

Buying Business Services: Analyzing the service buyer - service provider interface

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Abstract

The acquisition of business services is becoming increasingly important for many organizations. However, buying business services has not been studied in much detail and the studies that have been conducted have either focused on one type of service or a specific stage of the purchasing process (i.e. supplier selection). This paper presents the partial results of a series of interview studies into the purchase of business services and the ongoing interactions following a purchase. The paper addresses the interface between service buyers and service providers, more specifically the Decision Making Unit (buying centre). The paper investigates whether the Decision Making Unit varies for different types of services across different types of companies. The results indicate that the Decision Making Unit for component services and consumption services differs; this difference is reasonably consistent across the companies studied. Furthermore, the ways in which the companies studied deal with services and their providers is overall rather successful, which means that the interaction taking place facilitates the exchange of the service and (further) development of the relationship. This would imply that different service purchases require different constitutions of the buying center in order to have functional interaction between buyer and provider.

Keywords: business services, purchasing, interaction, decision-making unit.

Introduction

Services have become a substantial part of organizations' acquisition of external resources. At the same time, various authors have demonstrated that the purchase of services is perceived to be essentially different from the purchase of goods (Jackson et al. 1995; Stock and Zinszer 1987). Fitzsimmons, Noh and Thies (1998) state that when the purchase of services is compared to the purchase of goods, the process for services is more complex.

Services are intangible, inseparable, perishable and heterogeneous: these characteristics affect the purchasing process in the sense that some elements become more important, more difficult or just different in comparison to goods (Axelsson and Wynstra 2002). For example: for services it is often difficult to in advance of the purchase understand precisely the content of the service. This will increase the complexity associated with specification. Given the fact that organizations are buying more and more services, additional research into buying business services is desirable.

This should not be limited to the purchase process. In contrast to goods, the service purchase does not end with the contract, but is extended throughout the period that a supplier provides services to the buying company. Services marketing researchers have been pointing out that services are produced and consumed in interactive processes between the buyer and the seller (Grönroos 2004; Zeithaml and Bitner 1996). This indicates that certainly also after the contract has been signed, suitable buyer-supplier interfaces need to be designed and interaction processes need to be in place to ensure satisfactory service delivery. This implies that attention for the interactions following the purchase is equally important. Recently, Grönroos (2004) pointed out that importance of the service encounter and the customer-service provider interactions it comprises needs to be acknowledged: this interaction should become the main area of interest for services marketing rather than the transfer of the service as such.

Finally, it will be evident that there are many different types of business services (i.e. marketing, financial, HR services, or standardized versus customized services, long- versus short-term services, et cetera (Axelsson and Wynstra 2002). The "ongoing" interaction (interface and interaction process) is expected to differ for different kinds of services. Buying companies are expected to manage an office cleaning service differently than an advertising agency. Therefore, a differentiated approach will be required when buying different types of services.

Unfortunately, to our knowledge, only a limited amount of studies into the specific area of buying business services and more specifically into the interactions following a purchase are available. Studies in this area have either focused on one particular type of services (Lichtenthal and Shani 2000; Mitchell 1994; West 1997), or on a specific stage of the purchasing process (Day and Barksdale Jr 1994).

This paper presents partial results of a field study into the purchase of business services. This field study tries to tackle some of the issues mentioned above by studying the purchase of a wide variety of business services, thereby not only focusing on the stages up to establishing a service level agreement or contract, but specifically also addressing the ongoing interactions between the buyer and the seller of the service.

