83	3.4	4.8
14. PR Agency	INS	Medium	3.20	3.1	6.4
15. Office automation	INS	Low	3.72	2.4	14.3
16. Interior & exterior design of lease cars	CNS	High	4.14	4.1	6.9
17. e-HRM system	CNS	Low	3.63	3.7	8.3
18. Office cleaning FMG	CNS	High	4.24	4.4	3.4
19. Temporary labour	CNS	High	3.80	3.9	3.8
20. Office cleaning CON	CNS	Medium	4.11	3.5	4.5
21. Security services	CNS	Medium	3.40	3.1	5.0
22. Office cleaning BAN	CNS	High	4.43	4.5	7.9
23. Office maintenance	CNS	High	3.74	3.1	5.9
24. Soil decontamination	CNS	High	3.97	3.1	8.4
25. Travel agent	CNS	Low	3.97	1.8	1.5
26. Temporary IT labour	CNS	Low	3.60	3.5	11.9
27. Cables & connections for work spaces	CNS	High	3.94	3.7	10.3
28. Steel conservation	CNS	Low	3.02	3.4	9.4

7.7 TESTING FOR NECESSARY CONDITIONS

In order to investigate the correlation between the two evaluations of fit, Figure 7.1 plots the judges' evaluations of fit against those of the researchers: it

can be seen that overall, the judges' evaluations are not too different from the evaluations of the researchers. Therefore, the judges' evaluations of fit were used to test our necessary condition hypotheses. In our test, we control for the level of buyer-perceived risk, since in cases of low risk, companies may put limited efforts into designing effective interaction patterns, which results in low fit.

Fit determined by judges	<i>High</i>	X	1	5
	<i>Medium</i>	5	8	8
	<i>Low</i>	1	X	X
		<i>Low</i>	<i>Medium</i>	<i>High</i>
		Fit determined by researchers		

Figure 7.1 Agreement on fit between researchers and judges

Effective interaction: a necessary condition for success?

Figure 7.2 presents the results of the test for necessary conditions for all services studied.

Successful	<i>Buying company delight</i> (4.0 ≤ success < 5.0)	1	1	24	4
	<i>Buying company satisfaction</i> (3.0 ≤ success < 4.0)	1	17	2	
Unsuccessful	<i>Buying company disappointment</i> (2.0 ≤ success < 3.0)	0	1	3	1
	<i>Buying company disillusion</i> (1.0 ≤ success < 2.0)				1
		<i>Complete misfit</i> (1.0 ≤ fit < 2.0)	<i>Misfit</i> (2.0 ≤ fit < 3.0)	<i>Fit</i> (3.0 ≤ fit < 4.0)	<i>Complete fit</i> (4.0 ≤ fit < 5.0)
		Absence of effective pattern		Presence of effective pattern	

Figure 7.2 Results of the test for necessary conditions

At the most general level, the figure can be read as a 2X2 matrix; the numbers in the centre of the four quadrants represent the total number of cases in that quadrant. The upper-left quadrant contains one case; the upper-right 24; the lower-left quadrant has zero and the lower-right three cases. These three cases are irrelevant for testing our hypothesis, since we only need to look at cases with success and verify whether the condition has been met. The high fit scores of these cases imply that success *may* follow, not that it *inevitably* will, as is the case with a sufficient condition hypothesis. (Note however that the lack of success in these three cases lead to rejection of the sufficient condition hypothesis. Simply stated: effective interaction patterns are required, but not sufficient to avoid failure.)

We thus have 24 confirmations of our hypothesis and one disconfirmation. Investigating the disconfirmation, namely cleaning for delivery bought by CON, in more detail indicates that the service is characterised by low risk (RISK = 4.2). As a result, the buying company may not put a lot of effort into designing effective interaction patterns. Analysing the questionnaire data reveals that the low score on risk comes from low scores on items related to importance. Due to its low importance, CON seems to treat this service as a consumption service. For example: CON does not consider the service to be an important part of their offering to end customers (KEYOBJ = 3.33). Consequently, the suppliers selected lack the capabilities which are required for semi-manufactured services (SUPCAP = 2.00). Finally, the integration of the service with the end offering is not a topic in the communication (COMM = 2.14). Still, CON perceives the service purchase as fairly successful. This observation suggests that for low-risk services, success may also be obtained when there is no fit between the observed and the effective interaction pattern.

The high number of confirmations provides confidence that the presence of an effective interaction pattern is necessary for successful ongoing service exchange. Dul and Hak [2007] state that when the upper-left quadrant contains a very small number of cases in comparison to the number of cases located in the other three quadrants, the condition is pragmatically deterministically necessary. However, we cannot determine whether the condition is non-trivial, since we lack cases in the lower-left quadrant: we did not study cases in which the independent variable is absent/ cases of complete misfit. Such cases are difficult to find in practice, since complete misfit has a negative connotation for companies (not successful). Consequently, companies will be reluctant to have such cases researched.

7.7.1 Highly effective interaction: a necessary condition for high success?

We now apply our more fine-grained categories of fit and success. In the resulting 4X4 matrix, we look specifically at the cases in the upper-right quadrant: cases of complete fit and buying company satisfaction on the one, and cases of complete fit and buying company delight on the other. Here, the necessary condition hypothesis states that a very high fit between the observed and the effective pattern of interaction for a specific type of service is necessary for buying company delight. We have 21 confirmations (seventeen plus four) and one disconfirmation (again, the two cases in the lower-right corner of the upper-right quadrant are again irrelevant for our test). Furthermore, this necessary condition is *non-trivial*.

In the disconfirming case, i.e. development of premiums purchased by a bank (BAN), the level of risk is again low. Consequently, BAN has not designed effective interaction patterns. Despite a lack of fit, BAN still perceives this service as being successful. This case provides additional support for the idea that with low-risk services, success may also be obtained when there is no fit between the observed and the effective interaction pattern.

7.7.2 Does the necessary condition hold for all service types?

So far, we have treated all 28 cases alike. Our objective however was to test necessary condition hypotheses at the level of the service *type*. Figure 7.3 shows that both necessary condition hypotheses (i.e. for satisfaction and delight) hold for component and consumption services, since all component and consumption cases are either on the diagonal or at the right-hand side of the diagonal (the latter are irrelevant for the test of the hypotheses). However, since the number of component cases is limited, replications are required to inspire confidence in either of the necessary conditions.

The necessary condition for satisfaction holds also for instrumental services. The necessary condition for delight cannot be tested, since we lack cases of delight for instrumental services. Finally, neither of the necessary conditions holds for semi-manufactured services. We will come back to this result in the next section.

Successful	Buying company delight ($4.0 \leq \text{success} < 5.0$)			1	1, 3
	Buying company satisfaction ($3.0 \leq \text{success} < 4.0$)		1	1, 4, 5, 7	1, 1
Unsuccessful	Buying company disappointment ($2.0 \leq \text{success} < 3.0$)			1	1
	Buying company disillusion ($1.0 \leq \text{success} < 2.0$)				1
		Complete misfit ($1.0 \leq \text{fit} < 2.0$)	Misfit ($2.0 \leq \text{fit} < 3.0$)	Fit ($3.0 \leq \text{fit} < 4.0$)	Complete fit ($4.0 \leq \text{fit} < 5.0$)
		Absence of effective pattern		Presence of effective pattern	

Figure 7.3 Results of the test at the level of the service type
 (○ = CMP, □ = SEM, ▱ = INS, △ = CNS)

7.8 CONCLUSIONS AND DISCUSSION

Prior studies into effective interaction between buyers and sellers of different types of business services resulted in a set of necessary condition hypotheses for successful ongoing service exchange. In this article, these hypotheses were tested using 28 service purchases.

We tested two necessary condition hypotheses: 1) whether the effective pattern of interaction is a necessary condition for buying company satisfaction) and 2) whether a highly effective pattern of interaction is a necessary condition for buying company delight. Neither of the hypotheses is rejected for component and consumption services; the second condition is found to be non-trivial. For instrumental services, the first hypothesis is not rejected. The second could not be tested since we lack cases of buying company delight for instrumental services. For semi-manufactured services, both hypotheses are rejected. This was explained by the fact that the semi-manufactured services causing the rejection were characterised by low risk, as a result of which buying companies put less effort in designing effective interactions.

The fact that we find support for the necessary condition hypotheses for component services on the one and consumption services on the other hand suggests that there indeed are major differences between the two main groups of services (those that are passed on to end-customers versus those that remain within the buying company). The differences within each of these groups (e.g. between component and semi-manufactured services, or between instrumental and consumption services) apparently need further development.

The typology therefore comprises an important contribution to the fields of services marketing/ service management and purchasing and supply management. On the one hand, the classification focuses on business services; includes services that move downstream to end customers; identifies services from a buying firm's rather than a provider's perspective; and enables comparison across a wide variety of business services. On the other hand, the typological types of interaction draw specific attention to the daily production and consumption of services and provide buying companies and service providers with specific guidelines on how to achieve successful ongoing service exchange.

An important contribution is also made to the interaction literature, which mainly focuses on goods. Moreover, the relationship between interaction and performance has been specified more precisely in the form of a necessary condition. Finally, a contribution is made with regard to research strategy, since we explicitly demonstrate how case studies can be used for testing theory. As such, this study is probably one of few in management to have applied case research in such a rigorous manner.

Practitioners can use these effective patterns of interaction as a guideline for designing their own interactions. If buying companies do not design an interaction which is similar to the effective pattern of interaction, the ongoing service exchange will not be successful. Buying companies should therefore focus sufficient attention on how the service is used within their company and design the interaction with the service provider accordingly. Although the guidelines are specific for buying companies, they can provide service suppliers with insights in how the buying company uses the service and consequently how they would like to deal with the provider. Suppliers can then organize themselves in a way that is consistent with the buyer's interaction patterns.

7.9 LIMITATIONS

Although this study has substantially increased our understanding of the type of relationship between effective interaction and success, a few critical remarks need to be raised. Firstly, data collection was limited to the side of the buying company, since we deemed it more valuable to search for regularities across a small number of buying organisations, rather than having in-depth

insights regarding a limited number of buyer-seller relationships. As a result however, we have obtained a one-sided view on interaction. Future studies should therefore aim at collecting data at both buyer and supplier.

Secondly, since our questionnaires used more items to measure process success than outcome success, the first has a stronger impact the overall success score. However, since the process is a means to achieve a certain outcome and thus perhaps more important, we do not consider this to be very problematic. We would like to stress that the objective of the questionnaires was to triangulate the observations from the interviews rather than to develop an advanced instrument for measuring success. As Johnston et al. [1999, p. 208] state, questionnaires are usually analysed in combination with more detailed data obtained from for example interviews: in our study, we used the interview data to better interpret the results of the questionnaires.

Another critical comment needs to be raised with regard to the use of the judging panel. The cases that led to rejection of our hypotheses were both semi-manufactured cases. A follow-up exercise in which the judges that did not evaluate the fit for these cases were asked to classify these services based on the description of the observed patterns showed that premiums were classified as a component service, whereas cleaning for delivery was classified as a consumption service. Although for these services, we are not in doubt about the way in which they were allocated to the different service classes, in the future, we have to take into account the possibility that we may misclassify some services. For now, it seems valuable to verify the classification of the other semi-manufactured services as well, since low fit as a result of misclassification would lead to unjust rejections of our hypotheses.

A final limitation arises with regard to the fact that both the effective types and the observed patterns were described by the research team. As a result, observed patterns are potentially biased towards the effective pattern, which may explain the high scores on fit for the unsuccessful cases. Given the fact that large amounts of field work were performed for this study, resulting in rich qualitative descriptions, it was deemed not preferable to let others describe the observed patterns. For future research efforts however, it may be better to have others develop descriptions of the observed patterns, and yet others to make the judgments.

7.10 FUTURE RESEARCH

This study has advanced our understanding of the type of relationship between patterns of interaction and success in the ongoing service exchange. We have demonstrated that highly effective patterns of interaction can be considered non-trivial necessary conditions for highly successful service exchange for two of the four service types, i.e. component and consumption services. However, for some service types, we only have a few cases on which

to build our analysis. This study should therefore be replicated with a sufficient number of component cases. In order to investigate the second necessary condition hypothesis for instrumental services, we need to find cases of buying company delight and verify whether these cases are associated with complete fit.

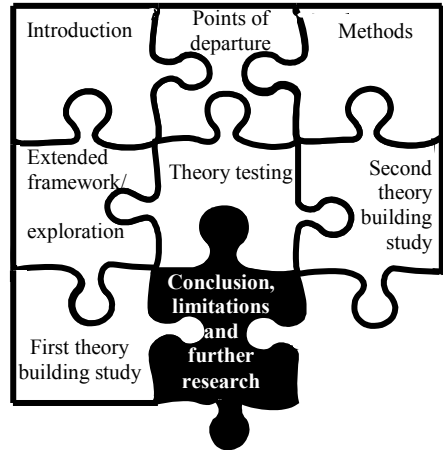
To establish non-trivialness of the relationship between fit and satisfaction, we need to find cases in which the independent variable is absent (complete misfit). An important question is whether cases of complete misfit can be found at all in practice. We believe that cases of complete misfit must exist: various authors have pointed out that organisational buyers do not consider the purchase of services an easy job [Jackson et al., 1995; Smeltzer and Ogden, 2002; Van der Valk et al., 2005]. From a practical point of view however, these cases will not be easily accessible, since companies will be reluctant to share information on such cases. Furthermore, case selection would then take place on complete misfit: this cannot be easily evaluated in advance, nor is it easy to specify what the five dimensions look like in cases of complete misfit.

Finally, the patterns can be further developed so that we obtain a better understanding of the dimensions that make the difference between satisfaction and delight. Fiss [2007] notes that it often remains unclear which of the underlying dimensions of a profile actually are characterised by misfit and thus cause the deviation in performance. Perhaps, some of the dimensions of interaction can be omitted (evaluating the non-trivialness of the individual dimensions); perhaps, some are more important than others. Our current dataset is suitable to conduct such sensitivity analyses, and we intend to report on these analyses in a future paper.

Chapter 8 Conclusions and discussion

ABSTRACT

This chapter is the final chapter of this dissertation. Here, the main conclusions of this research are summarised. Furthermore, scientific and managerial contributions are highlighted, and limitations and directions for future research are discussed.



8.1 BUYER-SELLER INTERACTION IN BUSINESS SERVICES

Purchasing and supply management is not just a matter of completing individual transactions, but certainly also of dealing with supplier relationships on an ongoing basis. This is especially true for business services, which are characterised by their interactive nature. This research has therefore dealt with the ongoing interactions between buyers and sellers of business services. As such, the focus has been on the everyday production and consumption of services as opposed to the initial purchasing and negotiation phases.

The main starting point was a classification of business services, which identifies four types of services depending on how these services are used by a specific buying company. Initial exploratory studies provided evidence that the four types of services are associated with differing key objectives, differing critical capabilities on both the buyer's and the supplier's side, and differing functional involvement.

We added to this classification in several steps, in which we explored, built theory and eventually tested theory on buyer-seller interaction in business services. This resulted in the following contributions:

1. The original rules for allocating services to one of the four classes were further developed. The resulting rules are more straightforward than the original ones, and can be found in Figure 8.1.

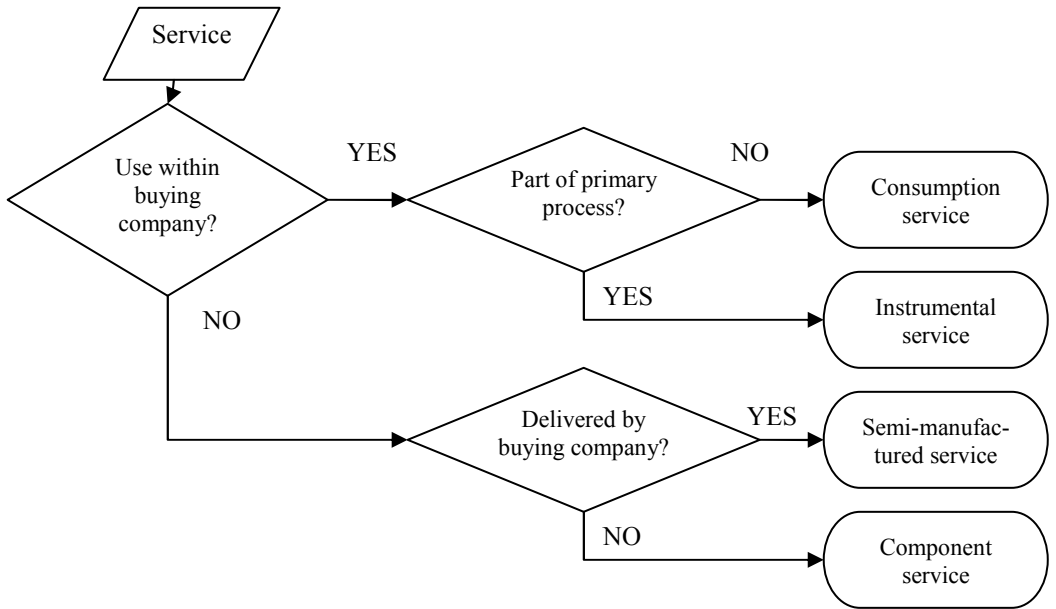


Figure 8.1 Decision scheme for identifying the type of service

2. The conceptualisation of interaction in terms of structural dimensions (key objectives, critical capabilities and type of representatives involved) was expanded to include processes of interaction, i.e. communication and adaptation. In two consecutive theory-building steps, descriptions of effective patterns of interaction were developed. These patterns do not include the process of adaptation, since no systematic variation could be identified for this dependent variable. It was therefore decided not to focus too much attention on this dependent variable in subsequent studies.
3. We then demonstrated that these effective patterns of interaction are non-trivial necessary conditions (but not sufficient) for highly successful ongoing service exchange (service exchanges with which the buying company is delighted) for component and consumption services. Thus, the ongoing service exchange for *component* services is only highly successful when:
 - The key objective of interaction is to make sure that the service fits seamlessly with existing offerings.
 - People knowledgeable about the end customers' requirements are involved with the ongoing interaction.

- The supplier's capabilities comprise high quality and reliable delivery as well as the ability to act on behalf of the buying company in a proper way (company culture and behaviour).
- The buyer's capabilities encompass accurately communicating the requirements of the service and service delivery.
- Buyer and seller communicate on performance and opportunities for improving the front end processes.

For *consumption* services, the ongoing service exchange is only highly successful when:

- The key objective of interaction is to ensure that the service supports various processes of the buying company.
- Various internal customers are involved in the ongoing interactions.
- The supplier's capabilities comprise achieving efficient routines.
- The buyer's capabilities encompass the ability to clearly communicate the requirements of various internal customers.
- Buyer and seller communicate on the service delivery process.

Concerning *instrumental* services, we obtained evidence that the following pattern is a necessary condition for successful ongoing service exchange:

- The key objective of interaction is to ensure that the services provided affect/become part of the primary processes in the desired way.
- Various content-experts (internal customers and people that co-produce the service) are involved in the ongoing interactions.
- The supplier's capabilities comprise obtaining the desired changes in the buying company's processes and having implementation skills.
- The buyer's capabilities encompass enabling the service provider and being able to communicate
- Buyer and seller communicate on both companies' strategies and partnership related issues are important, in addition to performance.

Yet, we were not able to determine whether the condition is non-trivial; further research is required here.

The effective pattern of interaction for *semi-manufactured* services looked as follows:

- The key objective of interaction (like with component services) is to ensure that the service provided fits seamlessly with the buying company's existing offerings. The emphasis here is on ensuring that the service fits with the buying company's service operations: the provider cannot disrupt the buying company's service delivery process.
- People knowledgeable about the end customers' requirements (also involved with component services) as well as co-producers of the service are involved in the ongoing interactions.
- The supplier's capabilities comprise high quality and reliable delivery as well as being able to act on behalf of the buying company in a proper way (company culture and behaviour). The critical capabilities are thus similar to those for component services.

- The buyer's capabilities encompass communicating the characteristics of the buying company's processes.
- Buyer and seller communicate on coordination of activities (capacity and demand) is an important topic.

The necessary condition hypothesis for this service type was refuted. Although we could explain the cases that did not fit with our hypothesis in terms of the conceptual framework (e.g. both services being characterised by low risk), some discrepancies in our data indeed suggest that careful interpretation of our findings is required. We come back to this when we discuss the limitations of this study and areas for further research.

When regarding the four patterns of effective interaction, one may argue that they are more or less similar. The fact that each pattern will require the involvement of different people may seem obvious. It should be emphasised however that this differentiation directly impacts the buyer-seller dialogue in terms of content and frequency; furthermore, it has immediate implications for the type of capabilities required from either side of the relationship. As such, the seemingly generic interaction patterns each have their unique completion.

4. Finally, the theory-building studies increased our understanding of how these effective interaction patterns lead to successful ongoing service exchange. The involvement of the right functional representatives results in an increased ability to develop a service specification with a sufficient level of detail. All relevant perspectives are taken into account when developing the specification, both in terms of functional backgrounds and organisational levels. The involvement of the right people contributes to including as many aspects as possible in the specification, including how the buying and supplying company will work together during the period in which the contract is operational. These observations underline the importance of the specification phase for successful services buying. Finally, the successful companies explicitly defined KPIs and targets, and were actively involved in the start up phase of the contract.

