ICT Enabled Distribution of Services: Service Positioning Strategies, Front Office Information and Multi-channeling

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Chapter One
Introduction and Motivation

The central theme of this thesis is the distribution of services. This theme is studied from an informational perspective, in which insights from the two disciplines information management/information systems and service marketing and management are combined. The thesis unfolds in two parts.

In part one, the information requirements for service specification in the front office in relation to the strategic question of service positioning is the central theme. Part one is the main part of this thesis. In this chapter, I discuss the research questions and propositions addressed in part one, the motivation for the study in part one, the problem statement of the study in part one, the combination of both disciplines information management/information systems and service marketing and management, the structure of part one and the target group and presentation style of the thesis. In part one a theory is build and confronted with eight front offices in four business units of different service companies (Unique Nederland, Gak Nederland, Interpolis and Sioo) through the case study method.

Part two addresses additional work on the distribution of services to enhance our understanding on the distribution of services and contains a study on the case study method to understand how this method generally is applied in the information systems discipline. Four innovative phenomena in service distribution are discussed: the use of multiple channels to distribute services (multi-channeling), the associated coordination issues in multi-channeling, the rise of front, mid and back office architectures to support multi-channeling and possibilities for ICT-based knowledge management in supply channels. The first three phenomena are discussed in chapter ten. In chapter ten insights on the informational aspects of service distribution are expanded from the service specification phase of the sales cycle (the focus of part one) into the complete sales cycle (from the attention phase to the after sales service phase). The phenomenon of knowledge management in supply channels is discussed in chapter eleven, based on a case study at IBM Nederland. In chapter eleven I expand some of the initial insights on knowledge management in service networks/supply channels from the Interpolis and Sioo cases in part one. Chapter twelve contains a study on the application of the case study method in which 55 case studies in the information systems discipline are evaluated. I started the study to compare my own research design with other studies. The study supports chapter four of part one in which the design of the study in part one is presented. All three chapters in part two are completely self-containing and should be read as such. The research questions underlying these chapters will be presented in the chapters. I shortly introduce part two at the beginning of part two.
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The complete thesis contains five related studies. Part one starts with a literature study on service strategy and service delivery design (chapter two and three). The rest of part one (chapter four to nine) contains four embedded case studies on the information requirements of the front office and the service positioning strategy of the business unit, including the research design and the cross case analysis and conclusions. Part two contains a study on multi-channel service distribution and front, mid and back office architectures, including a comparison of six front, mid and back office applications in the service industry (chapter ten). Chapter eleven contains a case study on knowledge management in hybrid supply channels at IBM Nederland. Chapter twelve contains a study on the application of the case study method in 55 case studies in the information systems discipline, the last of the five studies.

Part One: Research questions and Propositions

Distribution of services differs from the distribution of physical products, because services differ from products. I follow Hill (1977) and Gallouj & Weinstein (1997) in their definition of a service as “a set of processing operations carried out by a service provider on behalf of a client, in a medium held by the client, and intended to bring about a change in this medium”. This definition shows the basic characteristic of services, i.e. its process nature (Grönroos, 1998). In the physical distribution of goods, the accessibility of products is central. The emphasis is on bridging differences in time, place, amount and quality of products (Stern et al., 1996; Chase & Acquilano, 1995). The processes that produce products could be hidden from the customer through stocks. Services cannot be stocked and service processes tend to be visible (at least partly) to the customer because of the production/consumption simultaneity in services (Shostack, 1987; Grönroos, 1990; Normann, 1991, Berry & Parasuraman, 1991). The customer participates to some extent in the service delivery process. The consequence of the unstockability, the simultaneity of production and consumption and the definition of services as sets of operations, is that service processes cannot be hidden from the customer, but rather must be brought within reach of the customer so that production/consumption simultaneity can take place and the set of operations can be performed on the medium held by the customer.

Central to service distribution is the accessibility of service processes through the replication of these processes (Normann, 1991). Traditionally, this has been a question of service facility design and personnel training. Nowadays (taking self service systems, front office systems, e-commerce applications and e-business developments into account), replication of services has become a matter of the application of Information and Communication Technology (ICT) as well. Service process logic could be (partly) programmed in software and service processes could be made accessible through this software.