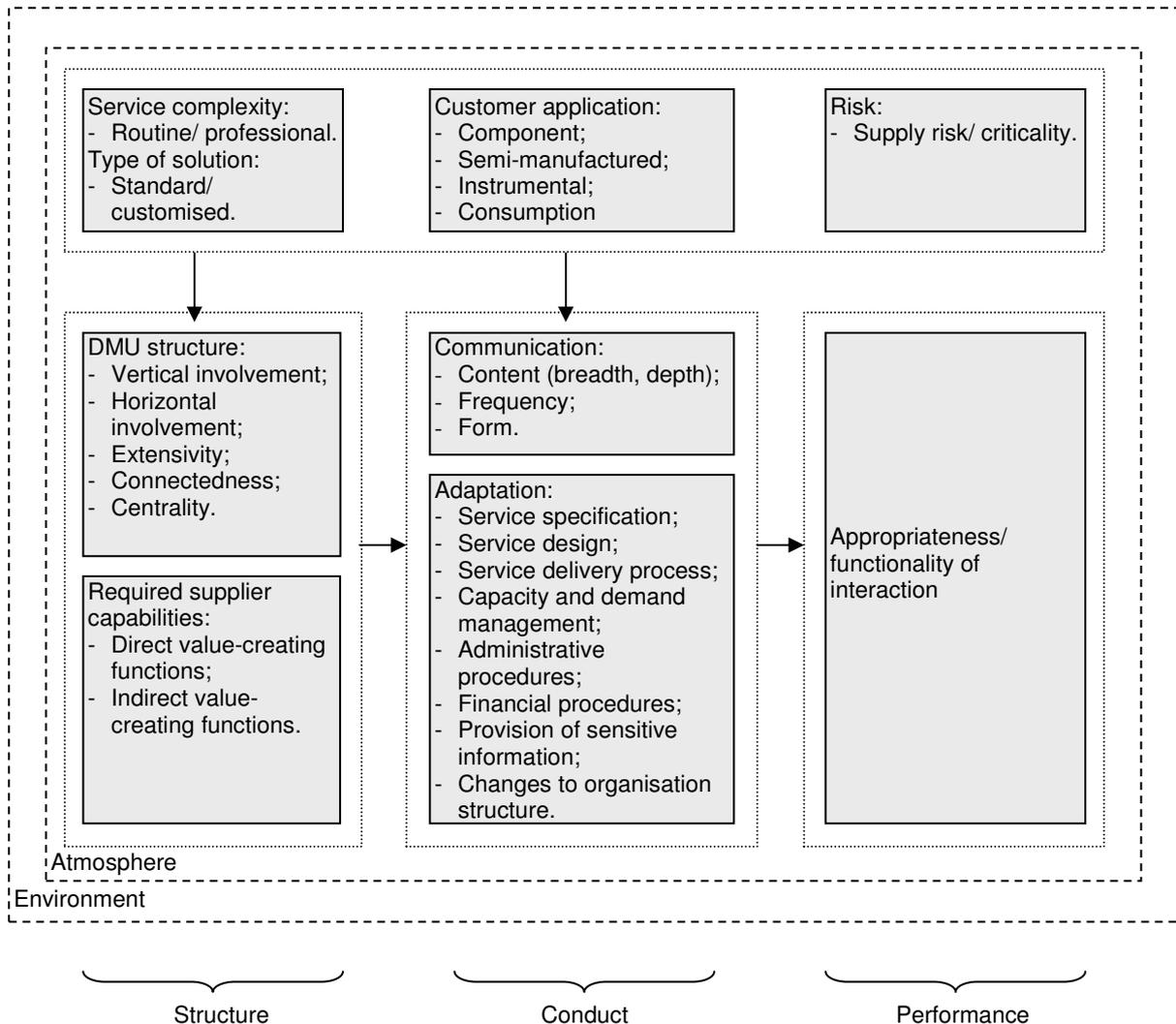
In order to distinguish between different types of services, in this study, services were segmented according to the way the buying company uses/ applies the service in relation to its own product/ service offering (Axelsson and Wynstra 2002). This way of segmenting results in four categories of services, and has been proven to be helpful in explaining interaction patterns for different types of products (Håkansson 1982); therefore, adapting this segmentation for services seems worthwhile.

The following section briefly reviews the analytical framework. Then, the methodology of the field study is laid out. Then, we introduce two case studies, for which the analysis in terms of the framework will be partly presented. We conclude with a discussion of the results.

A framework for analyzing interaction

A conceptual framework was developed for the purpose of studying ongoing interactions (Figure 1). Since this research draws on a lot of ideas brought forward by the IMP Group, the conceptual framework has obviously been grounded in the model used in the Interaction Approach (Ford 2002; Håkansson 1982; Hallén et al. 1991).

Figure 1 Conceptual framework for studying interactions



The framework follows the structure-conduct-performance logic (SCP paradigm (Porter 1991)), and can briefly be summarized as follows: interaction is made up of certain processes (conduct). It seems reasonable to assume that the interaction processes are affected by the buyer-supplier interface (structure). Depending on the design of the interface and the way the processes are carried out, a certain result/ degree of success with regard to the service purchase is obtained (performance).

We posit that both the interface and the processes are affected by the type of service. The way in which the buyer-seller interface is designed and the way in and extent to which processes are carried out will differ with regard to their appropriateness/ functionality for the different types of services.

Type of service

The number of service offerings is highly diverse. Think for example of facility services, financial services, transportation and distribution services, et cetera (Axelsson and Wynstra 2002). Also, the character of services will differ: some will be long-term while others will be short-term, some will be rather simple, while others are highly complex, some will comprise standardized and others customized solutions. As a result, it is difficult to come up with managerially useful generalizations for purchasing business services.

In an examination of the acquisition of business services across various industries from the organizational buyer's perspective, Jackson, Neidell and Lunsford (1995) found that organizational buyers perceive task differences for the purchase of MRO services (purchased by an organization to run its operations) and production services (part of the production process for a (set of) product(s)). This supports the idea of differing interactions for different types of services.

However, according to Jackson et al. (1995) some services cannot be classified clearly as being either an MRO or a production service. They use the example of an advertising agency to illustrate that the classification of this service very much depends on the way the customer uses the service: the advertising agency could be classified as an MRO service if it assisted with the organization's overall promotional program, or it could be classified as a production service if it designed an advertising campaign for a specific product (line).