8.2 CONCLUSIONS AND DISCUSSION

The various activities undertaken in this research lead to four main conclusions, which will be discussed hereafter.

1) Different patterns of interaction are most effective for different types of services. The main factor driving this phenomenon is the way the buying firm uses the service with respect to its own offerings.

The research has systematically built on a usage-based classification of business services and has demonstrated that different types of services can be

associated with different patterns of buyer-seller interaction. By comparing cases of successful and unsuccessful ongoing service exchange, the most effective patterns of interaction for each of the four service types were identified.

The main driver for this variation is the way in which the buying company uses the service with respect to its own offerings. This driver was selected since it was prevalent in similar studies into the ongoing interaction between buyers and sellers of industrial goods [Håkansson, 1982]. Admittedly, this factor is not the only driver of variation in interaction; rather, it should be considered one of the main factors. Other factors that may possibly drive variation in interaction are size and level of experience of buyer/seller, the buyer-seller relationship in terms of duration and form, and the type of surrounding network.

2) Differentiated patterns of interaction can be more clearly identified for services characterised by high buyer-perceived risk.

Researchers in the field of Organizational Buying Behavior have emphasised that much of the variation in buying behaviour can be ascribed to the level of buyer-perceived risk involved with the purchase [Johnston and Lewin, 1996]. This research has demonstrated that patterns can be more easily identified for high-risk services. Furthermore, when comparing high-risk with low-risk services, variation occurred with regard to the level of management involvement (i.e. vertical involvement [Johnston and Bonoma, 1981]) and the number of people involved (extensivity [Johnston and Bonoma, 1981]). Since it was decided to limit the scope of the research to the dependent variables identified earlier, this variation was not further investigated. Overall, these results influence the domain to which the theory developed applies: the findings regarding effective patterns of interaction are likely to apply more strongly to high-risk services.

3) For high-risk services, firms cannot be successful in the ongoing service exchange without designing their interactions so that they closely resemble the effective patterns of interaction developed in this study. In other words: effective interaction is necessary for successful ongoing service exchange.

At the level of the service, the effective patterns of interaction were found to be necessary conditions for successful ongoing service exchange. At the level of the service type, the necessary condition was furthermore non-trivial for component and consumption services. Additional research is required to investigate whether the non-trivial necessary condition holds for instrumental services, and to increase the level of confidence in the findings for component services.

The hypothesis was however rejected for semi-manufactured services. Interestingly, the panel of expert judges did not recognise semi-manufactured

services among the set of services for which they evaluated fit: four out of the six semi-manufactured services were classified as component services. Two others were classified as an instrumental and a consumption service respectively, albeit with less agreement among the judges. The notion of semi-manufactured services is interesting and can be grasped from a conceptual point-of-view, and some services that could readily be classified as consumption services were found (i.e. the rental of aerial working platforms by FSP). However, during case selection, the semi-manufactured service was often the most difficult to find. One could therefore consider to combine the class of semi-manufactured services with for example the class of component services, and see whether this resolves some of the issues encountered when testing for necessary conditions. As a result, the classification would become more similar to the classification products and services by Jackson and Cooper [1988], who denoted output products (component and semi-manufactured services), capital products (instrumental services) and operation products (consumption services).

4) Having a pattern of interaction that is highly similar to the effective pattern of interaction for that service does not guarantee that the ongoing service exchange will indeed be successful. In other words: effective interaction is not sufficient for successful ongoing service exchange.

Given the number of cases in which the sufficient condition hypothesis had to be rejected, we have quite some confidence in the conclusion that having an effective interaction pattern *does not* inevitably lead to successful ongoing service exchange. This echoes the findings of the first step in theory building, where one and the same pattern of interaction for instrumental services was associated with success in one case and with failure in two other cases. Furthermore, the second step in theory-building resulted in the identification of various additional drivers for successful ongoing service exchange, among which were the development of a proper service specification and active contract management. It would be worth investigating whether having these drivers in place in combination with an effective pattern of interaction contributes to or even leads to successful ongoing service exchange.

The conclusions drawn here are obviously based on the overall results of this research. However, the results obtained require careful interpretation, and provide various suggestions for further research. We will come back to this in Section 8.6.

8.3 SCIENTIFIC CONTRIBUTIONS

This research has primarily aimed at synthesising between services marketing/ service management research on the one and purchasing and supply management research on the other hand. In addition to scientific contributions in these areas, several contributions were made to the fields of service operations management, interaction in business to business relationships, and to the area of research strategy. The contributions made to each of these fields will now be dealt with individually. Since some contributions may apply to multiple scientific fields, there may be some overlap between the various subsections.

8.3.1 Services marketing/ service management

Looking at the field of services marketing/ service management three main contributions can be identified. Firstly, the specific focus of this research is on business services, knowledge on which has been lagging behind in comparison with consumer services [Jackson et al., 1995]. This is echoed by some services marketing researchers, who call for more research into business services [Brown, 2002; Matthyssens and Vandenbempt, 1998; Parasuraman, 1998]. More specifically, this research has addressed the topic of services that move downstream to customers of the buying firm. Jackson and Cooper [1988] claim that not much attention has been paid to services that are being passed on to end customers. Not only has a conceptual contribution been made in terms of the classification of business services, also an empirical contribution has been made by means of the large amount of case research conducted.

Secondly, this study has brought forward a classification of business services, which –in contrast to many existing service classifications [Boyt and Harvey, 1997; Kasper et al., 2006; Mills and Margulies, 1980]- is not based on characteristics of service providers or the service itself. As Hunt [1999] states, classifications are the primary means for organising phenomena under study, and as such are an important starting point for building theory. Furthermore, this classification has been further developed and expanded into a typology of buyer-seller interaction. According to Doty and Glick [1994], typologies meet three primary criteria deemed important by theory-building experts:

- 1) It identifies multiple first-order constructs (the dimensions of interaction), that together make up a second-order construct (interaction pattern), and specifies a relationship between the second-order construct and a certain desired outcome.
- 2) It highlights the internal consistency among the dimensions of interaction and explains why these dimensions jointly result in the desired level of success in the ongoing service exchange.
- 3) The specified relationships are falsifiable.

As such, theory has been built and tested regarding effective interaction and success in the ongoing service exchange.

Thirdly, this study has addressed the daily production and consumption of services (service encounter) and the surrounding management activities. According to Grönroos [2004], the service encounter and the customer-service provider interactions it comprises should become the main area of interest for services marketing researchers.

8.3.2 Purchasing and supply management

Looking at the field of purchasing and supply management (PSM), four contributions are identified. Firstly, whereas existing research in PSM has hardly addressed aspects of ongoing service production and delivery, this study has the focus specifically to the activities and resources that support these processes that continuously take place during the contract period. The notion of ongoing interaction, which is so prevalent in business-to-business exchange relationships, has thereby received serious attention.

Secondly, as opposed to many of the existing studies that have focused on one specific type of service (i.e. marketing or consultancy), this research has empirically studied ongoing buyer-seller interaction for a wide variety of business services. Stenberg and Virolainen [2000] and Smeltzer and Ogden [2002] point out that the variety in business services as seen from the buyer's perspective and how buying companies deal with this variety is an important research topic, since the characteristics that are common for various services help purchasing managers to understand the service to be purchased in relation to the purchase process and to the buying organisation and its relationships with service providers.

Thirdly, this research has brought forward a classification of business services, which helps to study generic similarities and differences across different types of business services rather than the problems and opportunities for a certain specific business service. The classification identifies services based on how they are being used by the buying firm and thus adopts a buyer's perspective. The usage-based classification furthermore resonates well with a recent shift towards a micro perspective on strategy and strategising: in light of this shift, Johnson et al. [2003] emphasise the processes and practices that make up the daily activities of organisations and that relate to strategic outcomes. Hence, daily activities and ongoing interaction are the 'stage' for strategic behaviour. This classification furthermore also establishes a connection between the purchasing process and the overall business processes of the buying firm by demonstrating how purchasing's activities may (fail to) contribute to the buying company's overall performance. According to Carr and Pearson [1999], Shin et al. [2002] and Van Weele [2005], establishing such a link is one of the most significant research areas. For example, semi-manufactured services move downstream in the supply chain to customers and

as such need to be coordinated with the buying company's (service) production processes. Instrumental services on the other hand directly impact how the buying company carries out its business processes. Purchasing needs to find suppliers that contribute positively to the buying company's business processes.

Finally, this research has contributed to knowledge of buying services in general and service supply chains. Regarding the first, insights were obtained regarding the importance of and possibilities for specifying services, evaluating suppliers and measuring the performance of suppliers. Regarding the second, specifically the studies into component and semi-manufactured services demonstrate the importance of service supply chains. In their field study on how companies establish service supply chains, Åhlstrom and Nordin [2006] found that buying companies feel a need to control the encounter if that is where the supplier delivers value to the end customer. Chandon et al. [1997] and Lewis and Entwistle [1990] underline the importance of carefully governing service encounters, since they may strongly influence customer satisfaction.

8.3.3 Service operations management

This research has made three contributions to the field of (service) operations management. Firstly, this research has addressed operations management issues in service industries rather than in the manufacturing sector. According to Nie and Kellogg [1999], most OM research is (still) manufacturing-oriented. Carter and Ellram [2003] claim that the academic research on business services is limited. Smeltzer and Ogden [2002] claim that operations management (OM) research has analysed the differences between manufacturing and service operations, but has not analysed the purchasing process of business services per se. Roth and Menor [2003] furthermore indicate that existing service operations management (SOM) research is highly fragmented and revolves mostly around specific industry sectors, research methods or specific decision-making issues.

Secondly, this research addresses the ongoing interactions between buyers and sellers of business services, both within and across service encounters. Service encounters and the customer-provider interactions therein have been noted to be important by various SOM scholars. For example, Johnston [1999, p. 117] raises the question whether we know how to design and control the series of encounters that comprise the service process. Roth and Menor [2003] stress the importance of the design of the service encounter, in which the nature of interactions between the service providers and customers must be specified. Machuca et al. [2007] state that the design of the service delivery system is a topic that can be found on most SOM research agenda's; this topic even ranks second on the research agenda of Nie and Kellogg [1999]. By looking at these service encounters, this research addresses tactical/

operational issues (i.e. implementation issues) in service operations management: Machuca [2007] notes that these issues are in need of an increasing amount of research.

Customer-providers interactions have been investigated in SOM research; however, most of this research has focused on the front-office aspects of services, i.e. those which involve the *consumer/* server interaction part of the process [McLaughlin et al., 1991]. In *business-to-business* settings, such front-office issues have so far received little attention. Smeltzer and Ogden [2002] denote the fact that most service discussions take the perspective of the service consumer rather than of the service buyer as a main limitation in SOM research.

Finally, this research addresses the topic of service supply chains, specifically through the classification of business services which contains two service types that move downstream to the customers of the buying company. Storey et al. [2006] that as a result of the growing importance of business services, the need for and the potential of supply chain management in services increases.

8.3.4 Interaction in business to business relationships

Regarding extant research in the area of business-to-business relationships, two contributions have been made. Firstly, this research has contributed to an increased understanding of buyer-seller relationships in business services. In business services, buyer and seller usually become much more integrated than in a traditional product-supply relationship. As such, the performance of purchasing and the contracted service providers directly contribute to the buying company's business performance. This research specifically focused on the daily dealings that take place between buyer and seller in order to ensure that the service provided enables or relieves the buying company's processes in the desired way [Normann and Ramirez, 1993], or that the service fits properly with the buying firm's offering. These daily dealings have been investigated in detail by scholars of the IMP Group, but only in the context of industrial goods. This study has contributed to knowledge on buyer-seller interaction by applying the Interaction Approach in the context of business-to-business services.

Secondly, an important contribution was made in terms of investigating the nature of the relationship between interaction and success in the ongoing service exchange. A deterministic relationship was found, whereby the effective constellations of first order constructs (effective patterns of interaction) are necessary conditions for successful ongoing service exchange. Thus, the ongoing service exchange will not be successful unless a pattern of interaction is developed which closely resembles the effective pattern of interaction for that specific service type. Furthermore, some general drivers for successful ongoing service exchange were identified, like the development of a

proper specification and designing appropriate contract management activities. Spin-off projects have looked specifically at the topics of specifying services [Van der Valk and Rozemeijer, forthcoming], the suppliers perspective on ongoing interaction (Appendix F), customer requirements and their impact on supplier selection [Van Mossel and Van der Valk, 2006], and aligning buyer and seller incentives for enhanced buying company performance [Tate and Van der Valk, 2006].

8.3.5 Research strategy

The last area to which this research has made contributions is the area of research strategy, where a substantial *methodological* contribution has been made by adopting a relative innovative view on case research.

Traditionally, findings obtained from case research were at best regarded as exploratory/ descriptive [Johnston et al., 1999]. Eisenhardt [1989] advanced the general academic perspective on cases by providing guidelines on how to build robust theory from case research, thereby calling for more appreciation for case-based research. At the same time however, as was pointed out by Dubois and Araujo [forthcoming], Eisenhardt's [1989] approach highlights many of the problems associated with conducting qualitative research while relying on validation criteria that are more appropriate for quantitative research. An obvious illustration is the fact that she discusses a range for the number of cases, thereby trading-off limited generalisability with the burden of having to process vast amounts of data. The view that case research is always characterised by small sample sizes is shared by many well-established academics: in their view, therefore, cases are suitable for exploration and perhaps for generating theory, full stop. For testing theory, sample sizes will always be too small, and case results are too context-specific to be externally valid.

In contrast, Easton [2007, p. 52/53] describes circumstances in which one case may be enough to start creating theory. Likewise, this research adopts the view that cases can be used for exploration and for building theory, but certainly also for testing theory [Dul and Hak, 2007]. This research project has incorporated all three activities: Gladwin [1989] and Howard and Morgenroth [1968] argue that the quality of case research is increased dramatically by designing the study to include both theory building and theory testing. By performing various kinds of analyses, ranging from pure exploration of buyer-seller interaction in the broadest sense to more focused data collection and analysis of the variables in the conceptual framework, theory on effective buyer-seller interaction for each of the four service types was gradually developed in a structured manner. Subsequently, we drew on political science literature to obtain insights in how to test the theory developed using cases. As such, this study is probably one of few in management to have applied case research in such a rigorous manner. Furthermore, as researchers, we take a

stand in the recently emerging debate on case research: rather than regarding multiple cases as a small-scaled semi-survey on which statistical analyses cannot be performed, we view each case as a test of the hypotheses under study. Each case is thus a complete study in itself. We strongly support the notion that the potential weaknesses in case research are not inherent to case research per se; however, these weaknesses do need to be properly addressed by the researcher undertaking the study. As suggested by Johnston et al. [1999], case studies are a useful strategy to investigate industrial marketing phenomena, as long as a systematic and theory-based approach is taken.

8.4 MANAGERIAL CONTRIBUTIONS

For business professionals, whether managers or consultants, the identification of different patterns of effective interaction for the four service types suggests that managers should adopt a contingent rather than a best practice approach when buying business services [Storey et al., 2006]. In other words: a best practice for buying cleaning services may be very appropriate for cleaning offices of an airline (consumption service), but may turn out totally inappropriate for cleaning the airplanes of that same airline (component service). An example of this is provided in Appendix F, where the purchase of three different types of cleaning services by the Dutch RailWays (DRW) is discussed. The cleaning of office buildings is part of DRW's support processes, but the cleaning of trains and train stations are being passed on to DRW's customers (train passengers). This is found to have certain implications regarding the sourcing of these services, specifically with regard to specification/ selection and performance measurement. Consequently, DRW needs to set up different patterns of interaction for its different types of cleaning services. As such, the classification can help buying firms to go beyond the mere content-based segmentations which have been extensively adopted in practice. This is not to say that knowledge about the technical content is irrelevant; only that it may not be sufficient to design appropriate buyer-seller interfaces and interaction patterns. Finally, the typology developed here can be used to consider the possibilities that arise from changing the perception of a particular service within a given organisation. If hospitals for example start to deal with their catering and cleaning services, which are traditionally perceived as consumption services, as component services, this may open up new ways of selecting and interacting with the suppliers of these services.

A more stringent implication for business professionals is the fact that if buying companies do not design an interaction which is highly similar to the effective pattern of interaction, the ongoing service exchange will not be successful. Buying companies should therefore focus sufficient attention on how the service is used within their company and design the interaction with

the service provider accordingly. For this purpose, the typology of effective buyer-seller interaction can be used as a guideline/ diagnostic tool for designing new and improving existing interactions with providers of business services. By analysing their current interactions with providers of business services in light of the proposed effective interaction patterns, opportunities for improving these interactions can be identified. Providers can equally use these findings to address the right issues and people in its marketing, sales and exchange processes with their customers. Furthermore, the findings of this research put forward some drivers for successful ongoing service exchange outside buyer-seller interaction. For example, companies are unlikely to be successful if they have not properly specified the service. The importance of specifications has repeatedly emerged throughout this research project (both in the case studies and in spin-off research projects like the survey conducted among members of the Dutch association for purchasing management) and is emphasised in literature [Åhlstrom and Nordin, 2006; Axelsson and Wynstra, 2002; Fitzsimmons et al., 1998]. Van der Valk and Rozemeijer [forthcoming] have specifically addressed the topic of developing appropriate service specifications. Furthermore, defining and designing contract management activities are an important prerequisite to avoid failure. As such, the results of this study can be used to create the conditions required for successful ongoing service exchange.

Also, this research has identified a number of factors that seem to facilitate/ contribute to success in the ongoing service exchange. One of these factors is the development of a proper specification. Although the term 'proper' is difficult to define, it means that all relevant stakeholders from various organisational levels are involved in the specification process. This benefits the completeness and accuracy of specifications. Furthermore, it helps to take into account both the start-up and the mature phase of the contract, thereby specifying how buyer and supplier will deal with each other in each of these stages (within and across service exchange episodes). Active involvement in the start-up phase and active contract management throughout the contract period were both found to be important pillars for success. Finally, innovative Key Performance Indicators (the last facilitating factor) can be used to better align the provider's with the buyer's objectives. It should be noted though that the extent to which these facilitating factors can be leveraged strongly depends on the involvement of the appropriate stakeholders. Further research could therefore be directed at a more detailed investigation of how these factors actually operate and create a relationship between interaction and success. The case study is again a particularly suitable approach for illustrating such mechanisms: case research allows the researcher the opportunity to tease out and disentangle a complex set of factors and relationships [Easton, 2007]. Especially when theory is well-articulated, specific elements of that theory may be studied in detail in a single case.

Finally, the insights obtained from the rich case descriptions may be used by practitioners for reflecting on one's own business processes and making improvements. For one, the empirical studies contain a variety of examples of buying companies using output and sometimes even outcome specifications. Axelsson and Wynstra [2002] put forward that service specifications can be input-, throughput-, output- or outcome-based. For example, when buying management consultancy, the buying company could specify the skill level of the consultant to be hired (input), what activities the consultant should perform (throughput), the results that the consultant should achieve in terms (improved innovation management; output) or the financial results associated with improved innovation management (higher market share; outcome).

As a result of using output and outcome specifications, the performance of suppliers is measured in rather innovative ways (in the case of DRW, this could making the supplier responsible for a certain level of customer satisfaction with regard to cleaning). Such approaches can also be adopted when the buying company is bound by law to use the European Tendering procedure. This procedure is viewed by many buying companies as being overly complex and even threatening: many buyers are afraid to get stuck with a supplier they do not want. However, European Tendering leaves a lot of room for buying companies to influence the supplier selection process in a way that non-preferred parties are unlikely to be awarded with the contract. Furthermore, although the procedure forces companies to do a lot of work upfront, buying companies involved in European Tendering benefit from this effort during the contract period in the form of less problems and unforeseen circumstances. Despite the fact that one of the case companies, EIA, has to perform all its sourcing activities using a European Tendering procedure, they are among the most successful in our set of cases.

8.5 LIMITATIONS

Despite the contributions the research has made, a few critical comments should be raised. The comments link to various aspects of this research, and will be elaborated hereafter.

8.5.1 Conceptualisation of interaction

First of all, a limitation arises as a result from having collected data only on the side of the buying company. Although the interviewees were asked about for example the supplier representatives involved, the suppliers themselves have not been involved in data collection. Consequently, the presented patterns of interaction represent the buying companies' views of buyer-seller interaction. When designing the study, a trade-off had to be made between basing the study on one-sided data collection, thereby enabling the study of more services, and involving suppliers, resulting in a limited number of cases to be studied. Obviously, performing data collection at suppliers for

the current set of cases would have dramatically increased the size of the study, both in terms of data collection and subsequent analyses. Involving suppliers in the study was expected to complicate the identification of patterns, i.e. systematic variation, since a buying company's dealings with a supplier are also highly dependent on various other factors, like the length of the existing relationship, the power balance in the relationship et cetera. By focusing specifically on how to deal with a specific service, the focus was shifted to patterns resulting from the type of service rather than the type of supplier relationship. It was therefore preferred to have more cases rather than a limited number of cases based on two-sided data collection. As such, explicit efforts were made to balance the level of detail versus the level of complexity. However, it remains to be seen how the suppliers view the interactions that now have been mapped. Do they perceive these interactions differently, and if so, in what way? Do they perceive opportunities for further improving the interaction? Including the supplier in future data collection efforts substantiates the findings regarding patterns of interaction and may furthermore result in additional insights regarding the buyer's behaviour. Involving suppliers in such a study may however not be easy, since most of the buying companies that participated in our study were reluctant to have the researchers approach their suppliers.