The problem is that the academic and practitioners literature pays little attention on the use of information and ICT to improve customer service and few studies have investigated its effects on service design (Wathen & Anderson, 1995). The definition
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of information requirements is probably the most neglected area in the service industry (Berkley & Gupta, 1995). In general there seems to be a facility bias in service analysis and classification and information and ICT has been neglected (Tinnila & Vepsalainen, 1995). In part one of this thesis I will make a contribution to our thinking on the information requirements for service distribution, especially for service specification in the front office because service specification plays a central role in service distribution.

Service providers have a front office and back office dichotomy in their operations (Stone & Woodcock, 1995; Fitzsimmons & Fitzsimmons, 1997; Molenaar, 1997; Grönroos, 1998). The idea of front and back office dichotomy is based on the general organizational design principle of Thompson (1967) to protect the operations of the organization from environmental disturbances and uncertainties stemming from individual customer contact, to place these operations in a low contact positioning and to have high contact activities to buffer the operating core. Front offices are supposed to be designed with the prime objective to serve customers and to perform high contact activities. To allow for more complex processing of customer cases in the back office, in the front office processes are required to extract from customers all that is required (mainly information) to do so. In the front office there is a three-way interaction between customers, employees and technology or a two-way interaction between customers and technology (in the case of self-service, like in e-commerce) (Chase and Tansik, 1983). Tasks are done in the back-office mainly because of scale economies or because mixing of customer oriented tasks and complex case handling tasks could come at the expense of the quality of one or the other. In the back-office the interaction is two-way between employees and technology. In the back-office employees only deal with customer surrogates, like orders or other information, often embodied in ICT (Chase and Tansik, 1983). It is obvious that the front and back office dichotomy in organizational design introduces coordination problems between front and back offices. Buffers are needed for queuing cases for back office processing, information systems are needed to ensure rapid availability of data to the back office (Stone & Woodcock, 1995; Li, 1997) and the front office needs support from the back office, introducing needs for informational and material handling tasks (Chase & Tansik, 1983). Coordination between front and back office will be discussed in part two of this thesis.

The front office is where service processes are made accessible to customers through the replication of processes, as is the case in traditional service facility layout. Front office employees intermediate between customers and technology or customers service themselves with the technology. Increasingly this technology is ICT because through this technology information on service requests could be packed in customer surrogates and processed by the back office and because information about these service processes could be made available to front office employees or self serving customers. In the front office, the service encounter takes place. The service encounter plays a central role in the service marketing literature (Solomon et al., 1985). The service encounter is seen as the event at which the customer interacts with the service provider (Heskett, 1990). Carlzon (1987) termed service encounters as ‘moments of truth’: “the moment of truth is the moment at
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which the service provider and service customer confront one another and service quality is realized. At this moment both are very much on their own.....It is the skill, the motivation and the tools employed by the firm’s representative and the expectations and behavior of the client which together will create the service delivery process”.

According to Normann (1991), the customer appears twice in the service process, as a customer specifying his requirements and as a coproducer taking part in the service production (Normann, 1991). Grönroos (1990), Parasuraman & Berry (1991) and Berkley and Gupta (1995) also differentiate between customer contacts in service specification and service fulfillment. Therefore I distinguish two ‘moments of truth’. The first ‘moment of truth’ is the coproduction of customers in the service specification process in which an agreement is reached between the customer and service provider, regarding the service to be delivered. The second ‘moment of truth’ is the coproduction of customers in service production. The first ‘moment of truth’ is the object of study in this thesis. Therefore I define the front office as the part of the organization in which customers have contact with the service provider to reach an agreement regarding the service to be delivered. This definition narrows front office activities down to service specification and is stipulative.

Service specification contact is the first contact between the service provider and the customer in which customer specific requests are matched with the abilities of the service provider. Service specification forms the starting point of service delivery processes. In chapter three I derive seven functions of service specification from the literature.