Fitzsimmons, Noh and Thies (1998) claim that the elements of the buying organization the service is directed at (people, things, processes) in combination with the criticality or importance of the service, provides the purchaser with useful information for making purchasing decisions. Furthermore, they argue that the importance of a service is relative: think for example of clothing for personnel in a semi-conductor manufacturing facility versus the clothing for personnel performing technical services. A company may thus wish to modify their classification depending on the specific business circumstances.

Axelsson and Wynstra (2002; 2000) posit that the *application of a business service*, as seen from the customer's perspective, is one of the main factors influencing the effective design of customer-supplier interfaces and interactions. Their typology is an adaptation of a similar typology developed within the Industrial Marketing and Purchasing (IMP) Group, which have investigated interaction patterns related to the procurement of industrial goods. Researchers of this group were able to demonstrate that buying companies use different purchasing strategies and are confronted with different types of purchasing problems for different types of products (Håkansson 1982).

This typology contains four types of services (Axelsson and Wynstra 2002; Axelsson and Wynstra 2000):

- *Component services*: are passed on to the end-customer unaltered and can add value to the buying company's offering, as a result of which the buying company's customer may have specific requirements regarding the (sourcing of this) service. Furthermore, the supplier has to have detailed knowledge of the buying company's offering and of the way the final customer uses that offering.
- *Semi-manufactured services*: are altered to some extent before being passed on to the final customer. The services should therefore be as ready as possible to be added to the buying company's offering.
- *Instrumental services*: are used as tools/ instruments to produce the buying company's own offerings and impact the buying company's production processes, as a result of which it is important to know how the service fits with the existing production methods and procedures.
- *Consumption services*: are used within the buying firm without becoming part of the offering to the final customer. This category of services usually consists of a large variety of services involving substantive administrative efforts.

Note that the one and the same service can belong to different categories depending on how it is used by the customer. For example: catering for airline staff will be a consumption service, whereas catering for passengers will be a component service.

Axelsson and Wynstra (2002) argue that the application of a service, in combination with the *degree of service complexity and the type of problem solution* affect the shape and the content of interactions between buyer and supplier.

A fit between actual/ observed interactions and required interactions (regarding the type of service) determines the degree of success associated with interactions. Here, we do not regard success in terms of external indicators like sales of the offering to which the service provider has contributed, but in terms of appropriateness, or as Håkansson and Snehota (1995) refer to it, functionality of interaction). Interaction is functional when it contributes to fulfilling certain functions for the buyer-supplier relationship, which can be (Håkansson and Snehota 1995): 1) the function for the dyad (f.e. development of relationship between customer X_1 and supplier Y over time); 2) the function for any of the actors individually (f.e. effect of interaction on customer X_1); and the function for the network (f.e. can supplier Y also sell service Z_i developed with customer X_1 to customers X_2, \dots, X_j). For the purpose of this paper, we will focus on the function for the dyad (facilitating the exchange of the service and (further) developing the relationship between buyer and service provider).

Finally, services can be associated with a certain degree of *risk* in terms of supply and criticality to the business. This can also be expected to affect buyer-seller interaction.

Structure

The type of service is expected to affect the buyer-supplier interface. Here we regard the composition of the Decision Making Unit (DMU) / Problem Solving Unit (PSU) and the required capabilities for both buyer and supplier.

With regard to the *composition of the DMU/ PSU*, we expect different functions to be involved in buying different types of services. For example: when buying a component service, which is transferred to end-customers, we expect marketers to be involved since they are the ones knowledgeable about customer wishes and ideas. For instrumental services, the functional disciplines that are knowledgeable about the company's production processes are important members of the DMU. This idea could be extended to the supplier, expecting the supplier to compose his PSU differently depending on the type of service he is selling. Also, the level of organizational involvement (strategic/ tactical/ operational) will vary, as will the size of the DMU/PSU.

Various researchers within the marketing/ organizational buying behavior discipline have studied the DMU. Johnston and Bonoma (1981) and McQuiston (1989) demonstrated the functions/ people involved in interactions with suppliers vary with the novelty, complexity and importance of a purchase. Johnston and Bonoma (1981) introduced five measurable dimensions of the buying center: vertical involvement, horizontal involvement, extensivity, connectedness and centrality, and found that novelty, complexity and especially importance helped to explain vertical and horizontal involvement, extensivity and connectedness of the Decision Making Unit. Fitzsimmons et al. (1998) argue that services directed at the core business of the buying company are associated with increased risk as a result of which higher level management will be involved in the purchase decision.

Regarding *capabilities*, we expect that the supplier of a component service has to be able to understand the buying company's processes, in order to seamlessly provide its service on behalf of the buying organization. Also, development capabilities will be more important here than in the case of consumption services. However, also in this category, innovation is desirable, since smarter solutions can save the buying company substantial amounts of money (think for example of reducing the number of bills).