8.5.2 Case selection

Another important limitation occurs with regard to case selection. Ideally, the sort of cases selected would be dependent on the hypotheses that are being researched [Johnston et al., 1999]. The number of cases selected depends on the status of theory in that area: Easton [2007] argues that when little theory is available, one case can be enough to start the theory-building process. In contrast, when theory is well-articulated, a comparative case study would be more suitable. In this study, the sort of cases to be selected has been based on theoretical considerations: all four service types would be studied at each company participating in the study. Also the type of participating companies, and consequently, the number of companies participating have been based on theoretical considerations. However, case selection has been parallel rather than sequential. In other words: rather than designing a study for a specific purpose (with cases tailored both in type and number for the objective of the study), analysing the findings, and then designing another specifically for a new purpose, this research has drawn on a single design with the main objective of mapping a large number of interaction patterns for all four service types. Fortunately, this research design has allowed for a variety of analyses to be performed, as a result of which the analyses presented in the individual chapters seem well-considered, mindful steps. Given the various analyses that the data-set potentially allowed for, the fact that case selection was parallel is not considered to be too much of a problem.

Another problem with regard to case selection arose in the second step of building theory on effective buyer-seller interaction. When selecting the successful cases to be compared with unsuccessful cases, extreme cases, or polar types, were selected from the total data-set. It is uncertain however whether these cases are really the cases of most (un)successful ongoing service exchange. For example, since the dataset did not contain really unsuccessful for all four service categories, we had to resort to selecting the ‘worst’ of the mediocre cases. Consequently, there are interaction patterns out there that result in even less success in the ongoing service exchange. On the other end of the continuum, it is likely that there are cases of more successful ongoing service exchange out there. Success was thus specified empirically by taking the most successful cases in the dataset as the standard, and as such, the value of the dependent variable (success) is restricted to the maximum level of this variable as exhibited in the sample [Doty and Glick, 1994, p. 238-239]⁴². Consequently, the effective patterns of interaction developed in this research may not represent the most effective patterns for each type of service.

Finally, note that our data-set was limited to Dutch companies only. Although we have no a-priori reasons to assume that our findings will not hold in other countries, replications of this study are required to validate this.

8.5.3 Data collection

Concerning data collection, a limitation arises because of the fact that the cases studied are not distributed equally across the four classes of the classification of business services. Although the initial objective was to have a component, a semi-manufactured, an instrumental and a consumption service at each of the ten participating buying companies, it turned out to be difficult to identify component and semi-manufactured services at manufacturing companies. Also, some cases had to be reclassified during the study: starting with nine component, nine semi-manufactured, eleven instrumental and eleven consumption services⁴³, we ended up with four component, seven semi-manufactured, twelve instrumental and seventeen consumption services. The data set was sufficient for developing the typological types of interaction; however, the necessary condition hypotheses test for component and semi-manufactured services were based on a limited number of observations (for the component services, the number of cases was only two). The small number of cases is not an issue in terms of for example the generalisability of the

⁴² Another approach would have been to theoretically specify success and to theorise on what interaction patterns would result in these levels of success. Given the complexity of the theory to be developed, it was deemed infeasible to theoretically specify effective interaction.

⁴³ The set of cases was unequally distributed from the beginning of the study, since some companies requested us to study more than four services.

findings: for the category of component services, the effective pattern of interaction was found to be a non-trivial necessary condition. Analytical generalisation does not suggest that these findings cannot be extrapolated beyond these two cases. Yet, replication of the test for more cases of component services would substantially enhance our confidence in these results.

Another limitation arises with regard to the way in which success and risk were measured. As was mentioned earlier, the objective of the questionnaires was to have a relatively simple evaluation of success which could be compared with the interview data. These current 'simple' evaluations of success converge between 3.0 and 4.0, as a result of which there is little variation in the dependent variable. In order to be able to more clearly differentiate between different levels of success, perhaps a more sophisticated measurement instrument like SERVQUAL [Parasuraman et al., 1985], SERVPERF [Cronin Jr. and Taylor, 1992], or the Business Balanced Scorecard [Kaplan and Norton, 1996] is more suitable. Another option would be to include weights for the different items through which success is measured by asking informants how important they deem each of these items. This approach is frequently used in basic customer satisfaction research.

8.5.4 Data analysis

With regard to analysis, a critical comment may be raised with regard to the use of the judging panel. Since for this judging exercise, the researchers developed both descriptions of the effective types and the observations, bias in these descriptions is almost inevitable. In future research efforts, it may be better to have other people than the researchers develop descriptions of the observed patterns, and yet others to make the judgments. However, in this study, such an approach would have required other people to go through large amounts of qualitative data to develop the descriptions. It was therefore deemed not preferable to let others describe the observed patterns.

Furthermore, the judges indicated to perceive the evaluation exercises as complex. Because the judges lacked detailed background information on the cases, it was for example sometimes difficult to determine whether a service is aimed at a primary or a support process. Providing the judges with limited information when asking them to classify the services⁴⁴ was deemed necessary as to prevent them from classifying services based on the service description rather than on the patterns observed. However, it should be noted that these difficulties may be the cause of discrepancies between the researchers' classification of business services and the judges' (in other words: the judges

⁴⁴ As a follow up exercise to the evaluation of the fit between the observed and the effective pattern of interaction, the judges were asked to classify the services so we could compare their classification to our own.

classifying an instrumental service as a consumption service and vice versa may not be so problematic after all).

8.5.5 Usage-based classification of business services

Finally, a critical comment to the usage-based classification of business services may be that services do not automatically end up in a specific class. Although decision rules (Figure 8.1) for allocating services to one of the four classes have been provided, the type of service may in some cases be indeterminate. At the same time, it provides a certain degree of freedom with regard to how to view different services, which is considered an asset rather than a liability. Another comment may be that although the usage-dimension has been found to have a significant impact on interactions, this driver alone does not fully explain what interaction patterns occur. Further research could be aimed at identifying other drivers of (partial) variation in interaction.

8.6 FUTURE RESEARCH

In addition to the opportunities for future research mentioned in the limitations section, several other directions for future research can be identified. Some opportunities for further research are directly in line with the current study; others expand into new areas of research.

8.6.1 Further research into effective buyer-seller interaction

Building on the results of this research, future research could be aimed at obtaining a more detailed understanding of the mechanisms underlying whether and how a more effective pattern of interaction results in success. Within the group of successful cases, there was quite some variation in the scores for similarity between the observed and effective pattern of interaction. For example: for some cases, high fit did not lead to high success. There were also cases in which a relatively low degree of similarity still resulted in a relatively high degree of success. These results are intriguing, and it seems worthwhile to investigate these findings in more detail. Furthermore, a non-trivial necessary condition could only be established in the upper-right quadrant of Figure 7.2, i.e. the quadrant ranging from buying company satisfaction to buying company delight on the vertical axis, and from fit to complete fit on the horizontal axis. The original aim was to establish a non-trivial necessary condition for successful versus unsuccessful service exchange: however, due to the lack of cases with misfit or complete misfit and buying company dissatisfaction or buying company disillusion, it was not possible to find complete support for this hypothesis. Further research should therefore be aimed at finding unsuccessful cases characterised by (complete) misfit. If such cases can be found, the effective pattern of interaction can be

considered a non-trivial necessary condition for successful ongoing service exchange.

Another direction for further research is to uncover which of the underlying dimensions of the patterns of interaction drive(s) success most strongly. It could be that some of these dimensions are trivial, whereas others have a strong effect. Such insights would help companies to focus their attention on those dimensions that contribute mostly to achieving success when trying to design effective buyer-seller interfaces and interaction processes. A first rough analysis of the fit evaluations on the individual dimensions does not suggest that a certain dimension scores substantially lower than others do. Furthermore, sensitivity analyses whereby in turn one of the dimensions of interaction was removed from the pattern did not substantially alter the results: the same two semi-manufactured cases in which the necessary condition hypothesis was rejected prevail as disconfirmations of the hypothesis. Only the elimination of supplier capabilities leaves no cases in which the necessary condition hypothesis is rejected.

Furthermore, one could critically review the classification of business services in general, and consider whether perhaps the class of semi-manufactured services should be combined with for example the class of component services. The classification would then consist of a group of downstream services, and a group of services that remain within the buying company. The latter in turn consists of two subgroups. This revised classification of business services would then become highly similar to the classification of Jackson and Cooper [1988]. This would also eliminate the awkward definition of semi-manufactured services, which become, after *being transformed*, part of the buying company's offering to customers [Wynstra et al., 2006]. Such a definition is more applicable to industrial products, where the classification of business services has its origin, than to services⁴⁵. Discussions among the research team and with other researchers have resulted in the notion of services that are integrated in the buying company's offering (semi-manufactures) and services that are offered on behalf of the buying company (components). Following this line of reasoning however poses the question of whether the class of semi-manufactured services should be combined with the class of instrumental services, since it will not always be easy to draw the line between services that do and do not become part of the offering to customers.

Think for example of IT services for the telecom company, which are critical in providing service to customers: to what extent are these services integrated in the buying company's offering? However, in the case of a specialised software workshop sourced externally by an HR training company to deliver to its customer, a 'transformation' is more obvious: after all, the

⁴⁵ An alteration of the definition of semi-manufactured services, evidence of which can be found throughout the different chapters may be another way to resolve these issues.

training company will coordinate the basic training level of the individuals taking the training as well as their specific company background with the external provider, so that this provider can customise the service for the final customer. In the eyes of the final customer however, it is the training company that delivers this software workshop (in other words: the final customer will not know or perhaps care that this workshop is performed by an external supplier). In this case, the difference seems to be made by which company is seen as the service provider: the buying company, or the external provider. In the first case, we would talk about semi-manufactured services, whereas in the latter, we would talk about component services. Altering definition of semi-manufactured services in line with this reasoning may then be another way to resolve this issue.

Finally, replications of this study could prove valuable in further substantiating these findings. The results obtained here come from one study carried out by one research team. Replicating this study in other companies, other contexts and perhaps also by other researchers would make the results of this study stronger.

8.6.2 Expanding the research into new areas

Broadening the area in which the results of this study may be of use, two other areas for future research can be identified: buyer-supplier interactions in new (business) service development, and supply chain management in business services.

The development of new services, compared to new product development, has remained a much less investigated research field despite the fact that the specific characteristics of services warrant specific research in this area [De Brentani, 1989; Fitzsimmons and Fitzsimmons, 2000; Johne and Storey, 1998; Stevens and Dimitriadis, 2003]. Also the phasing and activities that constitute the service development process [Johne and Storey, 1998; Menor et al., 2002] and the actors involved in this process have so far received insufficient attention [Johne and Storey, 1998]. Research on new service development has shown that service suppliers do not use sophisticated and formal development procedures [Martin Jr and Horne, 1993; Sheuing and Johnson, 1989]. At the same time, service development projects in which certain stages of the development process are not or only hardly carried out tend to result in failure [Atuahene-Gima, 1996; Cooper et al., 1994; De Brentani, 1995; De Brentani and Ragot, 1996; De Brentani, 2001].

Furthermore, there has been very little research in the area of buyer-supplier interaction in the development of new and/ or improved business services. It is clear that in the delivery process, the service customer takes part as a co-producer, and as such, the service arises in direct interaction with the customer. But also when developing the right generic *prerequisites* for the service (service concept, service process and service system [Edvardsson and

Olsson, 1996]), the customer can make valuable contributions. In particular, concept development can benefit to a large extent from customer input (like 'lead user' involvement in product development, as described by Von Hippel [1989]). The typology developed in this research could be used to obtain a better understanding of which actors (i.e. end customers versus internal users) to involve in the new service development process. Furthermore, it can serve as a framework for designing the service process in relation to the service concept, and subsequently putting an appropriate system in place.

Another area in which the classification may be useful is the area of Supply Chain Management (SCM). Recently, some attempts have been made to extrapolate the concepts of supply chains and supply chain management used to study the production and delivery of industrial goods, to the area of services [Sampson, 2000; Zsidisin et al., 2000]. In our view, SCM for business services would especially be relevant in the case of component and semi-manufactured services – as these services indeed enter a chain of consecutive buyer-supplier relations. In conjunction with research across various types of services as regards their technical content, the typology could be used to identify common problems and solutions for services belonging to these two classes of the classification rather than applying concepts of goods supply chains to the area of services. For example: Aalders [2007] investigated the issue of quality control in service delivery specifically for component services. Since component services are purchased by a buying company, but delivered directly to the end customer by the supplying company, the buying company loses control over service delivery. Hence, control needs to be exercised in other stages of the purchase and ongoing interaction process (for example in drawing up the Service Level Agreement that the service provider has with the end customer) to make sure that the service is delivered in a satisfactory manner.

8.7 FINAL REMARKS

Companies are increasingly trying to successfully organise their services purchasing. Whereas most of them focus their attention on developing proper specifications and selecting the right supplier, the benefits that can be obtained during the operational processes of everyday production and consumption of services have mostly been neglected. This raises the interesting question of why this is the case.

One reason could be that buying companies see no problems in dealing with and optimising the ongoing interaction during the contract period. However, given the problems that arise in some of the cases and the fact that performance is just on or a little above expected, buying companies are expected to increasingly acknowledge the importance of thinking about and designing these operational processes in advance of the purchase. A more

likely explanation is that buying companies underestimate the importance of interaction. Like with goods, they expect that if they tell the supplier what they want, they will get exactly that. Unfortunately, unlike with goods that can be produced in isolation from the buyer and delivered according to the specification set, services have an interactive character. This emphasises two important issues: 1) the buying company is involved in the interaction and thus needs to act and react; and 2) the success of the service is for a large part (also) dependent on the performance of the buying company.

Services are becoming ever-more important, and it is thus not a question of whether to buy services, but how to buy them. This does not only involve performing well in the initial stages of the purchasing process, but certainly also the professionalisation of the phase that follows the purchase decision. Understanding and being able to manage the interaction with a supplier is just as important as being able to specify and contract the desired service.

This study can help buyers and suppliers of business services to set up the most effective interfaces and interactive processes to facilitate the ongoing service exchange and make it successful. As a first step towards understanding the complexity associated with buying and managing services, it also highlights the link between the ongoing stages and the initial purchasing process. The people involved in the ongoing interactions should also be involved in the initial stages of the purchase process. This benefits the specification upfront, ensures that the appropriate capabilities are sought with suppliers, and results in the identification of appropriate performance indicators for measuring the supplier's performance. There is however still a lot of room for further research to increase the understanding of both academics and professionals of the complexities associated with service buyer-service provider relationships and how these can be dealt with.

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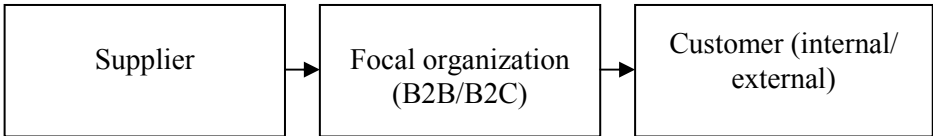
1. CON initiates, develops, builds and maintains projects related living, working, transport and recreation. Employing about 27,000 people, CON ranks among the largest construction firms in Europe.
2. NGT buys, transports and sells natural gas and associated services on the national and the international market. NGT obtains gas from Norway, Russia and Germany and English parts of the North Sea, and exporting gas to Germany, Belgium, France, Italy, Switzerland and England.
3. FSP is one of the world's largest Facility Service groups, which provides mainly cleaning, maintenance and a wide range of tailor-made service packages for targeted customer segments like healthcare and food hygiene, as well as for key accounts in businesses, industry and the public sector.
4. TEL offers telecommunications services to both consumers and business customers. With 28,000 employees, TEL is market leader in the major segments of the Dutch telecommunications market. Among their core activities are telephony and data services through a fixed network in the Netherlands, mobile telecommunications services in Germany, the Netherlands and Belgium, and data services in Western Europe.
5. FEE finds and produces oil and natural gas in the Netherlands and the Dutch part of the continental plate. FEE is the largest gas producer in the Netherlands, with annual production of around 50 billion m³ (75% of Dutch demand). FEE also produces about 4% of the Netherlands' total oil requirement (50 million m³).
6. BAN offers a wide variety of financial services to both business customers and consumers. With 57,000 employees and 1,378 Dutch offices, BAN is the largest financial services provider in the Netherlands.
7. RDO sells fuel and lubricating oil, but also various convenience products (e.g. sandwiches, sodas) through 650 selling points (service stations) along the roads in the Netherlands.
8. FMG is one of the world's leading suppliers of fast-moving consumer goods, supplying a wide variety of products (foods, home care products, personal care products) to the consumer market through various retail channels (supermarkets, gas stations, et cetera).
9. EIA is the Dutch Employed Persons Insurance Administration Agency, which is responsible for the administration and implementation of insured benefits for around 700,000 employees in the retail and handicrafts industries. Employing 2,000 people throughout the Netherlands, EIA levies the contributions under various insurance schemes (i.e. the sickness insurance scheme or the unemployment insurance scheme), assesses benefit applications and sees to the payment of benefits.
10. OCS provides independent tank terminal capacity over the whole world to the chemical and oil industries for the storage of liquid chemical products and oil products. OCS also provides a wide range of value-added logistic services, such as tanker shipping, barging and warehousing, independently or in cooperation with strategic partners. OCS operates a network of 72 tank terminals with a combined storage capacity of over 20.0 million m³ in 29 countries with about 4,000 employees.

Appendix B List of interview questions

Questions on the service being supplied

1) What is the service that is actually being supplied (in terms of activities carried out for your company, personnel and equipment supplied, et cetera)? What is the frequency of service delivery and how important is timely delivery?

2) What does the (simplified) supply chain look like?



3) Could you please provide me with some background information on the supplier company?

You could for example think of:

- i) Part of the supplier company you're dealing with
- ii) Product/ service range of the unit you're dealing with
- iii) Types of customers and market segments the supplier services

4) Which people/ functions are involved with this service from

- i) the supplier's part?
- ii) your company's part?
- iii) your customer's part?

What are their respective roles/ responsibilities? Please distinguish between pre-purchase and post-purchase.

5) What is the position of the service in relation to your organisation's offering to its customers? Is it:

- i) Consumed within your own organisation?
- ii) Transferred (either directly or indirectly) to the customer?
- iii) What are the consequences to the customer of delivery and/ or performance failure?
- iv) Could you give an estimate to what extent this service contributes to your company's competitive position in terms of market share, turnover and/ or profit (hardly, quite a lot, very much)?

6) How important is the service being exchanged?

- i) In terms of financial importance: what share of purchasing expenditures is spent on this service?
- ii) If applicable, in terms of importance for customer satisfaction (your company's customers)

7) How complex is the service being exchanged?

- i) How many disciplines/ departments are affected by this service?

- ii) What is the contribution of the final customer in the service delivery process?
 - iii) To what extent does this service rely on expert knowledge of employees on both the buyer's and the supplier's side?
 - iv) To what extent does this service depend on support from information systems?
 - v) To what extent does this service have to be integrated with/ adapted to existing systems and/ or existing service offerings?
- 8) How novel is the service being exchanged?
- i) In comparison to existing service offerings/ the offering preceding this offering, to what extent is this service new to the supplier organisation/ employees (not at all, a little, very different)?
 - ii) In comparison to existing service offerings/ the offering preceding this offering, to what extent is this service new to the customer organisation/ employees (not at all, a little, very different)?

Questions on the service purchasing process

- 9) Which departments are primarily involved in the purchasing process?
- i) Which departments are represented in the purchasing team?
 - ii) Which functions represent these departments? Which function carries main responsibility and/ or has the "final word" in decision-making?
- 10) How does supplier selection take place?
- i) Is there a list of preferred suppliers?
 - ii) How many alternatives are there and what is there respective attractiveness? What are the costs and difficulties associated with switching to another source? What is the market structure/ competitive situation?
 - iii) What are important selection criteria?
 - iv) To what extent is the service contract detailed before selection actually takes place?
- 11) To what extent can the characteristics of the service be determined in advance of the purchase/ development project?
- i) To what extent can the service concept be designed in advance of the purchase/ development project?
 - ii) To what extent can service delivery be designed in advance of the purchase/ development project?
 - iii) To what extent can performance characteristics be determined in advance of the purchase/ development project?

Questions on “life after the purchase”

- 12) What does the customer-supplier interface look like after the purchase has been made (communication and coordination mechanisms, boundary spanning roles, and DMU/PSU structures)?
 - i) Which departments/ functions are primarily involved in the interactions?
 - ii) Which departments/ functions are involved in managing the ongoing supply after the purchase of a service? How does this take place?
 - iii) Which departments/ functions are involved in managing the supplier? How does this take place?
 - iv) Who are the counterparts of these functions on the supplier’s side?
- 13) What are the most important issues discussed in the interaction?
 - i) What are the respondent’s contacts with counterpart in terms of frequency, form, topic, who was contacted?
 - ii) What are the respondent’s contacts inside the buying company in terms of frequency, form, topic, who was contacted?
 - iii) What are the contacts of others inside the buying company with counterpart in terms of frequency, form, topic, who was contacted?
 - iv) What type of information is requested from and provided by the counterpart?
- 14) Is this relationship characterised by frequent or little exchange? In between exchange episodes, is the amount of interaction considered to be low, medium, high?

Questions on the long-term relationship

- 15) Could you please provide me with some background information on the nature of the relationship?
 - i) How long has the relationship been in existence?
 - ii) How was this relationship established (in terms of reason for and approach to)?
 - iii) What is the criticality/ overall importance of the relationship?
- 16) Have any relation specific investments been made by either or both parties to accommodate the service exchange?
 - i) Have any special financial procedures been developed for the benefit of financial exchange between buyer and supplier?
 - ii) What adaptations have been made, proposed or discussed by the parties involved in the relationship (for example: modifications of product specifications, product design, manufacturing processes, planning, delivery procedure, stock holding, administrative and financial procedures)?

- iii) What were the reasons for these initiatives? What people were involved in the development of propositions, discussion, and execution of adaptations?
- iv) How would you describe the social character of the relationships between members of the buying and supplying organisation in terms of trust, openness, personal friendships, social contacts, et cetera?
- v) What is the buyer's impressionistic character of the counterpart?
- vi) What is the buyer's impressionistic character of the dependence between buyer and supplier (mutual shares)?
- vii) Have there been any critical issues during the history of the relationship? Please explain how these have been solved.

Additionally, information will be gathered on the companies involved in the focal relationship (through studying documents, electronic sources, et cetera):

- 1) Customer company:
 - i) Company size (number of employees, turnover, profit, size, production technology, degree of (international) orientation, organisation, competences);
 - ii) Product/ service range;
 - iii) Types of customers and market segments;
 - iv) Organisation of the purchasing department;
 - v) Organisation of Decision Making Unit.
- 2) Supplier company:
 - i) Company size (number of employees, turnover, profit, size, production technology, degree of (international) orientation, organisation, competences);
 - ii) Product/ service range;
 - iii) Types of customers and market segments;
 - iv) Organisation of counterpart of Decision Making Unit.
- 3) Absolute and relative total value and/ or volume of business placed with the supplier counterpart during history of the relationship.
- 4) Characteristics of the individuals involved in the interaction in terms of functions, roles, status levels, education, qualifications, job-experience, language competence.
- 5) Information on terms of trade, contract procedures and protocols.

Appendix C List of interviewees

Component	Service	Company	Informants
Component	Call centre services	TEL	1. Category Manager Marketing & Call Centre Services
	Arranging infrastructure at customer locations	TEL	2. Category Manager Construction & Engineering
	Pension fund administration	EIA	3. Purchaser 4. Project leader migration pension fund administration
	Subcontractors for glass cleaning activities	FSP	5. Manager Procurement 6. Business Unit Manager Specialist Cleaning Techniques (south region)
	Rental of aerial working platforms	FSP	7. Procurement Manager 8. Business Unit Manager Special Cleaning Services
	Bank hall equipment	BAN	9. Purchaser 10. Project Manager Cards and Circulating Currency
	Promotional campaigns	RDO	11. Procurement Executive 12. Manager Communications BTL & Sales Promotions
	Forecourt maintenance	RDO	13. European Procurement Manager Site Maintenance 14. Senior Engineer European region A
	Promotion/ premiums	BAN	15. Purchaser
	Payment handling services	EIA	16. Senior Buyer Facilities 17. Manager Cash Management
Semi-manufactured	Drilling services	FEE	18. Supply Chain Engineer (purchasing) 19. Drilling Development Team Leader
	Industrial cleaning services	OCS	20. Commodity Buyer/ Account Manager 21. Chief Terminal Premises 22. Team leader Tank cleaning 23. Superintendent Dayshift Terminal A
	Cleaning for delivery	CON	24. Purchasing Manager Business Unit A 25. Head of Purchasing Business Unit A, region 1

Appendix C Continued

IT outsourcing	TEL		26. Manager Group Category ICT 27. Chief Information Officer 28. Former Chief Information Officer Division Fixed
Marketing services	TEL		29. Category Manager Marketing & Call Centre Services 30. Category Purchaser Marketing Communications 31. Category Purchaser
Office automation	EIA		32. Senior Buyer ICT 33. Project Leader European Tender Office Automation 34. Portfolio Manager Work Unit Services
PR Agency	FSP		35. Manager Marketing
Training and education	BAN		36. Purchaser 37. Representative of company academy
Training and education	CON		38. Head corporate education/ Director Corporate Business School
Engineering and construction services	FEE		39. Supply Chain Engineer 40. Senior Project Engineer
Managing stock of piping materials	FEE		41. Supply Chain Engineer 42. Mechanical Engineer Piping
Extraction and storage of condensate	NGT		43. Purchaser 44. Representative Operations department
Project management services	RDO		45. Retail Category Manager Design & Construction 46. EU Construction Focal Point
Consumer panel	FMG		47. Consumer and Market Insight Manager 48. Manager Trade Marketing department
Temporary labour	TEL		49. Manager Procurement Professional, Financial & HR Services 50. Human Resources representative call centre
Cables and connections for work spaces	EIA		51. Senior Buyer 52. Service Manager
Instrumental			

Appendix C Continued

Consumption				
Decontamination of soil		NGT	53. Purchaser 54. Operations department	
Steel conservation		NGT	55. Purchaser 56. Project Manager Steel Conservation for Maintenance Purposes	
Temporary IT labour		NGT	57. Purchasing Manager	
Travel agent		FSP	58. Procurement Manager 59. Secretary	
Building maintenance		BAN	60. Purchaser 61. Manager Owner Maintenance & Projects	
Office cleaning		BAN	62. Purchaser 63. Product Manager m ² , Interior Design & Maintenance	
e-HRM system		OCS	64. Purchaser 65. Manager Human Resources	
Security		OCS	66. Purchaser 67. Assistant Terminal Manager terminal A	
Office cleaning		RDO	68. Contracting & Procurement Consultant 69. Office Manager	
Gas and electricity		OCS	70. Buyer Projects & Services 71. Manager Terminal A 72. Manager Terminal B	
Waste management		FEE	73. Supply Chain Engineer 74. Representative Waste Management department	
Interior and exterior design of lease cars		CON	75. Project Leader Corporate Strategic Sourcing 76. Representative Corporate Commercial department 77. Head Facility service building A	
Office cleaning		CON	78. Office manager/ Head Civil Services building B 79. Representative Corporate Facility Management department	
Office cleaning		FMG	80. Manager Facilities and Services Business Unit A	

Appendix D Self-administered questionnaire

Concept		Item
<i>Process success</i>		1. The supplier meets the targets agreed upon in the Service Level Agreement.
		2. Critical issues that arose have been resolved satisfactory by the supplier.
		3. Managing the supplier in his daily operations requires more efforts than expected.
		4. The supplier understands what we expect.
		5. The collaboration with the supplier is problematic.
		6. The supplier involves the relevant functional disciplines in their ongoing service provision.
		7. The supplier provides us with the competencies that we require.
		8. Communication with the supplier is considered to be effective.
<i>Outcome success</i>		9. The service from this supplier results in value-creation in terms of profits/ sales.
		10. The supplier is a source of innovative ideas.
		11. The supplier delivers the service with high quality.
		12. The service from this supplier results in cost savings at our company.
<i>Risk</i>	<i>Importance</i>	13. The size of spend on the service obtained from this supplier in comparison with the spend on other purchases in our company is high.
		14. The service obtained from this supplier is important for (final) customer satisfaction.
		15. The service obtained from this supplier is important for continuation of daily operations/ processes.
		16. The service obtained from this supplier is important because of regulations imposed on our company.
	<i>Complexity</i>	17. The service obtained from this supplier is highly specialized in terms of its content.
		18. The service obtained from this supplier is highly customized.
		19. The service obtained from this supplier has a lot of characteristics that are nearly impossible to evaluate.
		20. The service obtained from this supplier requires a lot of integration with existing processes/ systems.
		21. The service obtained from this supplier requires (final) customer involvement.
	<i>Novelty</i>	22. We have experience with the content of the service obtained from this supplier or of services closely resembling this service.
		23. We have experience with how the service obtained from this supplier or services closely resembling this service are used/ integrated in our company.

Appendix E Overview of documents studied

Company	Service	Document(s)
<i>CON</i>	Cleaning for delivery	<ul style="list-style-type: none"> ▪ Purchase scheme (project overview including items to be purchased and lead-times) ▪ Documents on quality system for purchasing ▪ Overview of purchase categories and subcategories ▪ Example contract for subcontracting and various other activities
	Training and education	<ul style="list-style-type: none"> ▪ CEDEO handbook ▪ Questions belonging to Decision Tree Training Needs ▪ General purchase conditions ▪ General conditions for working on a construction site ▪ Flyer corporate business school
	Office cleaning	<ul style="list-style-type: none"> ▪ Request for proposal
<i>FSP</i>	Subcontractors and rental of aerial working platforms	<ul style="list-style-type: none"> ▪ Differences in accountability WKA ('Wet KetenAansprakelijkheid' and WAADI ('Wet Allocatie Arbeidskrachten Door Intermediairs')) ▪ Questionnaires pre-selection suppliers ▪ Selection criteria subcontractors ▪ Codes of conduct FSP ▪ Supplier evaluation forms
<i>TEL</i>	General	<ul style="list-style-type: none"> ▪ Annual report 2004 ▪ Various company presentations
	IT Outsourcing	<ul style="list-style-type: none"> ▪ "Outsourcing: From Cash-Driven to Value-Driven", hardcopy presentation by Chief Information Officer TEL, February 2005
	Marketing	<ul style="list-style-type: none"> ▪ Category plan marketing and call centre services ▪ Presentation purchaser on buying marketing services at Erenstein conference 2005
<i>FEE</i>	General	<ul style="list-style-type: none"> ▪ "EP in Europe: SCM Management System", November 2003
<i>BAN</i>	Office maintenance	<ul style="list-style-type: none"> ▪ Organisation diagrams BAN and organisational subunits related to facilities ▪ Schematic overview of organisation maintenance projects
	Premiums	<ul style="list-style-type: none"> ▪ Workflow premium purchase
<i>OCS</i>	Industrial waste and cleaning	<ul style="list-style-type: none"> ▪ Copies of contracts with both industrial cleaning suppliers ▪ General purchase conditions trade organisation
	Security services	<ul style="list-style-type: none"> ▪ Online security management system

Appendix F Overview of spin-off projects

Research projects

- Study into the purchase of business services versus industrial products among members of the southern department of the Dutch association for purchasing management (NEVI); survey conducted in November 2004.
- Study into the purchase of cleaning services for trains, trains stations and office buildings by the Dutch Railways (DRW); case study conducted between September and December 2006.

Selected academic presentations

- Conference presentations at IMP (2004-2007), IPSERA (2004-2007), Academy of Management (2007), AMA Frontiers in Services (2006), Urbino Workshop (2006), IPSERA German Node (2006).
- Invited presentations at Arizona State University (2006) and the Universiteit van Maastricht (2007).

Professional duties

- Reviewer for the Journal of Purchasing and Supply Management, Industrial Marketing Management, the Journal of Supply Chain Management and the International Journal of Operations and Production Management.
- Member of the board NEVI Kring Zuid-Nederland (southern sub department of Dutch association for purchasing management) (since 2007).
- RSM Erasmus University: Organizer of research seminar on business services (2007).
- Invited reviewer for the IPSERA conference (2005-2007), the IMP conference (2006-2007), the EURAM conference (2007), the CEMS seminar in Riezlern (2007) and the Relationship Marketing Summit (2007).
- Co-initiator of NEVI Inkoopcompetitie as part of the 50-year anniversary of NEVI. Involved with working out the details and in the background with organizing the competition (2006).
- Member of NEVI Anniversary Committee (2005-2006).
- Developing a workshop around the theme Buying Business Services for the NEVI/ SIGB Erenstein conference (2005).
- Co-organiser of an international, scientific conference (21st Industrial Marketing and Purchasing Conference entitled: "Dealing with Dualities") in Rotterdam, the Netherlands. Responsible for conference location, guest accommodation and evening program (2004-2005).
- Developing a workshop around the themes Early Supplier Involvement, Total Cost of Ownership and Partnership in bad times for the NEVI/ SIGB Erenstein conference (2003).

Other

- Professional training (Commodity Strategy Development) at a Dutch bank (2006).

Appendix G Spin-off project Dutch Railways (DRW)

Ongoing Buyer-Seller Interaction in Business Services: Including the Perspective of Service Providers

ABSTRACT

Prior studies have investigated the ongoing interactions between buyers and sellers of business services after the contract has been signed. These studies draw on a classification of business services, which identifies four types of services based on how the buying company uses these services, and demonstrate that for each of the four service types, different patterns of interaction are most successful. A limitation of these studies is that they build on data collected at the buying company only.

This paper presents the results of a single embedded case study based on two-sided data collection. We study the purchase of cleaning services for trains, train stations and office buildings at the Dutch Railways (DRW) (first unit of analysis). At a more detailed level, we study ongoing interactions with two suppliers each providing all three types of cleaning services (second unit of analysis). The focus in this paper is on the service provider's perspective of the ongoing interaction. We focus on supplier capabilities to demonstrate why one buyer-seller interaction is successful, whereas the other is not.

INTRODUCTION

Service management and services marketing researchers have consistently been emphasizing that services are produced in interactive processes between the seller and the buyer [Grönroos, 2000; Lovelock, 1983; Lovelock, 2001; Zeithaml and Bitner, 1996]. Traditionally however, these disciplines have mostly been concerned with consumer services. Despite calls for more research into services directed at organisations rather than consumers [Brown, 2002; Parasuraman, 1998], the research on business services is still rather limited.

Also from a purchasing and supply management perspective, limited academic research is available on business services [Carter and Ellram, 2003; Sheth, 1996]. The literature that is available focuses on the initial stages of the purchase process [e.g. supplier selection, Day and Barksdale, 1994] as opposed to the ongoing business relationship. As an exception, Mitchell [1994] briefly discusses problems and risks in purchasing consultancy services and complements the stages comprising the up-front decision-making process with project management and performance evaluation.

Grönroos [2004] emphasises the importance of the service encounter and the customer-service provider interactions it comprises. It is in the ongoing business relationship that value is 'co-created' in interaction between buyer and seller [Vargo, 2006; Vargo and Lusch, 2004]. This is echoed by Wynstra et al. [2006], who emphasise the processes and practices that make up the daily activities of organizations and that relate to strategic outcomes. They point out that the ability to understand and manage the ongoing interaction with a service provider is equally important to being able to specify and contract a service.

Wynstra et al. [2006] furthermore argue that buyer-seller interaction varies systematically for different types of business services. They propose a classification of business services, which identifies four types of services based on how the buying company uses the service. Going through several iterative research cycles, the authors demonstrated that for each of the four service types, different patterns of interaction are most successful.

An important limitation of these studies however is that they are based on data collected at the buying company only. In order to address this limitation, a recent embedded case study into ongoing buyer-seller interaction was based on two-sided data collection. This case study concerned the study of the purchase of three different types of cleaning services at the Dutch RailWays (DRW) from two different suppliers (and as such comprises two cases). Whereas the ongoing interactions were highly problematic for one supplier, the interaction with the other supplier was highly successful. In this paper, we focus on the development of supplier capabilities to explain why the differences in success emerge.

The organization of our paper is as follows. First, the theoretical background for this research is presented. We focus specifically on the dimension of supplier capabilities and briefly discuss some of the relevant literature. Then, a brief overview of the research design and data collection methods is presented, followed by summaries of the two cases. The two case summaries are then analysed in terms of supplier capabilities to demonstrate how they can be developed to achieve successful ongoing exchange of business services. Finally, the conclusions and limitations of this research are discussed.

THEORETICAL BACKGROUND

Research in the field of purchasing and supply management (PSM) has traditionally focused on industrial goods. Existing PSM research on services mainly addresses the difficulties associated with the selection and contracting stages of the purchasing process [Day and Barksdale, 1994; Mitchell, 1994]. For example: services are hard to evaluate in advance (or even in hindsight) of the purchase. This complicates supplier selection, since it is difficult to assess

whether the service purchased from a particular supplier will fulfil the buying company's expectations.

In contrast, the Industrial Marketing and Purchasing (IMP) Group has been strongly and consistently arguing that studies of business marketing and purchasing should focus less on the 'transactional' purchasing process, and more on the *ongoing interactions* between customer and supplier [Ford, 2002; Håkansson, 1982; Håkansson and Snehota, 1995]. These ongoing interactions in business relationships are highly relevant, particularly since most firms tend to engage in a limited number of long-lasting relationships. This idea is echoed by services marketing and service management scholars [Grönroos, 2000; Grönroos, 2004; Lovelock, 2001; Zeithaml and Bitner, 1996], who argue that future research in this field should specifically focus on the service encounter and the interactions it comprises. Research conducted in these disciplines however mostly revolves around consumer services.

This should have triggered a substantial amount of research into the ongoing interactions between buyers and sellers of business services. Building on the studies of the IMP Group on ongoing interaction between buyers and sellers of industrial goods, Wynstra et al. [2006] argue that the way a buying company uses a service is the main driver for effective variation in interaction. Based on this driver, they propose a classification of business services, which identifies four types of services.

Two of these concern services that remain within the buying company, whereas the other two concern services that move downstream to (end) customers. The first group consists of consumption services and instrumental services. Consumption services do not directly affect the primary processes of the buying company (cleaning of office buildings for an airline). Instrumental services on the other hand do affect how the buying company's primary processes are carried out (management consultancy to improve the purchasing function at an airline). The second group consists of semi-manufactured and component services. Semi-manufactured services are used as an input in the buying company's primary processes and become part of the buying firm's offering to its customers (weather forecast to make a flight and fuelling plan at an airline). Finally, component services are being passed on to the buying company's customers directly (luggage handling for an airline).

Wynstra et al. [2006] argue that the customer-usage dimension is one of the main determinants of effective buyer-seller interfaces and interactive processes during the period after the contract has been signed. This period is hereafter referred to as the 'ongoing service exchange'. Therefore, different patterns of interaction will be most successful for each of these four types of services. Interaction is conceptualised in terms of a number of 'structural' variables related to the buyer-seller interface (i.e. key objectives of interaction, buyer and supplier critical capabilities, buyer and supplier representatives involved) and a number of processes of interaction (communication and

adaptation). Starting from some initial exploratory case studies, 36 cases (service purchases) at nine different buying companies were studied in a subsequent field study by the authors of this paper. Several analyses were conducted with various subsets of the data to investigate what these successful interaction patterns look like for each of the four types of services.

For example, in the ideal pattern for component services, the key objective is to make sure that the service to be purchased fits with existing service offerings. People knowledgeable about (end) customer requirements (marketing, or even from customers themselves) are involved in the ongoing interactions. The buying company translates these customers' requirements, and coordinates and synchronises the various elements of the service purchased with their own offerings. The supplier matches capacity with demand and deals with the buying company's customers in the way the buying company wants them to. Communication concerns the requirements of customers, the fit of the service with the rest of the offering, and the customers' evaluation of the service.

For instrumental services, the key objective is to achieve the desired effect/ change in the buying company's primary processes. Business development and process representatives are primarily involved in the ongoing interactions. The buying company is able to specify the desired change to certain processes; the supplier understands how the service will result in the desired effect on the buying company's primary processes. Project management/ implementation skills are highly important buyer/ supplier capabilities. Trends and developments inside the buying company and the supply market are an important topic in the communication, as to align both parties both in the short and in the long term.

Similar patterns were developed for the other two service types. The results have been summarised in Table F.1.