Axelsson and Wynstra (2002) argue that through interaction, buyer and supplier need to make certain capabilities available to each other. 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 fulfill. Walter et al. (2001) discuss eight value-creating functions for supplier relationships, which they divided into direct value-creating functions (cost reduction, quality, volume and safeguard) and indirect value-creating functions (innovation development, market, scout, social support).

Conduct

Regarding the interaction processes, two types of processes are distinguished. Ongoing interaction is deemed to be aimed at coordinating buyer and supplier activities in some way. This kind of coordination can be achieved through communication and adaptation. Buyer and supplier need to communicate in order to fine-tune and coordinate their activities and ideas. This will almost always result in adaptations to delivery schedules, designs, et cetera.

Communication is a complex topic to study. In this study, we will only look at communication in terms of content (breadth, depth), frequency and form (formal versus informal).

Considering *adaptations*, Brennan et al. (2003) refers to dyadic adaptation at the level of the individual customer or supplier, which can be unilateral (one firm making a modification without the exchange partner making a reciprocal modification) or mutual (both firms make reciprocal modifications).

Various researchers have developed classification schemes for dyadic adaptations (Cannon et al. 2000; Håkansson 1982; Hallén et al. 1991; Holmlund and Kock 1995; Turnbull and Valla 1986). After thorough investigation of these classification schemes, Brennan et al. (2003) developed an amended classification scheme based on the scheme of Håkansson (1982), containing product specification, product design, manufacturing processes, planning, delivery procedures, stockholding, administrative procedures and financial procedures, and provision of sensitive information and changes to organization structure. Applying this classification to services, product specification and design would be service specification and design; the manufacturing processes and delivery procedures would be the service delivery process; and stockholding and planning would be capacity and demand management.

Performance

Finally, we want to make claims about the appropriateness or functionality of interaction. This functionality is determined by the degree of fit between actual/ observed interactions and interactions required for dealing with a specific type of service (i.e. do companies make the right competencies and resources available, are the communication structures effective, et cetera).

In the IMP research tradition, functionality of interaction refers to the extent to which it contributes to fulfilling certain functions for the buyer-supplier relationship (Håkansson and Snehota 1995). However, this fulfillment of relationship functions is something that has not been very clearly operationalized in the IMP research tradition.

Blankenburg Holm et al. (1996) argue that through interaction, companies 'organize and share an unbounded structure of interdependent activities'. This interaction encompasses, but is not limited to, cooperation in a business relationship. Blankenburg Holm et al. (1996) claim that a larger the extent of cooperation within a focal relationship will lead to easier coordination of activities for both partners, increasing investments in the relationship and finally, increased productivity of the partner firms. The quality of this cooperation (and thus eventually, the extent to which productivity is increased), or in other words 'relationship understanding', is operationalized in terms of how the parties in the dyadic relationship handle upcoming issues, reach agreements and avoid misunderstandings. Another interesting concept brought forward by these authors is that of 'relationship commitment', which refers to the coordination of activities other than those aimed at exchange as well as to activities requiring investments in the relationships. These concepts might be useful in operationalizing functionality of interaction.

Field study

Now that the framework has been properly introduced, the field study can be introduced. The field study concerns a study of a reasonable number of service purchases at different companies. Participation was sought from ten companies operating in various industries. The dimensions on which variety was sought were: 1) type of industry; 2) type of customers; 3) type of production. This resulted in the following participation (Table 1):

Table 1 Overview of participating companies

Type of industry	Type of production	Type of customer	
		Business-to-consumer	Business-to-business
Service provider	Routine	2	2
	Professional	2	1
Manufacturer	Unit	-	1
	Series	1	-
	Process	-	1

Originally, we aimed at two service providers per category since the purchase of services is expected to have a more prominent position in service companies than in manufacturing companies. It is therefore important to have quite a few observations for these types of companies. It is however interesting to incorporate both types of companies in the sample, both to find out how manufacturing companies deal with buying services (search for variety in study objects) and to check whether this expectation is valid.

Unfortunately however, one of the companies had to withdraw during the course of the field study. It was decided to exclude the category (manufacturing, unit/project, business-to-consumer). An example would be a barrister, but since we did not expect a company like this to have a professional purchasing function, they were not included in the sample. Unfortunately, no participation could be found in the (manufacturing, series, business-to-business) and the (manufacturing, process, business-to-consumer) category.

Within each company, four services were studied, each belonging to one of the four categories of the customer-application typology. This results in forty cases, which were studied predominantly by means of interviews and occasionally by means of document studies.

An exploratory interview with the companies' primary contact persons was used to identify the services to be studied and the people to be interviewed. Interviews were carried out with purchasing and other

representatives (internal customer, contract owner, et cetera) responsible, and thus being most knowledgeable, for a particular type of service purchase.