RESEARCH DESIGN

We investigate ongoing buyer-seller interaction by means of a single embedded case study. We choose to adopt the case study method since we are trying to understand phenomena that have an important social element and comprise "how" and "why"-questions [Yin, 2003]. Recently, also Edmondson and McManus [2007, as in Eisenhardt and Graebner, 2007] stressed that theory-building research that relies on case studies are specifically suitable for addressing research questions regarding the 'how' and 'why' in unexplored areas. Case studies can thus be used to develop theory by trying to make sense of empirical observations (understand what is happening) and by developing ideas by going back and forth between theory and data. Dubois and Gadde [2002] refer to this process a systematic combining. Furthermore, Dubois and Araujo [2004] argue that case studies are very suitable for studies in which

Table F.1 How the dependent variables vary per service type

	Key objectives	Critical supplier capabilities	Critical customer capabilities
<i>Consumption</i>	<ul style="list-style-type: none"> ▪ The service should be integrated with various support process 	<ul style="list-style-type: none"> ▪ Ability to develop efficient routines ▪ Ability to adapt the service to the specific situation of customer 	<ul style="list-style-type: none"> ▪ Ability to specify and communicate requirements of various internal customers ▪ View service as value-added rather than cost
<i>Instrumental</i>	<ul style="list-style-type: none"> ▪ The service should affect the buying firm's primary processes in the desired way and important characteristics of these primary processes 	<ul style="list-style-type: none"> ▪ Understand how the service affects the buying company's primary processes ▪ Project management/ implementations skills 	<ul style="list-style-type: none"> ▪ Ability to communicate desired effect on primary processes (internal customer demands) ▪ Ability to enable the supplier in achieving the desired performance
<i>Semi-manufactured</i>	<ul style="list-style-type: none"> ▪ The service should become an integral part of the buying company's primary processes 	<ul style="list-style-type: none"> ▪ Understand how service affects performance buying company ▪ Flexibility to match demand patterns ▪ Reliability 	<ul style="list-style-type: none"> ▪ Clearly communicate requirements and the consequences of not meeting requirements ▪ Ability to live up to requirements and delivery schedule themselves
<i>Component</i>	<ul style="list-style-type: none"> ▪ Service has to become an integral part of buying company's offering to end customers 	<ul style="list-style-type: none"> ▪ Understanding end customer and how service fits with buying company's customer processes ▪ Match delivery with demand ▪ Reliability 	<ul style="list-style-type: none"> ▪ Ability to clearly specify customer requirements and how service impacts customer processes ▪ Ability to communicate company culture and behaviour

Supplier representatives	Customer representatives	Main issues in the communication
<ul style="list-style-type: none"> ▪ Marketing representatives 	<ul style="list-style-type: none"> ▪ Internal customers (any functional discipline or all) 	<ul style="list-style-type: none"> ▪ Internal customer requirements ▪ Improvement opportunities ▪ Daily business
<ul style="list-style-type: none"> ▪ Product representatives, often including a team of consultants or process engineers 	<ul style="list-style-type: none"> ▪ People involved with the primary process at which the service is directed (process engineers) ▪ Users of the primary process at which the service is directed 	<ul style="list-style-type: none"> ▪ Effects of service on primary processes ▪ Performance and improvement opportunities ▪ Coordination between primary process and service delivery
<ul style="list-style-type: none"> ▪ ‘Production planning’ and marketing representatives 	<ul style="list-style-type: none"> ▪ Co-producers/service “production” planners ▪ End customer representation (marketing/ sales) 	<ul style="list-style-type: none"> ▪ End customer requirements ▪ Timing of service delivery ▪ Trends and developments within buying company and in supply market
<ul style="list-style-type: none"> ▪ Marketing representatives regarding the supplier’s own service ▪ ‘Downstream’ specialists (knowledgeable of the customer’s offering) 	<ul style="list-style-type: none"> ▪ Marketing representatives, people knowledgeable of the buying firm’s final offering 	<ul style="list-style-type: none"> ▪ Demands of end customer ▪ Buying company’s customer processes and company culture ▪ Transition process ▪ Supplier performance ▪ Demand management

interactions and relationships form the basic units of analysis.

The case study has an embedded design because it comprises the study of the ongoing interactions for three types of services between one buying company and two different suppliers. The suppliers form the first units of analysis, which are embedded in the second unit of analysis, namely the buying company DRW. The objective of the case study is to describe the ongoing buyer-seller interactions for each of the three service types, to see: 1) whether the interactions are differentiated for these three services; and 2) whether the interactions are successful.

The buying company at which the case study is conducted is the Dutch RailWays (DRW). DRW transports over 1 million passengers between 390 train stations in the Netherlands. Additionally, their task is to manage, maintain and develop the various train stations. Cleaning is part of these activities: having clean trains and clean train stations is one of the key objectives of DRW in order to properly service their customers. DRW therefore buys cleaning services from external providers for trains and stations, and for office buildings. This case study comprises the purchase of cleaning services for these three objects from two suppliers, each operating in different regions.

Because the cleaning services are directed at different objects, the use of these three cleaning services differs. As a result, the three cleaning services belong to different classes in the classification of Wynstra et al. [2006]:

- The cleaning of train stations is purchased by DRW Stations (Stations) and takes place continuously during the day. Besides daily cleaning activities (mopping the floors twice a day), the cleaning crew is also responsible for getting rid of small nuisances, like a package of French fries that is dropped by a passenger. The cleaning service is passed on to customers of DRW, i.e. passengers, unaltered.
- The cleaning of trains is purchased by DRW Trains (Trains) and consists of three activities: modular cleaning jobs (performed on a nightly basis), periodical cleaning jobs (performed simultaneously to maintenance activities), and “turning point” cleaning (performed at the end of a track, before a train is turned and continues its time table). The cleaning service eventually becomes part of DRW’s offering to passengers in the form of a clean train. Therefore, cleaning of trains is considered a semi-manufactured service.
- The cleaning of office buildings is purchased by DRW Offices (Offices) and concerns cleaning during the daytime of offices and other areas (like the cafeteria) in DRW’s office buildings. The cleaning of offices is a consumption service.

Traditionally, each of DRW’s subunits (Stations, Trains and Offices) purchased their own cleaning services. Recently, DRW decided to leverage the volume of cleaning activities by conducting one tender (per region) for the

three cleaning services together. By purchasing all three cleaning services from one supplier, volume discounts would be possible. DRW furthermore hoped to achieve efficiency increases, since the supplier would be able to optimise its time utilisation. In the past, train cleaners from one supplier would be waiting for “turning point” and do nothing, while at the same time the station cleaners from another supplier would be cleaning the platforms. Furthermore, by combining the three types of cleaning, DRW would be able to offer suppliers both day-time and night-time work, which should have a positive effect on the suppliers’ prices. DRW therefore added a company-specific assignment to the research, which was to evaluate two purchase trajectories in terms of joint tendering and the implications for contract management.

DATA COLLECTION METHODS AND ANALYSIS

Data collection primarily took place by means of semi-structured interviews. Between June 2006 and January 2007, about fourteen interviews of 1.5 to 2 hours each were conducted with the senior buyer, the members of the commodity team (who develop the sourcing strategy for the commodity ‘cleaning’), and members of the purchase teams that actually conducted the tenders. The commodity team and the purchase team both consist of representatives Stations, Trains and Offices. The interviews in June 2006 were mainly for purposes of orientation; intensive data collection took place between September and December 2006. Interviewing multiple informants regarding a certain topic enables data source triangulation (Yin, 2003).

The people to be interviewed were identified by the senior buyer, who was the main stakeholder in this project. Some people were interviewed multiple times because people either were involved with more than one purchase team or assumed dual roles (for example: being a commodity team member, who is also part of a purchase team). The senior buyer was also interviewed multiple times, since she carried main responsibility for the sourcing of cleaning from DRW and as such had been involved in all purchase trajectories. The senior buyer furthermore also is part of the commodity team.

The interviews with the senior buyer focused on the tactical/ strategic considerations for purchasing for bundling the purchase of the three cleaning services. Furthermore, since the senior buyer had an overview of all activities related to the sourcing of cleaning, interviewing her helped clarifying issues and eliminating inconsistencies resulting from the other interviews. The interviews with commodity team members addressed similar issues, but then from an internal customer’s perspective. Finally, the interviews with the purchase team members addressed the actual tender trajectory (specification, selection, contracting) and how DRW and the service provider interact during the contract period. To resolve any conflicting observations, we verified these

observations with the involved interviewees by a follow-up using telephone or email. Furthermore, informal discussions took place before and after interviews and meetings with the senior buyer.

Representatives of two suppliers were furthermore interviewed to obtain an understanding of how they view the new contracts with DRW. The primary contact persons at the supplier were provided by the members of the purchase teams at DRW. The various supplier counterparts of the different DRW team members were identified in advance and the supplier was requested to have each of these people participate in an interview. Unfortunately, multiple people could only be interviewed at one of the suppliers (the General Director and the Head of Sales were interviewed at this supplier, as opposed to only the Manager National Accounts at the other). The people interviewed had mainly been involved in the sales trajectory, but claimed to have sufficient insight in the daily collaboration between their company and DRW (the cleaning providers' company sizes are not very large; we can therefore assume that these people have a good overview of the post-contractual dealings with DRW). Also, the ideas obtained from the interviews with the suppliers were verified with DRW and vice versa, as to ensure that an unambiguous and complete picture had been obtained. The functions of all people interviewed can be found in Table F.2.

Questions for the interviews were derived from the lists of interview questions used by the Industrial Marketing and Purchasing (IMP) Group in their studies of ongoing interaction between buyers and sellers of industrial goods [Håkansson, 1982]. The questions addressed topics like the characteristics of the companies involved, the characteristics of the three cleaning services, the purchase process, the ongoing business and the success of the joint contract. For the last topic, we asked the buying company about their perception of success relative to their expectations in advance of signing the contract. As such, we follow Parasuraman [1998, p. 312], who noted that service quality is a function of a gap between expectations and performance. We gave specific attention to their perception of the process of ongoing service delivery and the service actually delivered. This is in line with Grönroos [1982] and Edvardsson and Olsson [1996], who make a distinction between the outcome of the service (what customers actually receive) and the process of service delivery (way in which customers receive the service).

Each interview was recorded and transcribed; these transcriptions were verified with the interviewees. The results were furthermore discussed among the research team to further enhance validity⁴⁶. Table F.3 summarizes how we dealt with validity and reliability issues.

⁴⁶ The research team consisted of one principal researcher and the two co-authors of this paper.

Table F.2 Interviewees per service

Team	DRW Stations	DRW Trains	DRW Office	Other	Service provider
<i>Commodity team</i>	<ul style="list-style-type: none"> ▪ Process Manager Quality & Control 	<ul style="list-style-type: none"> ▪ Director National Cleaning Office 	<ul style="list-style-type: none"> ▪ Facility Manager Corporate Housing⁴⁷ 	<ul style="list-style-type: none"> ▪ Senior buyer ▪ Project leader ▪ CPO 	-
<i>Purchase team north region/ Supplier A</i>	<ul style="list-style-type: none"> ▪ Advisor Cleaning Management 	<ul style="list-style-type: none"> ▪ Contract Manager Cleaning north region (former and current) 	-	-	<ul style="list-style-type: none"> ▪ Manager National Accounts⁴⁸
<i>Purchase team south region/ Supplier A</i>	<ul style="list-style-type: none"> ▪ Advisor Cleaning & Environment 	<ul style="list-style-type: none"> ▪ Contract Manager Cleaning south region 	-	-	<ul style="list-style-type: none"> ▪ Manager National Accounts
<i>Purchase team central region/ Supplier B</i>	<ul style="list-style-type: none"> ▪ Advisor Station Cleaning Management 	<ul style="list-style-type: none"> ▪ Contract Manager Cleaning central region 	<ul style="list-style-type: none"> ▪ Facility Manager Corporate Housing 	-	<ul style="list-style-type: none"> ▪ General Director ▪ Head of Sales

⁴⁷ The Facility Manager Corporate Housing represented DRW Office in all purchase teams. Since DRW Office comprised a very small part of spend in the north and south regions, the Facility Manager Corporate Housing was only interviewed as a member of the commodity team and as a member of the purchase team in the central region.

⁴⁸ The supplier's Manager National Accounts was involved in both sales trajectories won by supplier A.

Table F.3 Validity and reliability in the case studies

Type of validity	Methods of addressing this in the case studies
<p><i>Construct validity</i></p> <p>“establishment of correct operational measures for the concepts being studied”</p>	<ul style="list-style-type: none"> ▪ Triangulation of questionnaire and interview data ▪ Triangulation of multiple informants: different internal representatives ▪ All informants received draft versions of the interview report for comments ▪ Draft versions of the complete case report were verified with at least one key informant from each buying firm ▪ Three research team members gave input during data collection and analysis ▪ Result: emergent explanations adjusted and expanded; participants agreed to the interpretations
<p><i>Internal validity</i></p> <p>“establishing causal relationships whereby certain conditions are shown to lead to other conditions, as distinguished from spurious relationships”</p>	<ul style="list-style-type: none"> ▪ Use of conceptual framework ▪ Result: relationships between the different variables from the conceptual framework identified and substantiated
<p><i>External validity</i></p> <p>“establishing a domain in which the study’s findings can be generalized”</p>	<ul style="list-style-type: none"> ▪ Theoretical selection of cases at the level of the service purchase ▪ Result: findings applicable to different types of service purchases
<p><i>Reliability</i></p> <p>“demonstrating that the operations of a study can be repeated with the same results”</p>	<ul style="list-style-type: none"> ▪ Development of case protocol ▪ Development of (interview) questionnaire ▪ Result: methodology transparent and repeatable

Based on: Yin (2003).

In addition to interviews, other data collection methods were used, thereby enabling method triangulation [Yin, 2003]. Various documents were studied, like Excel sheets containing overviews of supplier selection decisions, contracts, and supplier performance ratings.

Finally, an organised discussion session took place near the end of the interview period to discuss the results. This meeting, which lasted 1.5 hours, was attended by all commodity team members (five people), the project leader of the purchase trajectories, and the senior buyer for security services (this commodity is going through a similar development as cleaning). The head of

the commodity team chaired the meeting, and after the findings of the study had been presented by the authors, they were discussed among the attendees. A summary report was made of the meeting, and verified with the senior buyer.

ANALYSIS

After the interviews had been transcribed and approved by the interviewees, the interviews were coded in terms of various topics related to the initial purchase trajectory and the ongoing interactions. Codes used were specification, supplier selection, contract / Service Level Agreement, contract management/ ongoing dealings, evaluation/ performance. Data thus came from analyzing and interpreting what interviewees were trying to say [Stuart et al., 2002, p. 427].

The document studies provided more detailed insight into issues like Key Performance Indicators and their interrelationships, and the way in which the services to be delivered had been specified. As such, we could verify claims of interviewees about for example the completeness or clarity of the contract. The data from the discussion session was analysed in a similar manner as the interviews. The feedback obtained provided us with support that the picture we had obtained was correct and that the ideas we developed for potential improvement of the situation were relevant.

Based on these analyses, descriptions of the interaction patterns were made. Furthermore, the main findings with regard to the initial purchase trajectory were described. The descriptions of the patterns of interaction were then compared with the 'ideal' patterns of interaction developed in prior research to see whether and where discrepancies arise. It was found that discrepancies occurred most strongly with regard to the supplier's functional representatives involved in the ongoing interactions and the capabilities the supplier brought into the relationship (we will explain how we arrived at this conclusion when discussing the results of the cross-case analysis in our Findings section).

Type of functional representatives and capabilities are part of the dimensions along which a pattern of interaction can be described, and highly important, since the quality and productivity of business services are often highly dependent on the (human) resources involved in the production, delivery and consumption of those services – on *both* sides of the relationship [Grönroos, 2000; Gummesson, 1998; Zeithaml et al., 1988]. Capabilities (or: competencies) are also mentioned in the SERVQUAL model [e.g. Parasuraman et al., 1985] as an element that partly determines service quality. Capabilities in services are required to jointly engage in value-creation [Vargo, 2006]. According to Walter et al. [2001], value creation is the main reason for buyers and suppliers to engage in value creation in the first place. It is thus

highly relevant to consider whether the parties involved have the competencies required to obtain the desired end result. Therefore, while the patterns were still being analysed, additional literature research was conducted, guided by the emerging empirical findings. As Dubois and Gadde [2002, p. 553] describe: “Parallel to the data collection, the search for complementary theories continued”. Literature on capabilities was studied more closely to be able to evaluate why the ongoing interactions with one supplier were successful, whereas the interactions with the other supplier were not.

Ford et al. [1986] claim that capabilities describe the buyer-seller relationship in terms of what the parties can do for each other and which functions they can fulfil. This is linked to the idea that business relationships have functions, referring to the activities that either party in the relationship performs and the resources it employs in doing so [Anderson et al., 1994; Håkansson and Johanson, 1993]. Building on the idea of functions of business relationships, Walter et al. [2003] propose eight value-creating functions of supplier relationships for buying organisations. Four of these functions are direct, which means that they have an immediate effect on the buying company. The other four have an indirect effect on buying companies, because they are directly or indirectly connected to other relationships. The direct functions are: cost reduction (through lower prices), quality (for the end customer and/ or for the buying company), volume (having more volume provided by a supplier with which a good working relationship) exists and safeguard function (having multiple suppliers that can back up each other as a way to reduce risk). The indirect functions are: innovation development, market (the supplier helps the buying company to establish contracts with new potential exchange partners), scout (supplier transferring knowledge/ learnings from one buying company to another) and the social support function (working with cooperative partners may benefit the relationship atmosphere).

By combining the framework of Walter et al. [2003] and with the findings on ‘effective’ competences from prior research into ongoing interaction in business services, claims can be made with regard to how certain supplier capabilities contribute to successful ongoing service exchange. Therefore, these two frameworks are used to analyse supplier capabilities in the embedded case study. First, within-case analyses are conducted of the ongoing interactions with each of the two suppliers. Then, a cross-case comparison is made.

FINDINGS

At the moment this study was conducted, DRW had bundled its three types of cleaning into one contract in three regions. Two of these regions were awarded to supplier A in 2006; the third region was awarded to supplier B in

2006. All contracts are for a period of three years, with an option to extend the contract for another year two times.

We will now describe what the patterns of interaction look like between DRW and each of its suppliers.

Ongoing interaction between supplier A and the three subdivisions of DRW

Considering the ongoing interactions between supplier A and Stations (thus: for cleaning of stations), the key objective is to contribute to DRW's value proposition through clean junctions of public transport. Since the cleaning service of supplier A contributes directly to DRW's value proposition to its customers, it is important that the supplier understands these customers' requirements and develops a cleaning program that will fulfil these requirements. However, so far, end customers are not involved/ questioned for determining what cleaning services are required. Stations has special Cleaning Advisors, who are fulltime involved with cleaning and who determine the cleaning requirements. An external third party is involved to inspect quality: periodically, this third party evaluates what cleaning activities have been performed and how well they have been performed. Furthermore, Stations uses a Service Level Monitor, a three-weekly quality check on eye-catching contaminations. The last quality measure is the end customer's perception of the cleaned object. Supplier A's performance is assessed in view of all these measures. According to supplier A however, there is no clear link between the end customers' evaluation and the quality of the cleaning activities. This results in a lot of debate regarding the quality of cleaning, rework, and dissatisfaction with both the buyer and the supplier.

This was aggravated by the fact that supplier A had difficulties with organising the cleaning of trains, as a result of which they had to shift their energy and attention from stations to trains, thereby taking both management and operational capacity away from stations. According to the Trains purchase team member in one of the regions: *"Supplier A had never before cleaned trains: Trains therefore had to teach supplier A what train cleaning is all about. I have spent a lot of time at our cleaning location to explain about our company, our requirements, how to clean trains, et cetera."* His colleague in the other region stated: *"Supplier A was sort of walking around with the specifications in one hand, to see what tasks they did and did not need to do."* Also Stations had to put in a lot of extra effort to make the contract work (to the extent that some of the people got seriously overworked).

Considering the interactions between Trains and supplier A, also here, the key objective of cleaning is to contribute to DRW's value proposition. Since the cleaning of trains (during the day) is performed during DRW's operations, supplier A has to be very flexible in terms of performing the cleaning activities (a train may arrive a little earlier or a little later), and reliable as to not create

disturbances in the time-table. Supplier A however indicates conflicting interests between Trains and Stations: *“For example: when we know a train is not coming or coming later, we want to clean platforms. Trains however does not want us to, since they then feel like they are paying for the cleaning services of Stations.”* – Manager National Accounts supplier A. Furthermore, quality is evaluated by Trains quality inspectors, which supplier A does not deem very objective.

The interactions between Offices and supplier A are less problematic. They were hardly affected by the problems supplier A had with trains and stations, since cleaning of offices is different in terms of the location, the type of people that do this work (women versus men), the type of activities performed (inside, medium-intensive labour versus outside, very intensive labour), et cetera. The key objective is to have the service being performed efficiently and effectively. Supplier A therefore needs to develop efficient routines, as well as to understand the (occasionally different) needs of the various internal customers. For Offices, the Facility Manager represents the various occupants of the office buildings, and has to identify and communicate the requirements of these occupants. The processes of interaction are much more stable, with quality being evaluated through annual questionnaires measuring the occupant’s satisfaction. Supplier A has a work program and knows what to do; in case of serious discrepancies the Facility Manager and supplier A meet to discuss these.

These observations (summarised in Table F.4) lead to some interesting findings. Firstly, supplier A involves the same functional representatives with all three types of cleaning, thereby suggesting that they do not clearly differentiate their cleaning activities. Indeed, supplier A has in each region separate cleaning teams for the stations, the trains and the office buildings: there is hardly any integration regarding the three cleaning activities. Thus, supplier A was not able to fulfil the profit function: all the gains resulting from volume aggregation and price reduction have been lost as a result of the problems in the ongoing interactions and the lack of integration of the service processes. Secondly, the cleaning of trains and stations is highly problematic and quality has not substantially improved (thus: no quality function). The indirect value-creating functions are not addressed at all: whereas supplier A may have been able to transfer learnings from their activities for airlines to their activities for DRW (scout function), this does not seem to be the case⁴⁹. In this case, DRW was the party with specific knowledge, not supplier A. The problems in the ongoing interaction also negatively affect the social support

⁴⁹ Note that the safeguard function does not play a role here, since DR has contracted only one supplier per region.

Table F.4 Interaction patterns DRW - supplier A

Type	Key objectives	Critical supplier capabilities	Critical customer capabilities	Supplier representatives	Customer representatives	Main issues in the communication
<i>Cleaning of stations</i>	<ul style="list-style-type: none"> Service becomes integral part of DRW' service provision/ contributes to value proposition 	<ul style="list-style-type: none"> Being able to perform prescribed working program while attaining desired quality level 	<ul style="list-style-type: none"> Translating customer satisfaction target into working program 	<ul style="list-style-type: none"> Manager National Accounts Manager Operations Regional Office Manager Object leader 	<ul style="list-style-type: none"> Cleaning advisor External quality inspectors 	<ul style="list-style-type: none"> Technical quality supplier Adequacy of working program Optimization of cleaning trains and stations
<i>Cleaning of trains</i>	<ul style="list-style-type: none"> Service becomes integral part of DRW' service provision/ contributes to value proposition 	<ul style="list-style-type: none"> Reliability (supplier needs to be present when train arrives) Flexibility (supplier can clean stations when train does not arrive) 	<ul style="list-style-type: none"> Timely communication of changes in time-table and delays (reliability DRW performance) 	<ul style="list-style-type: none"> Manager National Accounts Manager Operations Regional Office Manager Object leader 	<ul style="list-style-type: none"> Contract manager Quality inspector Trains 	<ul style="list-style-type: none"> Execution of cleaning activities / quality of cleaning activities
<i>Cleaning of offices</i>	<ul style="list-style-type: none"> Efficient and effective service provision, with minimum disturbance for employees 	<ul style="list-style-type: none"> Ability to develop efficient routines Understand needs of internal customers 	<ul style="list-style-type: none"> Ability to clearly communicate occupant requirements 	<ul style="list-style-type: none"> Manager National Accounts Manager Operations Regional Office Manager Object leader 	<ul style="list-style-type: none"> Facility Manager 	<ul style="list-style-type: none"> Daily quality Opportunities for improving efficiency while maintaining effectiveness

function. The fact that so few value-creating functions are fulfilled underlines the fact that these interactions are not very effective.

We now turn to the findings for the ongoing interactions with supplier B, after which a comparison is made.

Ongoing interaction between supplier B and the three subdivisions of DRW

The interactions between the divisions of DRW and supplier B for cleaning trains and stations are different than what we have just seen for supplier A (the findings for office cleaning are quite similar and are therefore left out of this analysis). Firstly, since stations have to be cleaned in a way that contributes to customer satisfaction, supplier B puts in a lot of energy to make sure that the quality targets are met. Furthermore, they are very much aware that they are part of DRW's customer process, and therefore try to perform their cleaning activities with a customer's point-of-view. For example: when a passenger drops a package of French fries on the platform, cleaning this up may deserve priority over emptying the bins on the train. Supplier B admits that this can be developed further, and DRW could help by investigating their customers' requirements and preferences. Furthermore, supplier B claims that they do not assign just any cleaner to cleaning stations: they feel that their cleaners are part of DRW in the eyes of the end customers, and this sets certain requirements on which people perform this job in terms of language, clothing and attitude (customer friendliness/ orientation). According to supplier B, not all employees are equally suitable to perform this job.

Concerning the integration with the cleaning of trains, the problems that occurred with supplier A do not occur with supplier B. Supplier B is very proactive in optimizing the various cleaning activities they perform: the team leader continuously checks the information panel on the hall of the station to see where and when trains will arrive and sends cleaners to the appropriate platforms. If delays occur, the team leader assigns his personnel to platforms that need to be cleaned. As such, the cleaning processes for stations and trains are strongly interlinked. Also the cleaning of trains is an integral part of DRW's customer processes. This is underlined by the fact that one and the same District Manager has responsibility for trains and stations: supplier B has assigned responsibility for the cleaning of stations, for trains at the stations, and for offices one person (including the offices is beneficial here, since all offices are in direct vicinity of the station).

The overnight cleaning of trains, which takes place at a separate location, has been assigned to a dedicated Object Leader. Quality is important here, since end customers are confronted with the results of cleaning. Furthermore, flexibility is important, since the number of trains that end up at a certain overnight location may fluctuate. For this purpose, frequent coordination regarding the performance of DRW's time table is required.

Furthermore, because DRW is a key account for supplier B, general management and sales are also involved in the ongoing interactions (though less intensively as the people in operations). As a result, the various DRW subunits and supplier B share their visions on a regular basis in order to align their strategies and identify opportunities for improvement.

The findings are summarised in Table F.5. Supplier B has been able to integrate their service activities, thereby reaping the benefits from a joint contract better than supplier A. We therefore consider the profit function to have been fulfilled. Furthermore, quality has been consistently high in the region supplier B is operating in. Regarding the indirect functions, supplier B seems to fulfil the innovation function, since they have over the years improved their service for DRW. They have also drawn on their experiences with innovative initiatives with other clients (scout function). Finally, the collaboration between supplier B and DRW is pleasant and constructive; thus, the social support function is fulfilled. The fact that many value-creating functions are fulfilled underlines the idea that this interaction is effective.

Cross-case comparison

When comparing the two cases (Tables F.4 and F.5), we find that DRW has different key objectives for the three types of services. Based on this, DRW involves different people, representing the different company subunits. Clear differences however can be seen with regard to the supplier representatives involved and the capabilities displayed. Supplier B involves different people in each of the three types of cleaning, whereas supplier A does not differentiate their functional involvement. More specifically, supplier A involves people at the tactical/ strategic level, which may not have a detailed overview of what actually goes on in operations. Supplier B involves people that directly supervise the people actually performing the cleaning activities. Consequently, the dialogue between DRW and supplier B involves much more hands-on issues than the dialogue with supplier A, which is basically limited to a discussion of the overall quality and associated payment.

A critical issue in the collaboration with supplier A, however, was that they turned out to be technically ill-capable of performing cleaning activities on trains. As a result, DRW prescribed what cleaning activities should be performed in a very detailed manner. However, the extra attention for train cleaning came at the expense of cleaning stations. Furthermore, supplier A does not explicitly acknowledge that they are performing cleaning activities of trains and station in front of customers, and accordingly does not utilise different capabilities for these services. This may be the result of the fact that DRW has specified the three types of cleaning in a way similar to when they would have been purchased separately. Thus, for supplier A, there is no difference between being awarded this joint contract and being awarded three individual contracts. As a consequence, they do not differentiate their cleaning

Table F.5 Interaction patterns DRW - supplier B

Type	Key objectives	Critical supplier capabilities	Critical customer capabilities	Supplier representatives	Customer representatives	Main issues in the communication
<i>Cleaning of stations</i>	<ul style="list-style-type: none"> Service should become integral part of DRW' offering to travellers (clean stations) 	<ul style="list-style-type: none"> Understand that cleaning is a part of DRW' primary processes Pro-active in optimizing various activities performed 	<ul style="list-style-type: none"> Identifying and communicating customer wishes and requirements 	<ul style="list-style-type: none"> District Manager stations, trains and buildings District Manager 'outside' stations Sales/ general management 	<ul style="list-style-type: none"> Cleaning Advisor External quality inspectors 	<ul style="list-style-type: none"> Quality performance Collaboration Company vision/ strategy alignment
<i>Cleaning of trains</i>	<ul style="list-style-type: none"> Service should become integral part of DRW' offering to travellers (clean trains) 	<ul style="list-style-type: none"> Understanding of being part of DRW' primary processes/ pro-activity in optimizing various activities performed For overnight cleaning: understand supplier impact on DRW performance/ ability to match demand patterns 	<ul style="list-style-type: none"> Explain how supplier performance impacts customer satisfaction Timely communication of changes 	<ul style="list-style-type: none"> District Manager stations, trains and buildings Object Leader stationing premises Sales/ general management 	<ul style="list-style-type: none"> Contract manager Quality inspector Trains 	<ul style="list-style-type: none"> Execution of cleaning activities/ quality of cleaning activities
<i>Cleaning of offices</i>	<ul style="list-style-type: none"> Efficient and effective service provision, with minimum disturbance for employees 	<ul style="list-style-type: none"> Ability to develop efficient routines Understand needs of internal customers 	<ul style="list-style-type: none"> Ability to clearly communicate occupant requirements 	<ul style="list-style-type: none"> District Manager stations, trains and buildings Sales/ general management 	<ul style="list-style-type: none"> Facility Manager 	<ul style="list-style-type: none"> Daily quality Opportunities for improving efficiency while maintaining effectiveness

activities, and just regard the contract as containing one cleaning job at various locations. Their bid was indeed very low: only during the course of the contract did they find out that they incurred a lot of additional costs. To summarise: supplier A lacked technical capabilities, but also the understanding of the need for differentiated service provision. The lack of these capabilities is the main cause of the limited level of success in this contract.

Supplier B in contrast has devoted special attention into setting up an appropriate organizational structure for managing key account DRW. Thereby they incurred increased overhead costs, but also increased their ability to customise their service provision to the wishes of the three internal customers of DRW. Furthermore, by involving different representatives, appropriate management skills were available for each of the cleaning activities. The newly set-up organizational structure has strong links with the communication scheme agreed upon by both companies. This communication involves more than just the quality of service delivery: opportunities for improving the customer experience in trains and at stations are investigated and discussed. Supplier B is of the opinion that the technical quality of service delivery alone is not sufficient: other options to increase customer satisfaction should be explored. The fact that supplier B separates the cleaning of trains overnight from the cleaning of trains at the stations stresses that they understand that the cleaning process at stations (in front of customers) is something different than the cleaning process at stationing premises (away from customers). These processes are also substantially different in terms of for example the kind of activities being performed and the kind of people that perform these activities. Thus, supplier B has developed appropriate capabilities for each of the three types of cleaning, as a result of which the interactions with DRW are more successful.

Then how can we explain that supplier B has so much better capabilities and people resources in place than supplier A, especially in light of the fact that DRW did not approach these two suppliers in a different manner? A plausible explanation for this comes from the fact that supplier B had been performing all three cleaning activities in the region for which they were awarded the joint contract for a long time already. As such, over time, they were able to gradually build up the required skills and competencies, and grew to better understand DRW and their requirements and behaviours. That the fact that having an ongoing relationship may explain these findings is also underlined by supplier A: *“A long-term contract benefits both parties: you know each other, you know the contract, you know the bottlenecks, et cetera. This leads to a better result.”* – Manager National Accounts supplier A. It may also be possible that supplier B is more innovative in terms of how they wish to approach the market and differentiate their value-creating activities for their customers.

CONCLUSIONS AND LIMITATIONS

This paper has presented the results of an embedded case study in which three cleaning services, which belong to different classes in the classification of Wynstra et al. [2006], are bundled into a single contract. Within the context of the buying company DRW, the ongoing interactions with two service providers were studied.

We found that the ongoing interactions with supplier A were perceived by DRW as quite problematic, whereas the ongoing interactions with supplier B were considered highly successful. The main cause of these problems were found to be related to (a lack of) capabilities. Whereas supplier B had developed the appropriate capabilities for each of the three types of services they provided, supplier A did not differentiate. For one of the cleaning services, supplier A lacked capabilities altogether. Supplier B in contrast is very experienced in cleaning for DRW, as a result of which they have a thorough understanding of DRW's processes. This shows most evidently from the way that supplier B has organized the DRW account internally (which brings appropriate management skills into the contract), as well as from the fact that they pro-actively try to optimize their cleaning activities performed at stations (either on trains or on the station itself). Overall, supplier B fulfils more value-creating functions than does supplier A.

These findings underline the importance of appropriate supplier capabilities in the ongoing interactions. In case of component and semi-manufactured services, the supplier needs to understand that they are part of customer processes. This case clearly shows the different buyer-seller linkages in the area of service operations management, whereby a mutual, thorough understanding of the buyer's and the supplier's processes is required in order to be successful in terms of ongoing service exchange. Thus, buying companies need to upfront think about how they will use the service and, consequently, about what kind of requirements that puts on the supplier.

Furthermore, the fact the cleaning of (trains at) stations occurs in front of passengers puts additional requirements on the supplier's employees in terms of language, clothing, and general service orientation. These issues should already be included in the service specification, and it certainly should be covered in the list of supplier selection criteria. Aspects like language and clothing are less critical (in terms of a potential harmful effect on customer satisfaction) when buying office cleaning. This is an aspect which DRW can still develop further.

DRW can learn from their experience with supplier B and try to input these learnings into new tender trajectories. Taking into account issues like customer orientation and clothing when specifying cleaning services for trains and stations may result in both DRW and the newly contracted suppliers to differentiate their cleaning activities more clearly from the very beginning.

The classification and the associated 'ideal' patterns of interaction can be used to (further) develop appropriate interfaces and interactive processes.

A limitation of this study is that only a few supplier representatives have been interviewed. Conducting multiple interviews with suppliers, for example with the people involved in the operational processes, would have enabled some data source triangulation [Yin, 2003]. Interviews with object leaders may provide additional insights regarding for example the coordination of various cleaning activities and the appropriateness of performance criteria used. Perhaps talking to cleaners would also have value.

Although we acknowledge that conducting more interviews may increase the validity of our findings, it seems that the current informants have a fairly good overview of what goes on in the daily processes. Furthermore, the data from these interviews could be compared with data from DRW. Therefore, in this study, this limitation is not deemed too problematic.

Appendix H Related publications

Journal articles

- Van der Valk, W. and Rozemeijer, F. "Buying Business Services: Towards a Structured Service Purchasing Process", *Journal of Services Marketing*, forthcoming.
- Van der Valk, W. "Service Procurement in Manufacturing Companies: Results of Three Embedded Case Studies", *Industrial Marketing Management*, forthcoming.
- Dittrich, K., Jaspers, F., Van der Valk, W. and Wynstra, F. (2006). "Dealing with dualities", introductory article to the IMP 2005 Special Issue of *Industrial Marketing Management*, Vol. 35, Iss. 7, 792-796.
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- Van der Valk, W. and Wynstra, F. (2005). "Supplier Involvement in New Product Development in the Food Industry", *Industrial Marketing Management*, Vol. 34, Iss. 7, 681-694.

Book chapters

- Van der Valk, W. and Wynstra, F. (2007). "Case Study 5, Theory-building Research: Building Propositions About the Kind of Company Representatives Involved in Communication with Providers of Business Services". In: J. Dul and T. Hak (Eds) 2007, *Case Study Methodology in Business Research (197-207)*, Elsevier, Butterworth-Heinemann.
- Van der Valk, W., Wynstra, F. and Axelsson, B. (2006). "Strategische Segmentatie bij de Inkoop van Zakelijke Diensten". In: H.J. van den Hoogen en S.C. Santema (Eds) 2006, *Van Inkoop naar Ondernemen (69-92)*, NEVI, Zoetermeer.
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- Bals, L., Van der Valk, W., Wynstra, F. and Hartmann, E. (2007). "Purchasing Agency Services: Aligning Intra and Inter Organizational Interests for

- Performance Improvement". In: Lamming, R. (Ed) 2007. *Purchasing and Supply Research: Practice makes Perfect*, Proceedings of the 16th annual IPSERA conference, 1-4 April, Bath, United Kingdom: CIPS.
- Van der Valk, W., Wynstra, F. and Axelsson, B. (2007). "Bundling different types of services: Comparing Two Cases with Differing Success". In: Lamming, R. (Ed) 2007. *Purchasing and Supply Research: Practice makes Perfect*, Proceedings of the 16th annual IPSERA conference, 1-4 April, Bath, United Kingdom: CIPS.
- Van der Valk, W., Wynstra, F. and Axelsson, B. (2007). "Ongoing Buyer-Seller Interaction in Business Services: Including the Perspective of Service Providers". In: Naudé, P., Zolkiewski, J. and Henneberg, S. (Eds) 2007. *Exploiting the b2b knowledge network: new perspectives and core concepts*, 23rd Annual IMP Conference, 30 August - 1 September, Manchester, United Kingdom.
- Van der Valk, W., Wynstra, F. and Axelsson, B. (2007). "Testing a Theory of Effective Buyer-Seller Interaction during Ongoing Service Exchange". In: Solomon, G. (Ed) 2007. *Doing well by doing good*, 2007 Annual Meeting Proceedings, Academy of Management, 3-8 August, Philadelphia, PA, United States.
- Tate, W.L. and Van der Valk, W. (2006). "Managing Call Center Performance: Shifting the Focus from Operational Efficiency to Strategic Asset Management". In: Croom, S., Carter, P. and Day, M. (Eds) 2006. *Creating and Managing Value in Supply Networks*, Proceedings of the 15th annual IPSERA conference, San Diego, California. San Diego: University of San Diego.
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- Van der Valk, W., Wynstra, F. and Axelsson, B. (2004). "Identifying Interaction Patterns in the Development of Business Services". In: Ritter, T. and Freytag, P. (eds) 2004. *Interacting, influencing, strategizing - Where are we heading?*, doctoral consortium of the 20th annual IMP Conference, Copenhagen, Denmark, September 2004.
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Summary

POINTS OF DEPARTURE

Services constitute the main part of economic activity in developed countries around the world, where the service sector accounts for some 70% of aggregate production and employment in OECD⁵⁰ economies. More specifically, finance, insurance and business services account for about 20 to 30 percent of value added in the total economy⁵¹.

Consequently, the purchase of business services has become a substantial element in firms' total acquisition of external resources. This partly comes from increased specialisation, growth of the knowledge economy and outsourcing of service-related activities, which cause the growth in services in general. Partly, it is due to the growing 'servitisation' of goods, which causes individual organizations to increasingly buy services rather than goods.

Furthermore, business services are increasingly the focal point of attention for management in many organisations: on the one hand because Non Product Related items (a large part of which consists of services) are seen an area where substantial savings can be obtained, on the other hand since organisations are acknowledging that many of the services they buy (e.g. consultancy, IT, marketing) are actually quite strongly related to their primary processes.

The topic of buying business services is however only just emerging as an area of academic interest. The number of publications in this area is growing, but has been limited in comparison with literature available on buying (industrial) goods. Furthermore, one of the main characteristics of (business) services is the fact that they are produced and consumed in interactive processes between buyers and sellers. These ongoing interactions, as opposed to the transactional purchasing process, have largely been neglected in research on buying business services.

The research that has been dealing extensively with services and the interactions involved are the services marketing and more recently the services management disciplines; however, since long time, these disciplines have focused on consumer services. In light of the increasing importance of business services, also these disciplines are broadening their scope to include business services.

The main objective of this research is to build and test theory on the ongoing interactions between buyers and sellers of various kinds of business

⁵⁰ OECD is the abbreviation for Organisation for Economic Co-operation and Development.

⁵¹ Business services include amongst others rental of equipment and machinery; computer related activities and Research and Development.

services. As such, this research addresses the gap in purchasing and supply management literature regarding ongoing buyer-seller interaction. The first question that arises is to what extent different interfaces and interaction processes between buyers and suppliers of business services exist. Important areas of attention are Decision Making Unit (DMU) /Problem Solving Unit (PSU) structures (including boundary spanning roles), coordination mechanisms and communication processes (including what important issues are discussed in the buyer-seller dialogue) and critical supplier and customer capabilities in managing the interaction. A second research question is concerned with what interactions are most effective for a specific type of service. After developing an understanding of the first two research questions (theory building), the last part of this research aims at validation of these insights (theory testing).

Theory building occurs through multiple empirical studies, in which the theory regarding variation in interaction is gradually built and tested. These empirical studies have been designed in a way that enhances analytical generalisation beyond specific companies or industries. Both service providers and manufacturers, with different kinds of production and different kinds of customers are involved. Furthermore, the studies involve multiple buying company business representatives, thereby enabling an analysis of the purchase of business services from an intra-organisational perspective.

THEORETICAL UNDERPINNINGS

First, a literature study was conducted to investigate the extant body of knowledge in the area of buying business services. This study showed that the scarce literature that is available focuses mainly on the initial stages of the transactional purchasing process (i.e. supplier selection): the ongoing interactions between buyers and sellers have remained largely unaddressed. Furthermore, these studies have mainly addressed one specific type of services. This focus on specific kinds of business services rather than on business services in general hinders the identification of generic patterns of ongoing interaction across the wide variety of services that organizations buy. Therefore, the focus for this research was on theories relating to these ongoing dealings between buyers and sellers, both within specific service encounters (or exchanges) and across service encounters (the ongoing business relationship). The Interaction Approach can be used to conceptualise these interactions. Variation in interaction first of all comes about in the key objective of interaction. Consequently, this puts requirements on the resources needed from both buyer and seller, in terms of the functional representatives involved and of buyer and supplier capabilities. The key objectives, functional representatives and capabilities are rather structural variables relating to the buyer-seller interface. Concerning interactive processes, communication is

studied (including the key issues in the dialogue, which is strongly related to the key objectives and which functional representatives are involved) as well as adaptations (what kind of relation-specific investments/ changes buyer and seller make). Services marketing literature furthermore extensively deals with related topics like quality management and service delivery, which help to obtain a better understanding of what exactly goes on in service exchange episodes.