The scope of the case studies is relatively small, involving a limited number of individuals and covering a short period of time. We felt however that these informants can provide us with substantial information on interaction regarding purchasing (and hopefully also regarding development of) services, thereby enabling us to develop theory with regard to interactions based on a larger number of observations.

A questionnaire was developed based on the questionnaires used in the IMP studies (Håkansson 1982). The interviews were transcribed and fed back to the interviewees for verification. Furthermore, the interviews were discussed with the research team to further enhance validity.

In the following section, some preliminary results of our case studies will be presented. For reasons of simplicity, we limit ourselves to discussing in detail two services per company. The component and the consumption service were chosen since the variation in interaction that we seek is expected to occur most strongly for these two services. We focus on variations for the Decision Making Unit and incorporate the component and consumption services of four of our case companies. In a previous paper, these same services were analyzed with regard to their adaptations (Van der Valk et al. 2005) based on data collected at two case companies.

The DMU structure is analyzed in terms of the five dimensions brought forward by Johnston and Bonoma (1981). We draw on these authors' definitions of the five dimensions:

- Vertical involvement: number of levels of the organization's authority hierarchy exerting influence and communicating within the buying center. Johnston and Bonoma (1981) identified six levels of vertical involvement; for the purpose of this study, we limit ourselves to describing whether involvement is strategic, tactical or operational.¹
- Horizontal or lateral involvement: number of separate departments/ divisions/ functional areas involved in the purchase decision. Here we also regard to number of functions involved in ongoing interaction, as well as the nature of the functions involved.
- Extensivity: total number of individuals involved in the buying process.
- Connectedness: degree to which members of the buying center are linked with each other by directed communication concerning the purchase. We focused on finding out whether a buying center was very much or hardly connected. We also took into account the connectedness of the functions involved in the ongoing interactions.
- Centrality: sum of purchase communications of the purchasing manager in the buying communication network weighted by the total number of individuals in the buying center. Here, we regard whether and for what activities the purchasing discipline is in the lead.

Since the interview studies have been carried out from the buying firm's perspective, the emphasis is on the DMU structure; the constitution of the Problem Solving Unit is addressed only when this provides additional explanation for the observations.

Component services concern services that are passed on to the end-customer unaltered, whereas consumption services are used within the buying firm without becoming part of the final product. We present the following propositions:

- P1: Since the component service may affect the buying company's offering in terms of value-creation and the consumption service remains in the background, we expect the level of vertical involvement to be higher for component services than for consumption services.
- P2a/b: Since the component service may affect the buying company's offering in terms of value-creation, the type of problem solving required when buying component services will be more complex than for consumption services. We therefore expect that problem solving will require more functional disciplines (P2a) and people in general (P2b) than in the case of consumption services.
- P3: Since the component service may affect the buying company's offering in terms of value-creation, the type of problem solving required when buying component services will be more complex than for consumption services. Therefore, we expect that the connectedness of the members of the buying center will be higher for component than for consumption services.
- P4: Since the component service may affect the buying company's offering in terms of value-creation, the focus is on the technical characteristics of the service and how these fit with the

¹ The level of detail of this study was too small to actually map all the individual functions involved. Since we did not have the information required for describing vertical involvement in the terms of Johnston and Bonoma (1981) at the proper level of detail, we chose to describe the vertical involvement in terms of its observations, after which three levels of vertical involvement could be identified.

characteristics of the buying company's offering. Therefore, the functional disciplines will be more in the lead. We expect the centrality of the purchasing discipline to be lower for component than for consumption services.

Analyzing the buyer-seller interface

The following sections present the analyses of the DMU structure and supplier capabilities for four services studied at four companies (Table 2): the component and the consumption service studied at an Oil Exploration and Production company (OEP), an Employed persons Insurance Administration agency (EIA), a bank (BNK) and a Gas Trading Company (GTC).

Table 2 Overview of companies analyzed

Type of industry	Type of production	Type of customer	
		Business-to-consumer	Business-to-business
Service provider	Routine	BNK	GTC
	Professional	EIA	-
Manufacturer	Unit	-	-
	Series	-	-
	Process	-	OEP

The Decision Making Unit for buying component services

In this section, the structure of the Decision Making Unit is described for the four component services studied at the four companies. The following component services have been studied:

- *OEP*: Underbalanced drilling refers to a new drilling technique. During drilling, a washing is used which takes away the drill grind. Traditionally, drilling is carried out overbalanced (pressure of the drilling column is higher than the counter pressure from the reservoir, to prevent uncontrolled escapes of oil and/ or gas. In case of underbalanced drilling, the column pressure is smaller than the gas pressure, which enables production during drilling. The underbalanced drilling activities are carried out by a main contractor, which provides the equipment/ installations and the personnel.
- *EIA*: The execution of payments on behalf of EIA. EIA has a large number of clients who receive various kinds of payments. These payments are made from the Dutch treasury department, which invests the money collected from fees and funds. EIA creates the payment orders, after which this overview is handed over to a bank. The bank subsequently makes all the payments.
- *BNK*: The development, installment and maintenance of bank hall equipment. This concerns everything that has to do with taking in and dispensing money to consumers (automatic teller machines, cash deposit machines, coin roll machines, et cetera). These machines are custom-made by a single supplier, which also takes care of installing the machines at the bank locations and of maintaining the machines during their life cycles. Although the product is a relatively large element of the supplier's offering to the bank, the emphasis is on buying a service: dispensing money to clients (i.e. the bank is buying cash withdrawal transactions). This service is passed on to the end customers of the bank unaltered, even though the users of the service only deal with the machine.
- *GTC*: Subtraction of condensate from gas pipeline system. Treatment of the gas (resulting from mixing different gas flows) might cause the development of condensate (gasoline-like substance), which can damage systems and equipment, like for example turbines. This condensate therefore has to be removed from the gas transportation net, which is done by a supplier means of a technical procedure. The condensate is temporarily stored in the supplier's tanks, after which the supplier transports it to a processor.

The results for the five dimensions of the DMU are presented in Table 3.

Table 3 The DMU for component services

		Oil exploration and exploitation company	Employed Persons Insurance Admin. Agency	Bank	Gas trading company
		Underbalanced drilling	Execution of payments	Bank hall equipment	Subtraction of condensate
DMU structure	Vertical involvement	Involvement at the tactical and operational level	Representatives at pension board level, involvement at level of the service (purchasing)	Involvement at the level of the service, steering committee	Involvement at the tactical level, approval from operations department
	Horizontal involvement	Technical disciplines involved as well as purchasing, underbalanced drilling engineer, people from contracts, et cetera (ten people)	Representatives of board pension fund, of employer's Pensionbureau, purchasing, external consultant	Purchasing and product management, software specialists, internal customer	Purchasing, contract owner (technical discipline), operations management
	Extensivity	Number of representatives per discipline varies	Multiple representatives for the board, one representative for other functions	Multiple individuals per discipline	One representative per discipline
	Connectedness	The core members of the team remain involved during implementation	DMU operates as a team during the tender trajectory, board stays involved with operational process	Both purchasing and product management remain involved during implementation, although purchasing assumes a more passive role	Purchaser and technician operate as team during tender, after contract has been signed, purchasing obtains a less intensive role
	Centrality	Purchasing supports project (shared responsibility before contract is awarded, advisory role during implementation)	Purchasing facilitates tender trajectory, pension board plays central role	Purchasing not very central, but joint role with product management	Purchaser and technician share responsibility for contract

We can see that with regard to vertical involvement, all four of the component services have some involvement at the tactical/ strategic level, in addition to involvement at the service/ operational level. Furthermore, various functional disciplines are involved in addition to purchasing, like for example software specialists, engineers or consultants. Also, for all four services, the number of representatives per discipline is larger than one, except for the purchasing discipline, which is often represented by one individual.

In the case of GTC however, not only purchasing is represented by one individual, also the technical discipline has only one representative. At GTC, these two people work together as a team during the purchase trajectory and remain to be a team during implementation. The contract owner (technical discipline) is mainly responsible for technical matters, whereas purchasing is mainly responsible for commercial matters. The same applies to OEP, although it seems that the technical discipline is somewhat more strongly in the lead there. This could be due to the fact that OEP is a company where technique dominates. For GTC, this is less strongly the case.

The fact that OEP and GTC show similar patterns is not surprising: OEP is a supplier to GTC and there is a very open relationship between the two companies. Benchmarking activities among these two is something that is expected to occur.

BNK and EIA show somewhat different results. Purchasing seems to have more of an advisory/ consultancy role here, and the functional disciplines are mainly in the lead during the purchase process. After the purchase, these disciplines serve as contract owners, involving purchasing only when commercial issues arise or when the contract needs to be renewed. For these two companies, contract management is not a team, but an individual effort.

Overall, we would conclude that the Decision Making Unit looks quite similar during the purchase process. However, during 'life after the purchase', some differences arise: while at OEP and GTC contract management remains a team effort, at EIA and BNK, the contract owner is the one who is mainly responsible for the contract and who calls upon purchasing in case they are needed.

Regarding the observations for the other elements of the framework (capabilities, communication and adaptation) and the overall picture obtained from the interview studies, it seems that OEP and GTC are more successful in their approach to buying component services than are EIA and BNK. The way in which they deal with the purchase of services seems to be functional in terms of the disciplines involved (all relevant disciplines seem to be represented), the approach followed (clear for both buyer and supplier), lack of critical issues in the collaboration, et cetera, as a result of which the exchange of the service and ongoing interaction are facilitated and the relationship is (further) developed.

We now turn to a discussion of the consumption services studied.