Another area of attention in this research was to identify factors driving variation in interaction between buyers and sellers of business services. These driving factors can then be used to identify several groups of services for which effective interaction is likely to differ. Existing classifications of business services usually adopt a service provider's perspective. Classifications of consumer services are abundant in services marketing literature; however, consumer goods (and services) are usually differentiated based on how they are purchased, whereas industrial goods (and business services) are typically differentiated based on how they are used by the buying firm. This differentiating factors echoes a driving factor brought forward in Interaction Approach studies into the ongoing interactions between buyers and sellers of industrial goods, which is the way in which the buying company uses the industrial good with respect to its own offerings. Based on this usage-dimension, a classification of business services was developed identifying four types of services:

- Component services, which are passed on to customers of the buying firm unaltered (i.e. luggage handling at the airport for an airline);
- Semi-manufactured services, which are used by the buying firm as part of their offering to the buying firm's customers (i.e. catering on the planes of an airline);
- Instrumental services, which are used by the buying firm to change the way in which their primary processes are carried out (i.e. management consultancy to professionalise the purchasing department of an airline);
- Consumption services, which are used in various support processes in the buying company (i.e. cleaning of the office buildings of an airline).

To emphasise the origin and foundations of this classification, the labels used largely resemble the labels used in the Interaction Approach studies. Furthermore, Organizational Buying Behavior literature points out buyer-perceived risk as a main factor driving buying behaviour. The usage-dimension was selected as the main driving factor for the way in which distinct buyer-seller interfaces and interactive processes were designed (form of interactions); buyer-perceived risk was included as an analysis control that could help explain the extent to which distinct buyer-seller interfaces and interactive processes were designed.

BUILDING A THEORY OF EFFECTIVE BUYER-SELLER INTERACTION

The usage-based classification of business services was used in several empirical studies into the ongoing interactions between buyers and sellers of business services. Starting from the classification, the conceptualisation of interaction and the results of some exploratory studies into the presence of systematic variation in interaction, a first exploratory study comprised four services from three classes of the classification and with varying degrees of buyer-perceived risk at a manufacturing company. A second exploration comprised nine services from all four classes of the classification at two service providing buying companies. A third step in theory building involved the study of a successful and an unsuccessful service purchase for each of the four service types. Success here relates to the ongoing service exchange and was operationalised as the buying company's level of satisfaction with the interaction process and the interaction outcome (i.e. result of interaction) relative to their expectations in advance of the purchase decision.

The results suggest that the level of perceived risk influences the extent to which distinct interfaces and interaction processes are defined and designed. The level of perceived risk affects the extent to which different patterns of interaction can be identified: patterns are more clear for services characterised by high risk. Furthermore, these different theory-building activities have resulted in the development of effective ('ideal') patterns of interaction for each of the four types of business services⁵²:

- In the effective pattern for component services, the key objective is to make sure that the service to be purchased fits with existing service offerings. People knowledgeable about (end) customer requirements (marketing, or even from customers themselves) are involved in the ongoing interactions. The buying company translates these customers' requirements, and coordinates and synchronizes the various elements of the service purchased with their own offerings. The supplier matches capacity with demand and deals with the buying company's customers in the way the buying company wants them to. Communication concerns the requirements of customers, the fit of the service with the rest of the offering, and the customers' evaluation of the service.
- For semi-manufactured services, the key objective is to make sure that the service to be purchased becomes an integral part of the buying company's offering to its customers. Like with component services, representatives of these customers are involved. Also production representatives are involved because the service has to be transformed for and adapted to the buying company's processes rather than just its offerings. The buying company explains its processes and specific requirements to the supplier and

⁵² Since no systematic variation was found with regard to adaptations, this process is not included in the descriptions of effective patterns of interaction.

understand the service provider's offering and how it can be transformed. The supplier understands how their service is transformed; also, delivery reliability is highly important. Communication for semi-manufactured services mostly concerns customer requirements and the fit between the buyer and the suppliers (service) production processes.

- For instrumental services, the key objective is to achieve the desired effect/change in the buying company's primary processes. Business development and process representatives are primarily involved in the ongoing interactions. The buying company is able to specify the desired change to certain processes; the supplier understands how the service will result in the desired effect on the buying company's primary processes. Project management/ implementation skills are highly important buyer/ supplier capabilities. Trends and developments inside the buying company and the supply market are an important topic in the communication, as to align both parties both in the short and in the long term.
- Finally, for consumption services, the key objective of interaction is to have the service fit with various support processes. The buying company is able to find good representation of the internal customers/ users of the service (which may be any functional department or all), and to clearly communicate their requirements. The supplier is able to develop efficient routines and to adjust its service to the specific situation of the buying company. Communication mostly concerns the daily activities and opportunities for improvement.

TESTING A THEORY OF EFFECTIVE BUYER-SELLER INTERACTION

The final round of empirical studies concerned testing the theory developed by investigating the relationship between the pattern of interaction and success in the ongoing service exchange. As a first step, a stringent relationship between interaction and success was opted for, thereby posing the effective pattern of interaction to be a necessary condition for success. Thus, in order to be successful in the ongoing service exchange, buying companies need to have a pattern of interaction that is (highly) similar to the effective pattern of interaction for that specific service type. This test is performed by means of case studies, whereby selection took place with regard to a specific value of the dependent variable (as opposed to sampling for variation in the dependent variable), i.e. success. Data had been collected on twenty-eight service purchases (both low and high risk) from nine buying companies, twenty-five of which were successful. It was then verified whether these successful cases also had interaction patterns that were highly similar to the effective patterns. This was the case but for one of the service purchases studied: for this case, the hypothesis that having a pattern close to the effective pattern of interaction is necessary for success is not rejected. Further analysis

of this service purchase however led to the conclusion that this outlier could be accounted for the level of low risk involved: as a result, the service purchase was sufficiently successful despite the low fit between the observed and the effective pattern of interaction. In succession, the necessary condition hypothesis was tested for the individual service types. Non-trivial necessary conditions were found for component and consumption services. Non-trivialness of the necessary condition could not be established for instrumental services. Effective interaction is not a necessary condition for successful ongoing exchange of semi-manufactured services.

MANAGERIAL RELEVANCE AND RECOMMENDATIONS

The classification of business services in combination with the effective patterns of interaction for each service make up a typology of effective buyer-seller interaction. This typology can be used by purchasing professionals (managers and consultants alike) to design new and improve existing interactions with their providers of business services. In the first situation, buying companies need to identify how they will use the service in order to determine appropriate key objectives and accordingly involve the relevant functional representatives in the ongoing interactions as well as develop the required capabilities to manage this interaction. Simultaneously, the buying company should look for appropriate capabilities on the side of the supplier. In the second situation, the typology can be used to audit and where necessary improve existing interactions with sellers of business services. Service providers can equally use this typology to analyse how each individual buying company applies their service, in order to address the right issues and people in its marketing, sales and exchange processes with the buying company.

The research has furthermore identified a number of leveraging factors that help to be successful in the ongoing service exchange. The first of these factors is drawing up a specification with a sufficient level of detail. What level is sufficient is hard to say, but identifying all relevant stakeholders results in a more complete specification and furthermore includes how buyer and supplier will deal with each other during the contract period, both with regard to service delivery and the surrounding management processes. The second facilitating factor is active involvement from the side of the buying company in the start-up phase of the contract. Rather than leaving the supplier to perform their job, the service exchange is more successful if the buying company in the beginning actively monitors the daily dealings, so that any disturbances that occur can be eliminated and buyer and supplier remain aligned. A third facilitating factor is active contract management throughout the contract period: after the intensive start-up, the buying company should continue to monitor the contract. Finally, related to specifications, mutual and mutually agreed Key Performance Indicators and targets should be developed,

which will be evaluated jointly at predetermined moments. It should be noted that some of these factors are strongly related to the initial stages of purchase process (i.e. specification and contracting). The extent to which these facilitating factors can be leveraged was found to strongly depend on the service-specific dimension of who to involve in the ongoing interactions.

Finally, the rich descriptions of the large number of cases studied furthermore provides a variety of insights regarding difficulties associated with the transactional purchasing process for business services, as well as a range of best practices on how to cope with those difficulties. Examples are difficulties in specifying services (specifically professional services), performance measurement in services, and buying services through European Tendering. With regard to specifying services, four alternative specification methods could be identified in extant literature: specifying the input, the throughput (process), the output (technical performance) and the outcome (financial performance) specifications. The latter two are the most innovativ, yet also the most common. The empirical studies contain a variety of examples of buying companies using output and sometimes even outcome specifications. This has various advantages, among which making the supplier directly responsible for a certain result and only having to monitor this result (as opposed to the whole process)⁵³. Related to this is the identification of innovative indicators to measure the performance of suppliers. Finally, although the European Tendering procedure is usually viewed as highly complex and tedious, especially for services, the results of the empirical studies in this dissertation show that buying companies that do most of the work upfront (before making a purchase decision) have less problems during the contract period. This is explained from the fact that these companies have thought about how they will deal with the supplier during the contract period, what problems may occur, how these problems should be solved, et cetera. The European Tender procedure, though not simple, obliges companies to perform a lot of such preparatory work. One of the companies, EIA, is obliged by law to use European Tendering for its sourcing activities: at the same time, this company is considered among the most successful in the sample. As such, the findings of this dissertation can be used for reflecting on one's own business processes and making improvements.

⁵³ Disadvantages relate to decreased transparency and uncertainty on whether the supplier is able to handle such specifications.

SCIENTIFIC RELEVANCE AND AREAS FOR FURTHER RESEARCH

This research has addressed three gaps in extant purchasing and supply management literature:

- 1) The research focuses on business services as opposed to consumer services, which have been and continue to be dealt with extensively in services marketing and service management research;
- 2) The research develops the notion of ongoing interactions between buyers and sellers of business services, which has been hardly addressed in purchasing and supply management research;
- 3) The research focuses on generic similarities and differences across various services rather than on specific services.

Despite these merits of the research, a few critical comments need to be raised as well. An important criticism concerns data collection: while some buying companies were rather interested in involving their suppliers in this study, others were quite reluctant to approach suppliers. Consequently, data was collected at buying companies only, which has resulted in a one-sided view of patterns of interaction. The suppliers involved were not asked how they view the interaction with their customers. Including the supplier in future data collection efforts substantiates the findings regarding patterns of interaction and may furthermore result in additional insights regarding the buyer's behaviour as well.

Another limitation arises with regard to one of the data collection methods (self-administered questionnaire). Not all questionnaires were returned, as a result of which the data obtained through this method is not complete. A final limitation is related to the fact that our sample of cases is not equally distributed across all classes of the classification. Although the initial objective was to have a component, a semi-manufactured, an instrumental and a consumption service at each of the ten participating buying companies, it turned out to be difficult to for example identify component services at manufacturing companies. Thus, for some of the service types, the findings are based on a limited number of observations.

Based on the results of this research, several areas for future research can be identified. First, continuing along the lines of research employed in this dissertation, future research could be aimed at obtaining a more detailed understanding of the mechanisms underlying how a more effective pattern of interaction results in success. Among the successful cases, quite some differences arose with regard to the degree of similarity between the observed and the effective patterns and success. An example of this is the case in which a relatively low degree of fit results in a relatively high degree of success. By investigating in more detail what goes on in the 'similarity, success' quadrant, it may be possible to uncover for example which of the underlying dimensions of the patterns of interaction drives success most strongly.

Two other areas in which the typology may be of use is the area of new (business) service development and supply chain management in business services. The first has received rather little attention in comparison to new product development, despite the fact that the specific characteristics of services warrant specific research in this area. Also the phasing and activities that constitute the service development process and the actors involved in this process have not been investigated in large detail. The importance of buyer-supplier interaction in the development of new and/ or improved business services comes from the fact that the service customer acts as a co-producer in the service delivery process. Consequently, the customer can play a valuable role in new service development by contributing to the creation of the right generic prerequisites for the service: the service system, the service process and specifically the service concept (think of the concept of 'lead user' involvement in product development). One way in which the typology could be of help is in obtaining a better understanding of which actors (i.e. end customers versus internal users) to involve in the new service development process. A second way could be using the typology as a framework for designing the service process in relation to the service concept, and subsequently putting an appropriate system in place.

The second area in which the typology can be used is the area of Supply Chain Management, which is specifically relevant for the two service types that are being passed on to the buying company's customers. The typology could be used to identify common problems and solutions for services belonging to these two classes of the classification rather than applying concepts of goods supply chains to the area of services.

Samenvatting

UITGANGSPUNTEN

Diensten maken het overgrote deel uit van de economische activiteiten van ontwikkelde landen over de gehele wereld. In OECD⁵⁴ economieën is de dienstensector verantwoordelijk voor zo'n 70% van de algehele productie- en arbeidsactiviteit. Het zijn specifiek financiële dienstverlening, het verzekeringswezen en zakelijke dienstverlening die samen voor 20 tot 30% waardevermeerdering in de totale economie zorgen⁵⁵.

Hierdoor heeft ook de inkoop van dienstverlening een steeds prominenter plaats ingenomen in het totale inkooppakket van veel ondernemingen. Deels wordt deze verandering veroorzaakt door toegenomen specialisatie, de groei van de kenniseconomie en het uitbesteden van dienstgerelateerde activiteiten, die leiden tot een toename in diensten in het algemeen. Deels is het ook het gevolg van de toenemende 'verdienstelijking' van goederen, wat ertoe leidt dat organisaties in steeds grotere mate diensten kopen in plaats van goederen.

Daarnaast krijgt zakelijke dienstverlening in veel organisaties steeds meer aandacht van het management: enerzijds omdat niet-product-gerelateerde inkoop (wat voor een groot deel diensten betreft) wordt gezien als een gebied waarin aanzienlijke besparingen te realiseren zijn, anderzijds omdat organisaties erkennen dat veel van de diensten die zij inkopen (zoals consultancy, IT en marketing) eigenlijk sterk gerelateerd zijn aan de primaire processen van de organisatie.

Het onderwerp inkoop van zakelijke diensten is echter nog maar net in opkomst als wetenschappelijk aandachtsgebied. Het aantal publicaties over dit onderwerp groeit, maar is beperkt in vergelijking met publicaties over de inkoop van (industriële) goederen. Bovendien wordt het feit dat diensten worden geproduceerd en geconsumeerd in interactieve processen tussen klanten en leveranciers aangeduid als een van de kenmerkende karakteristieken van (zakelijke) diensten. In tegenstelling tot het transactionele inkoopproces is deze voortdurende interactie grotendeels verwaarloosd in onderzoek naar de inkoop van zakelijke diensten.

Onderzoek dat zich in sterke zin met diensten en de interacties die daarbij komen kijken bezighoudt komt uit de dienstenmarketing en dienstenmanagement disciplines; echter, deze disciplines richten zich al geruime tijd voornamelijk op diensten voor consumenten. In het licht van het

⁵⁴ OECD is de afkorting voor Organisation for Economic Co-operation and Development (in het Nederlands: de Organisatie voor Economische Samenwerking en Ontwikkeling).

⁵⁵ Onder zakelijke dienstverlening vallen onder andere het huren van apparatuur en machines, computer-gerelateerde activiteiten en Research en Development.

groter wordende belang van zakelijke diensten zijn ook deze disciplines bezig hun aandachtsgebied te vergroten om zo zakelijke diensten hieraan toe te voegen.

De belangrijkste doelstelling van dit onderzoek is het bouwen en testen van theorie over de voortdurende interactie tussen klanten en leveranciers van verschillende soorten diensten. Op deze manier vult dit onderzoek het gat in de inkoopliteratuur aangaande voortdurende klant-leverancier interactie. De eerste vraag hierbij is in welke mate er verschillende interfaces en interactieprocessen bestaan tussen klanten en leveranciers van zakelijke diensten. Belangrijke aandachtsgebieden hier zijn de besliseenheid aan de kant van de kopende partij en de probleem-oplossingseenheid aan de kant van de leverancier (inclusief grensoverschrijdende rollen); coördinatie mechanismen en communicatie processen (inclusief de voornaamste onderwerpen in de dialoog tussen klant en verkoper); en kritische capaciteiten/ vaardigheden voor de leverancier en voor de kopende partij ten aanzien van het managen van de interactie. Een tweede vraag betreft welke interacties het meest effectief zijn voor een specifiek type dienst. Nadat begrip van deze zaken is verkregen (theorie bouwen), richt het laatste deel van dit onderzoek zich op validatie van deze inzichten (theorie testen).

Het bouwen van theorie vindt plaats middels meerdere veldstudies, waarin theorie over variatie in interactie geleidelijk aan wordt ontwikkeld en getest. Deze veldstudies zijn zo ontworpen dat analytische generalisatie over specifieke bedrijven of industrieën heen mogelijk is. Zowel dienstverleners als productiebedrijven, met verschillende soorten productieprocessen en verschillende soorten klant, nemen deel aan het onderzoek. Verder omvatten de studies meerdere vertegenwoordigers van de kopende organisatie, waardoor een analyse van de inkoop van zakelijke diensten vanuit een intra-organisatieel perspectief mogelijk wordt gemaakt.

THEORETISCHE GRONDEN

Om te beginnen is een literatuurstudie uitgevoerd naar de beschikbare kennis op het gebied van de inkoop van zakelijke diensten. Deze studie toonde aan dat er een beperkte hoeveelheid literatuur is die zich met name richt op de initiële fasen van het transactionele inkoopproces (bv. leveranciersselectie): de voortdurende interactie tussen klanten en leveranciers heeft nog weinig aandacht gekregen. Daarnaast richt de bestaande literatuur zich vooral op een specifiek type dienst. Deze aandacht voor specifieke soorten zakelijke diensten in plaats van op zakelijke diensten in het algemeen bemoeilijkt de identificatie van generieke patronen van voortdurende interactie over de grotere variëteit van diensten die organisaties inkopen heen. In dit onderzoek is daarom de nadruk gelegd op theorie aangaande deze voortdurende handelingen tussen klanten en leveranciers, zowel binnen transacties (gelijktijdige productie en consumptie van diensten) als er overheen (de voortdurende klant-leverancier

relatie). De Interactie Benadering kan worden gebruikt om deze interacties te conceptualiseren. Variatie in interactie is in eerste instantie merkbaar in de kerndoelstelling van de interactie. Dit heeft vervolgens consequenties voor welke eigenschappen/ eigenschappen, in termen van functionele betrokkenheid en capaciteiten/ vaardigheden van klant en leverancier, nodig zijn aan beide kanten van de relatie. Wat betreft interactieve processen worden communicatie (inclusief de belangrijkste onderwerpen in de dialoog, die sterk gerelateerd zijn aan de kerndoelstellingen van en aan welke functies betrokken zijn in de interactie) en adaptatie (wat voor relatiespecifieke investeringen/ veranderingen worden door klant en/of leverancier gedaan) bestudeerd. Dienstenmarketing literatuur richt zich sterk op gerelateerde onderwerpen als kwaliteitsmanagement en levering van de dienst, wat helpt een beter begrip te krijgen van wat er precies gebeurt in diensttransacties.

Een ander aandachtsgebied in dit onderzoek betrof het identificeren van factoren die kunnen leiden tot variatie in interactie tussen klanten en leveranciers van zakelijke diensten. Deze factoren kunnen vervolgens worden gebruikt om verschillende groepen van diensten te identificeren, waarvoor wordt verwacht dat verschillende patronen van interactie het meest effectief zullen zijn. Bestaande classificaties van zakelijke diensten hebben veelal een verkoperperspectief. Classificaties van consumenten diensten zijn er in overvloed in de dienstenmarketing literatuur; echter, consumenten goederen (en diensten) worden vaak gedifferentieerd op basis van hoe ze worden ingekocht, terwijl industriële goederen (en zakelijke diensten) onderscheiden worden op basis van hoe ze worden gebruikt door de kopende partij. Deze onderscheidende factor is vergelijkbaar met een factor benadrukt in studies gebaseerd op de Interactie Benadering naar de voortdurende interactie tussen klanten en leveranciers van industriële goederen, namelijk hoe de kopende organisatie het product gebruikt in relatie tot zijn aanbod aan (eind) klanten. Deze gebruiksdimensie leidt tot een classificatie van zakelijke diensten bestaande uit vier typen diensten:

- Component diensten, die onveranderd worden doorgeleverd aan klanten van de kopende organisatie (bv. bagageafhandeling op het vliegveld voor een luchtvaartmaatschappij);
- Halffabriekdiensten, die deel gaan uitmaken van het aanbod aan de klanten van de kopende organisatie (bv. catering voor de vliegtuigen van een luchtvaartmaatschappij);
- Instrumentele diensten, die door de kopende organisatie worden gebruikt om de manier waarop zij hun primaire processen uitvoeren te veranderen (bv. management consultancy om de inkoopafdeling van een luchtvaartmaatschappij te professionaliseren);
- Consumptiediensten, die worden gebruikt in verschillende ondersteunende processen binnen de kopende organisatie (bv. schoonmaak voor de kantoorgebouwen van een luchtvaartmaatschappij).

Om de oorsprong en onderliggende gedachten van deze classificatie te benadrukken zijn de gebruikte labels sterk in overeenstemming met de labels gebruikt in de Interactie Benadering. Daarnaast suggereert literatuur aangaande Organisationeel Inkoop Gedrag dat het risico, zoals gepercipieerd door de kopende organisatie, een belangrijke invloed heeft op inkoopgedrag van organisaties. De gebruiksdimensie is geselecteerd als de voornaamste beïnvloedende factor voor verschillende ontwerpen van de klant-leverancier interface en interactieve processen (vorm van de interactie); risico zoals gepercipieerd door de kopende partij is meegenomen als een factor waarvoor in de analyse gecontroleerd moet worden, omdat de mate waarin verschillende ontwerpen van de klant-leverancier interface en interactieve processen worden ontworpen kan helpen verklaren.

HET BOUWEN VAN THEORIE OVER EFFECTIEVE INTERACTIE

De gebruiksgebaseerde classificatie van zakelijke diensten is gebruikt in meerdere veldstudies naar de voortdurende interactie tussen klanten en leveranciers van zakelijke dienstverlening. Met de classificatie, de conceptualisatie van interactie en de resultaten van een aantal verkennende studies naar het bestaan van systematische variatie in interactie als startpunt, omvatte een eerste verkennende studie vier diensten uit drie klassen van de classificatie en variërend in risico bij een productiebedrijf. Een tweede exploratie betrof negen diensten uit alle klassen van de classificatie bij twee dienstverlenende (kopende) partijen. In een derde stap zijn een succesvolle en een niet-succesvolle dienst voor elk van de vier typen met elkaar vergeleken. Succes komt tot stand in de voortdurende productie en consumptie van diensten en is geoperationaliseerd als de tevredenheid van de kopende organisatie met het interactieproces en de interactie uitkomst (resultaat van interactie) in vergelijking met de verwachtingen voorafgaand aan de inkoopbeslissing.

De resultaten laten zien dat het risico zoals gepercipieerd door de kopende partij invloed heeft op de mate waarin verschillende interfaces en interactieprocessen gedefinieerd en ontworpen worden. Risico beïnvloedt de mate waarin verschillende interactiepatronen kunnen worden geïdentificeerd: patronen zijn sterker for diensten die gekenmerkt worden door een hoog risico. De theoriebouwende activiteiten hebben uiteindelijk geleid tot de ontwikkeling van effectieve ('ideale') interactiepatronen voor elk van de vier diensttypen⁵⁶:

- In het effectieve patroon voor componentdiensten is de kerndoelstelling het waarborgen van de passendheid van de in te kopen dienst bij het bestaande dienstaanbod van de kopende organisatie. Mensen met kennis van (eind)

⁵⁶ Omdat er geen systematische variatie is gevonden voor adaptatie maakt dit proces geen deel uit van de beschrijving van effectieve interactiepatronen.

klantwensen en –eisen (marketing, of zelfs de klanten zelf) zijn betrokken in de voortdurende interactie. De kopende partij vertaalt de klantwensen en –eisen, en coördineert en synchroniseert de verschillende elementen van de ingekochte dienst met het eigen aanbod. De leverancier zorgt dat het aanbod voldoende is voor de vraag en gaat om met de klanten van de kopende organisatie zoals de kopende organisatie dat graag ziet. Communicatie betreft de wensen en eisen van klanten, de mate waarin de dienst bij het bestaande aanbod past en de manier waarop de (eind) klant de dienst waardeert.

- Voor halffabriekdiensten is de kerndoelstelling te waarborgen dat de ingekochte dienst een integraal deel uit gaat maken van het aanbod van de kopende organisatie aan zijn klanten. Net als met componentdiensten zijn hier vertegenwoordigers van klanten betrokken in de interactie. Ook worden productievertegenwoordigers geïnvolveerd omdat de dienst moet worden getransformeerd voor en aangepast aan de processen van de kopende organisatie in plaats van alleen aan diens aanbod. De kopende organisatie legt zijn processen en specifieke eisen uit aan de leverancier en begrijpt de dienst van de leverancier en hoe die getransformeerd kan worden. De leverancier begrijpt ook hoe zijn dienst wordt getransformeerd; daarnaast is leverbetrouwbaarheid van groot belang. Communicatie betreft voornamelijk eisen/ wensen van klanten en de passendheid van de (dienst) productieprocessen van de koper en de leverancier.
- Voor instrumentele diensten is de kerndoelstelling het bereiken van het gewenste effect op of de gewenste verandering in de primaire processen van de kopende partij. De kopende partij is in staat om de gewenste verandering voor een bepaald proces te specificeren; de leverancier begrijpt hoe de dienst die hij levert resulteert in het gewenste effect op de primaire processen van de kopende organisatie. Project management/ implementatievaardigheden zijn zeer belangrijke vaardigheden voor de klant/ leverancier. Trends en ontwikkelingen binnen de kopende organisatie en de leveranciersmarkt zijn een belangrijk onderwerp in de communicatie, om zo de beide partijen op een lijn te brengen en te houden, zowel op de korte als op de langere termijn.
- Tenslotte is voor consumptiediensten de kerndoelstelling te zorgen dat de dienst past bij verschillende ondersteunende processen. De kopende organisatie is in staat goede vertegenwoordiging te vinden van de interne klanten/ gebruikers van de dienst (dit kan elke functionele afdeling betreffen, of allemaal), en om hun eisen/ wensen duidelijk te communiceren. De leverancier is in staat efficiënte routines te ontwikkelen en de dienst aan te passen aan de specifieke situatie van de kopende partij. Communicatie betreft vooral de dagelijkse activiteiten en verbetermogelijkheden.

HET TESTEN VAN THEORIE AANGAANDE EFFECTIEVE INTERACTIE

De laatste ronde van empirisch onderzoek betrof het testen van de ontwikkelde theorie middels het onderzoeken van de relatie tussen het interactiepatroon en succes gedurende de periode van voortdurende productie en consumptie van diensten (contractperiode). In een eerste stap is gekozen voor een strenge relatie tussen interactie en succes, waarbij de ontwikkelde ideaalpatronen werden beschouwd als noodzakelijke voorwaarden voor succes. Dus, om succesvol te kunnen zijn gedurende de contractperiode hebben kopende organisaties een interactiepatroon nodig dat (in sterke mate) gelijk is aan het ideaalpatroon voor dat specifieke diensttype. Deze test is uitgevoerd op basis van case studies, waarbij cases zijn geselecteerd op basis van een specifieke waarde van de afhankelijke variabele (in tegenstelling tot het selecteren van cases met een bepaalde spreiding in de afhankelijke variabele), namelijk succes. Dataverzameling had plaatsgevonden voor achtentwintig dienstinkopen (met zowel laag als hoog risico) van negen ondernemingen, waarvan er vijfentwintig succesvol waren. Vervolgens is geverifieerd of deze succesvolle cases ook een interactiepatroon hadden dat sterk lijkt op het ideaalpatroon. Dit was het geval, met uitzondering van één dienstinkoop: voor dit geval werd de hypothese dat een patroon dat sterk lijkt op het effectieve patroon noodzakelijk is voor succes verworpen. Nadere analyse van deze dienstinkoop leidde echter tot de conclusie dat deze uitzondering verklaard kan worden door het lage risico dat met de dienst gepaard gaat: hierdoor werd de dienstinkoop als voldoende succesvol beschouwd, ondanks dat er een lage fit was tussen het geobserveerde en het effectieve interactiepatroon. Vervolgens is de noodzakelijke voorwaarde hypothese getest voor de individuele diensttypen. Niet-triviale noodzakelijke voorwaarden werden gevonden voor component- en consumptiediensten. De niet-trivialiteit van de noodzakelijke voorwaarde kon niet worden vastgesteld voor instrumentele diensten. Effectieve interactie is geen noodzakelijke voorwaarde voor succes voor halffabriekdiensten.

PRAKTISCHE RELEVANTIE EN AANBEVELINGEN

De classificatie van zakelijke diensten en de effectieve interactiepatronen voor de verschillende typen diensten resulteren samen in een typologie van effectieve klant-leverancier interactie. Deze typologie kan worden gebruikt door inkoop professionals (zowel door managers als door adviseurs) ten behoeve van het ontwerpen van nieuwe en verbeteren van bestaande interacties met leveranciers van dienstverlening. In het eerste geval moet de kopende organisatie bepalen hoe de dienst zal worden gebruikt, om aan de hand daarvan te bepalen wat de kerndoelstellingen zijn en welke functionele disciplines betrokken zouden moeten worden in de interactie, alsmede de capaciteiten/ vaardigheden die nodig zijn om de interactie te managen.

Tegelijkertijd moet de kopende organisatie op zoek naar de juiste capaciteiten/ vaardigheden bij leveranciers. In het tweede geval kan de typologie gebruikt worden om bestaande interacties te analyseren en waar nodig verbeteren. Dienstverleners kunnen de typologie op eenzelfde manier gebruiken om te analyseren hoe de klant de in te kopen dienst gebruikt, om vervolgens de juiste onderwerpen te adresseren en de juiste mensen te involveren in de marketing, verkoop en (dienst)leveringsprocessen richting de kopende organisatie.

Daarnaast heeft dit onderzoek een aantal bevorderende factoren geïdentificeerd, die kunnen bijdragen aan een succesvolle contractperiode. De eerste factor is het ontwikkelen van een specificatie op een voldoende detailniveau. Welk niveau voldoende is, is lastig te zeggen, maar het identificeren van alle betrokkenen die op de een of andere manier iets te maken hebben met de dienst resulteert in een completere specificatie, die bovendien omvat hoe de kopende organisatie en de leverancier met elkaar zullen samenwerken gedurende de contractperiode, zowel wat betreft productie/ consumptie van diensten en wat betreft de voortdurende klant-leverancier relatie. De tweede bevorderende factor is actieve betrokkenheid van de kopende organisatie gedurende de opstartfase van het contract, in plaats van te verwachten dat de leverancier gewoon zijn werk doet. De contractperiode is succesvoller naarmate de kopende organisatie vooral in het begin actief de dagelijkse activiteiten in de gaten houdt, zodat eventuele verstoringen kunnen worden weggenomen en klant en leverancier op een lijn blijven. Een derde bevorderende factor is actief contract management gedurende de contractperiode: ook na de intensieve opstartfase moet de kopende organisatie het contract in de gaten blijven houden. Tenslotte moeten, gerelateerd aan de specificaties, wederzijdse prestatie-indicatoren en bijbehorende doelstellingen gezamenlijk worden ontwikkeld, die op vooraf bepaalde momenten gezamenlijk geëvalueerd zullen worden. Het moet opgemerkt worden dat een aantal van deze factoren sterk gerelateerd zijn aan de initiële fasen van het inkoopproces (specificeren en contracteren). De mate waarin deze bevorderende factoren benut kunnen worden is in grote mate afhankelijk van dienstspecifieke dimensie van wie te betrekken in de voortdurende interactie.

Tenslotte verschaffen de gedetailleerde beschrijvingen van het grote aantal cases dat bestudeerd is een aantal inzichten in de moeilijkheden die gepaard gaan met het transactionele inkoopproces voor zakelijke diensten, alsmede in een aantal 'best practices' ten aanzien van hoe met die moeilijkheden kan worden omgegaan. Voorbeelden zijn de moeilijkheden omtrent het specificeren van diensten (in het bijzonder professionele diensten), prestatiemeting in diensten, en het inkopen van diensten middels Europese Aanbesteding. Wat betreft het specificeren van diensten duidt de literatuur vier specificatiemethoden uit: het specificeren van de input, van de throughput (het

proces), de output ('technische' prestatie) en de uitkomst (financiële prestatie). De laatste twee zijn het meest innovatief, maar worden ook het minst gebruikt. De veldstudies bevatten een aantal voorbeelden van organisaties die gebruik maken van output en soms zelfs outcome specificaties. Dit heeft verschillende voordelen, waaronder het verantwoordelijk maken van de leverancier voor een bepaald resultaat en het beperken van de controletaak tot het resultaat van de dienstverlening (in plaats van het gehele proces)⁵⁷. Gerelateerd hieraan is de identificatie van innovatieve prestatie-indicatoren om de prestatie van de leverancier te meten. Tenslotte, ondanks het feit dat de Europese Aanbestedingsprocedures vaak als erg complex en moeizaam worden gezien (vooral wanneer het gaat om diensten), tonen de resultaten van de veldstudies aan dat kopende organisaties die het grootste deel van het werk doen voordat de inkoopbeslissing wordt genomen minder problemen ervaren gedurende de contractperiode. Dit kan worden verklaard door het feit dat deze organisaties al vooraf nadenken over hoe ze samen willen werken met de leverancier, welke problemen zich wellicht voor zullen doen, hoe hiermee omgegaan moet worden, et cetera. De Europese Aanbestedingsprocedure, hoewel niet eenvoudig, verplicht bedrijven bij uitstek om degelijk voorbereidend werk te doen. Een van de bestudeerde ondernemingen, EIA, is wettelijk verplicht om Europees aan te besteden: tegelijkertijd is dit een van de meest succesvolle bedrijven in deze studie. Op deze manier kunnen de bevindingen van dit onderzoek gebruikt worden om te reflecteren op de eigen bedrijfsprocessen en deze te (verder) verbeteren.

WETENSCHAPPELIJKE RELEVANTIE EN VERDER ONDERZOEK

Dit onderzoek heeft drie gaten in de bestaande inkoop- en leveranciersmanagement literatuur geadresseerd:

- 1) Het onderzoek richt zich op zakelijke diensten in plaats van diensten voor consumenten, die het onderwerp zijn en blijven van veel bijdragen op het gebied van dienstenmarketing en -management;
- 2) Het onderzoek ontwikkelt het idee van voortdurende interactie tussen klanten en leveranciers van zakelijke diensten, iets wat nog nauwelijks aandacht heeft gekregen in onderzoek op het gebied van inkoop- en leveranciersmanagement;
- 3) Het onderzoek richt zich op generieke overeenkomsten en verschillen tussen verschillende soorten diensten in plaats van op specifieke diensten.

Ondanks deze verdiensten, zijn er ook een aantal punten van mogelijke kritiek die besproken moeten worden. Een belangrijk punt van kritiek betreft de dataverzameling: terwijl sommige kopende ondernemingen zeer

⁵⁷ Nadelen hebben te maken met afnemende transparantie en onzekerheid over of de leverancier wel in staat is om te gaan met dergelijke specificaties.

geïnteresseerd waren in het betrekken van hun leveranciers in dit onderzoek, waren anderen juist terughoudend op dit gebied. Dit heeft tot gevolg gehad dat data alleen is verzameld bij kopende organisaties, hetgeen resulteert in een eenzijdige kijk op de klant-leverancier interacties die bestudeerd zijn. De leveranciers zijn niet bevraagd over hoe zij de interactie met hun klanten zien. Door leveranciers in toekomstige dataverzamelactiviteiten te betrekken kunnen de huidige bevindingen gestaafd worden; bovendien zouden aanvullende inzichten aangaande het gedrag van de kopende organisatie verkregen kunnen worden.

Een andere beperking heeft betrekking op een van de methoden voor dataverzameling (zelfstandig ingevulde vragenlijsten): omdat niet alle geïntervieweden de vragenlijst hebben geretourneerd is het helaas niet gelukt om complete data te verzamelen. Een laatste beperking heeft te maken met het feit dat de selectie van cases die bestudeerd zijn niet netjes evenredig verdeeld is over de vier klassen van de classificatie. Hoewel de oorspronkelijke doelstelling was het bestuderen van een component-, een halffabriek-, een instrumentele en een consumptieve dienst bij elk van de tien deelnemende kopende ondernemingen, bleek het bijvoorbeeld moeilijk om component- en halffabriekdiensten te vinden bij productiebedrijven. Hierdoor zijn de bevindingen voor sommige diensttypen gebaseerd op slechts een beperkt aantal waarnemingen.

Op basis van de resultaten van dit onderzoek kunnen meerdere mogelijke onderzoeksrichtingen geïdentificeerd worden. Ten eerste, voortbouwend op de lijnen van dit onderzoek, zou verder onderzoek gericht kunnen worden op het verkrijgen van een preciezer begrip van de mechanismen die ten grondslag liggen aan de causale relatie tussen meer effectieve interactie en succes. Wanneer de succesvolle cases worden beschouwd zijn er behoorlijke verschillen te onderkennen tussen de mate van gelijkheid tussen de werkelijke en de effectieve interactiepatronen en succes. Een voorbeeld hiervan is de case waarin een redelijke lage mate van gelijkheid toch leidt tot redelijk wat succes. Door nader te onderzoeken wat er gebeurt in het 'gelijkheid, succes' kwadrant kunnen wellicht inzichten worden verkregen in welke van de dimensies van interactie bijvoorbeeld de grootste invloed heeft op succes.

Twee geheel andere onderwerpen waarbinnen de typologie nuttig zou kunnen blijken zijn de ontwikkeling van nieuwe (zakelijke) diensten en supply chain management voor zakelijke diensten. Het eerste onderwerp heeft slechts beperkte aandacht gekregen in vergelijking met productontwikkeling, ondanks het feit dat de specifieke karakteristieken van diensten het wenselijk maken om onderzoek te doen op dit gebied. Ook de fasen en activiteiten van het dienstontwikkelproces, alsmede wat voor actoren hierbij betrokken zijn, zijn niet uitgebreid onderzocht. Het belang van klant-leverancier interactie bij de ontwikkeling van zakelijke diensten resulteert uit het feit dat de klant een coproducent is van de dienst tijdens de levering van de dienst. Dus, de klant

kan een waardevolle rol spelen bij de ontwikkeling van zakelijke diensten middels een bijdrage aan het creëren van de juiste algemeen condities voor de dienst: het systeem waarop de dienst berust, het proces van dienstverlening, en in het bijzonder het dienstenconcept (denk aan het fenomeen van de ‘lead user’ die betrokken wordt bij productontwikkeling). Eén manier waarop de typologie gebruikt zou kunnen worden is om te begrijpen welke actoren ((eind) klanten of interne gebruikers) betrokken zouden moeten worden in het dienstontwikkelproces. Een tweede manier is het gebruiken van de typologie als een raamwerk voor het ontwikkelen van het proces van dienstverlening in relatie tot het dienstconcept, om dan vervolgens een geschikt systeem te ontwikkelen.

Het tweede onderwerp waarbij de typologie gebruikt zou kunnen worden betreft Supply Chain Management, hetgeen vooral relevant is voor de twee typen diensten die worden doorgegeven aan klanten van de kopende organisatie. De typologie zou gebruikt kunnen worden om gemeenschappelijke problemen en oplossingen voor diensten die behoren tot deze twee klassen van de classificatie te ontwikkelen, in plaats van het slechts toepassen van concepten van goederen supply chains op diensten.

About the author

Wendy van der Valk was born on February 12th, 1979 in Amsterdam, the Netherlands. She obtained her pre-university education at Jeroen Bosch College in 's-Hertogenbosch. In September 1997, she started her university education in Industrial Engineering and Management Science at Eindhoven University of Technology, the Netherlands. She obtained her Master's degree in February 2003 with a thesis on managing early supplier involvement in product development activities. During this project she has worked with companies like PANalytical, Boon Edam, HJ Heinz and Philips Domestic Appliances.

In September 2003 she started her PhD research project at the Erasmus Research Institute of Management/ RSM Erasmus University under supervision of Prof.dr. Finn Wynstra, NEVI Professor Purchasing and Supply Management at RSM Erasmus University, and Prof.dr. Björn Axelsson, holder of the first SILF Chair Purchasing and Supply Management at the Stockholm School of Economics. This project is partly financed by the NEVI (Dutch association for purchasing management).

In her PhD research, she investigated the ongoing interaction between buyers and sellers of business services after the purchase decision has been made. Her research has been published in *Industrial Marketing Management* and the *International Journal of Service Industry Management*.

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Buyer-Seller Interaction Patterns During Ongoing Service Exchange

This dissertation focuses on the ongoing interactions that take place between buyers and sellers of business services after the contract has been signed. This ongoing interaction is important since services are produced and consumed simultaneously; therefore, both buyer and seller have to make an effort to ensure that the ongoing service exchange is successful. We adopt the Interaction Model originally developed by the Industrial Marketing and Purchasing Group for studying buyer-supplier interactions in marketing and purchasing of industrial goods, and adapt this to business services. As such, we bring forward a classification that differentiates between various business services and the required customer-supplier interface and interaction patterns on the basis of how the service is used/ applied in the buying company's business process. The classification distinguishes four types of service application: components, semi-manufactures, instruments and consumables.

In two subsequent series of theory-building case studies, we developed effective patterns of interaction for each of the four service types. As such, the classification of business services has been developed into a typology of effective buyer-seller interaction. We demonstrate that this effective buyer-seller interaction is a necessary condition for successful ongoing service exchange.

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