The Decision Making Unit for buying consumption services

The following consumption services have been studied:

- *OEP*: Waste Management refers to the collection of waste at OEP locations. This concerns perilous waste, regular waste (coming from on and offshore drilling locations and office buildings), construction and demolition waste, procession of contaminated earth and drilling waste. For the larger part of the waste streams (coming from production and abandonment) OEP has a contract with one service provider, which collects the waste and delivers it to suitable processors. The supplier also takes care of transportation, rental containers, samples and analyses, et cetera.
- *EIA*: Infrastructure for telephone, Internet, et cetera. The scope of this purchase is the thirty new locations from which EIA will be working. This service concerns the physical infrastructure for the work units.
- *BNK*: Maintenance services for office buildings (this predominantly concerns technical maintenance inside the buildings, as well as some renovation projects) and office cleaning services (e.g. corporate facilities, not the individual bank buildings). These services are grouped according to their content and are currently purchased from five groups of suppliers (each with a different work field). A sixth group will possibly be added in the future.
- *GTC*: Decontamination of soil refers to the digging away of soil and the subsequent replacement by clean soil (the contaminated soil is transferred to a cleaning facility). Contaminated water is extracted from the soil by means of pumps, after which it is purified in a water purification plant and transported to a ditch or the sewer.

The results for the five dimensions of the DMU are presented in Table 4.

Table 4 The DMU for consumption services

		Oil exploration and exploitation company	Employed Persons Insurance Admin. Agency	Bank	Gas trading company
		Waste management	Infrastructure work units	Maintenance and cleaning services	Decontamination of soil
DMU structure	Vertical involvement	Involvement at the tactical and operational level.	Mainly representatives at service level	Involvement at the level of the service, steering committee	Involvement at the tactical level
	Horizontal involvement	Supply chain engineer (purchasing) and waste manager	Representatives from legal, financial control, ICT control, service management, facility experts and external people, purchasing	Building Care department, owners, users, exploitants, purchasing	Purchasing, contract owner (technical discipline), involvement of engineering agency
	Extensivity	One representative per functional discipline	For some disciplines, multiple representatives, one representative for other disciplines	Various departments involved, multiple representatives for some departments, one representative for others	One representative per discipline
	Connectedness	Purchasing team becomes contract management team after contract has been signed	DMU operates as a team during the tender trajectory, part of team facilitates operational process	Purchasing and Building Care closely linked, other ties are loose	Purchaser and technician operate as team during tender, after contract has been signed, purchasing obtains a less intensive role
	Centrality	Purchasing supports from specification to implementation, shared responsibility before contract is signed and advisory role afterwards	Purchasing facilitates tender trajectory, service management plays central role	Building Care predominantly central	Purchaser and technician share responsibility for contract

Regarding the DMU for the four consumption services, we see first of all that vertical involvement is limited to the tactical/ operational level. Only the service purchase at BNK involves a steering committee. Considering the fact that it is consumption services we are discussing here, it seems counterintuitive that people from the highest level in the organization are involved. A possible explanation could be the size of the expenditures involved with this service.

The horizontal involvement seems to be quite similar for all four services, and maybe even quite large for consumption services. In addition to that, EIA and BNK involve multiple representatives for some of the disciplines involved, whereas OEP and GTC limit themselves to one representative per discipline. The approaches to the post-purchase phase for OEP and GTC are again quite similar, although the role of purchasing at GTC is somewhat less intensive. At EIA and BNK, purchasing is less in the lead and assumes a more passive role, being involved only when commercial issues arise or when the contract needs to be renewed.

In conclusion, we could say that in the pre-purchase phase, the approach to the purchase of consumption services is similar across the four companies. In the post-purchase phase, differences arise. These differences are rather the same as the differences between the pre and the post-purchase phase when buying component services.

We will discuss this observation in more detail in the next section.

Discussion

The four cases show interesting results: not only do differences arise between the two types of service purchases, also within a certain service purchase do differences arise. Table 5 summarizes the results of the studies, by means of a first attempt to code the findings. The labels used for all five dimensions are Low (L), Medium (M) and High (H).

Table 5 Overall results

		Oil exploration and exploitation company	Employed Persons Insurance Admin. Agency	Bank	Gas trading company
		Underbalanced drilling	Execution of payments	Bank hall equipment	Subtraction of condensate
DMU	Vertical involvement	L/M	H	H	L/M
	Horizontal involvement	H	H	H	L
	Extensivity	H	H	H	L
	Connectedness	H	H	H	H
	Centrality	H	L	L	H
		Waste management	Infrastructure work units	Maintenance and cleaning services	Decontamination of soil
DMU	Vertical involvement	L/M	L	H	L
	Horizontal involvement	L	H	H	L
	Extensivity	L	H	H	L
	Connectedness	H	H	L	H
	Centrality	H	L	L	H

When comparing the component services and the consumption services, we could conclude that vertical involvement is larger for the component than for the consumption services. P1 was thus supported. BNK is an exception though: both service purchases are approved of by a steering committee and thus are characterized by involvement of higher-level management. This might be due to the fact that both purchases concern company-wide agreements, thereby involving high spend. With regard to horizontal involvement and extensivity, the difference between the component and the consumption service is less strong. Only for OEP does the component service have higher horizontal involvement and extensivity than the consumption service. P2 was thus not supported. We have already suggested however that the companies might be putting in too much effort by involving to many departments and too many representatives per department into buying consumption services. With regard to connectedness and centrality, no substantial differences seem to arise between the component and the consumption services. Only BNK has higher connectedness in the case of the component service. P3 and P4 were thus not supported.

This would imply that the four companies employ quite similar DMUs when buying both types of services. In terms of functionality of interaction, the results of the interview studies moreover do not provide strong indications that the companies are doing worse with regard to the exchange of component services than of consumption services, nor vice versa. It therefore cannot be said that the approaches currently employed fit better with either one of the services.

When regarding the component service across the four companies, we find that the DMUs employed by the four companies are also comparable. Only GTC shows a somewhat different DMU. The same applies to the four consumption services, although here, the patterns are somewhat more diverse. OEP and GTC seem to be similar, whereas EIA seems to resemble BNK in terms of composition of the DMU. The interviews studies provide some indication that two of the companies are somewhat more successful in buying business services than are the other two. This seems to be the case for the services for which purchasing remains actively involved during the implementation period (OEP and GTC). This claim is based on observations made during the interviews, during which the process of buying these services and organizing contract management seemed better/ more clearly organized. Yet, this idea cannot be thoroughly supported with the results of these four interview studies.

Taking into account the semi-manufactured and the instrumental services for these four case companies, we find within three of the four companies that the constitution of the buying center generally remains the same for all four services. For OEP, some variation does seem to occur with regard to the composition of the DMU for component and instrumental services versus semi-manufactured and consumption services. This becomes mainly evident from the level of vertical involvement, which is higher for the component and instrumental services than for the semi-manufactured and consumption services. This is not in line with the expectation that the component and the semi-manufactured would show quite similar patterns, as would the instrumental and the consumption services.

Overall, not any of the companies seems to really differentiate between different types of services, but rather to advocate a 'one-size-fits-all' approach. To what extent this really is the case remains to be investigated by means of the other interview studies in this research project.

Finally, we have to acknowledge that the classification of the services described above could be subject to discussion. For example: in the case of GTC's component service, it is not the service as such which is transferred to customers, but the result of the proper execution of the service. GTC for example does not buy services that are directly transferred to customers. Also in manufacturing companies, like OEP, these services can hardly be found: OEP does not transfer the underbalanced drilling service to customers, but the proper execution of the service has an effect on the production (in terms of speed), which is important to customers. It is easier to identify services being performed to end-customers at service providers (think f.e. of call centers or subcontractors). However, if we consider a service from which the result is moved on to the customer a component service, we are able to find examples of component services in production companies (think for example of the outsourcing of production activities to third parties, the product of which is transferred to customers). Whether we are then still discussing services can be disputed.

Although some services cannot be easily classified, this does not mean that the customer-usage dimension cannot be useful for explaining observed variation in interaction. A preliminary conclusion could be that not all four types of services are (equally) represented at all companies. Nevertheless, we feel that the typology would benefit from a more sophisticated description of the different types of services, preferably on some more (sub) dimensions (i.e. what factors determine customer application?).

Conclusion

The four interview studies show somewhat differing results for the two types of services. The researchers' proposition that component services would be characterized by more higher-level involvement was supported. The proposition that the DMU would be larger in size for component services than for consumption services was not supported, neither for the number of functional disciplines involved, nor for the number of people involved. The proposition that the DMU would be more connected for component than for consumption services was not supported. Finally, the proposition that the centrality of the purchasing manager would be lower for component than for consumption services was not supported.

This makes one wonder whether, assuming that there is some truth into the proposed typology, these companies are not doing a well job. The interview studies do not indicate this, which would imply that the typology is less useful than expected. These however are preliminary conclusions drawn on a very rough analysis of the data collected. Additional interview studies are needed to shed more light on these findings.

In order to investigate the appropriateness of the typology, the interview studies need to be analyzed in terms of the entire framework. Furthermore, the other interview studies should contribute to unveil distinct patterns of interaction, both with regard to the process and the interface. This will help to draw conclusions with regard to appropriateness of the customer usage dimension as a main determinant of different forms of interaction, or of other dimensions, which are found to influence the observed interactions.

By analyzing the observed patterns in terms of functionality of interaction, we will also be able to say something about which interactions are most functional for which service purchases. This analysis could furthermore be used when patterns are observed that do not fit the systematic variation expected based on the characteristics of the service and how they are related to the determinants of

interaction patterns: the analysis could either point out that the observed patterns are not functional and therefore do not fit the expected patterns, or the analysis could indicate that more research is required here.

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