- Customers specify their needs and the service provider informs and advises.
- The building of customer relations.
- Complete service specification reduces customer fear and improves perceived service quality.
- Initiates service delivery processes by providing these processes with specifications.
- The implementation set of a service network is specified.
- Interaction often forms the starting point for service innovation.
- Accumulation of market information.

In figure 1.1 service specification is positioned in a general sales cycle, which is derived from the literature in chapter three. In preceding phases of the sales cycle, the service provider makes promises about subsequent phases. These promises need to be kept in subsequent phases; the latter phases confirm the promises made in earlier phases (Grönroos, 1990; Berry & Parasuraman, 1991). To make a promise that can be held, one needs clear information about the subsequent phases of the process in the preceding phases. Reliability (‘keeping promises’) is seen as the number one dimension of service quality (Parasuraman, Berry and Zeithaml, 1991; Grönroos, 1998). Thus, in service specification promises about subsequent phases are made, which need to be based on information about these phases to promise the right thing.
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This raises the question whether something in general could be said about service delivery processes to get an idea on the information requirements during service specification. This is the case because the nature of the service process has been a central theme in the service marketing and information management literature. Traditionally the nature of the service process is described in terms of standardized services and customized services (Levitt, 1976; Lovelock, 1984; Shostack, 1987; Sundbo, 1994; Hart, 1995). Standardized service processes are seen as non-varying sequential processes suited for mass production. Customized processes are seen as processes with high degrees of freedom for adaptation and tailoring to the needs of individual customers.

During the last decade many authors paid attention to mass customization, a combination of the mass production capabilities of standardized services with the customization capabilities of customized services (Pine, Victor & Boynton, 1993; Hart, 1995; Rafiq & Ahmed, 1998). Mass customization is based on standardized modules (Sundbo, 1994) and requires a dynamic network of autonomous operating units executing a specific process or task (Pine, Victor & Boynton, 1993), a modular organization (Wigand et al., 1997). This suggests that the nature of the service process, expressed in the degree of customization of the service process, need to be reflected in information supporting service specification in the front office to make the right promise.

This raises the first two research questions, which are central to part one of this thesis.

Q1. How is the degree of customization of services, that needs to be specified in the front office, related to the information requirements in the specification process and can front offices be classified based on this relation?

Q2. How is the effectiveness of the front office influenced if the required information for the specification of a certain degree of customization is not available?
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The nature of the service process, expressed in the degree of customization, not only seems to determine front office information requirements, but determines service positioning strategies as well. As in services the process is the product, positioning of services on the market is a question of positioning service delivery processes (Shostack, 1987; Berry & Parasuraman, 1991; Normann, 1991). The engineering of processes serves strategic service positioning purposes (Shostack, 1987). In chapter two, I derive three generic service positioning strategies and their basic characteristics from the literature. I label the three strategic patterns as mass orientation, scope orientation and partnership orientation.

This raises the third research question, which is central to part one of this thesis.

Q3. How are the types of front offices related to the business unit’s service positioning strategy?

In chapter two, I further argue that service processes should be seen as configurations of resources and that the resource-based view on strategy is paramount in service strategy (de Jong & van Bemmel, 1992). Taken from a resource-based view, service providers try to enhance their resources by innovation to improve their service offering and to retain customers. Therefore ideas on service innovation have been taken into account throughout this thesis. Service process positioning should also be understood in the context of positioning in service networks. As service providers continually try to capitalize on customer relationships, the bundling of services of different service providers has become the logic in the service industry (Normann, 1990; Vandermerwe, 1994; Gummesson, 1996). Ideas on the resource-based view, service innovation and service network positioning deepen our understanding on service positioning strategies.

To answer the three research questions, I develop three propositions, which will be confronted with the practice of eight front offices in four business units of Dutch service providers. These propositions are briefly introduced in the next section, are developed from the literature review in chapter two and three and are discussed in detail in chapter four (the research design).

Proposition One: Model of the Information Requirements of the Front Office

I propose that the degree of information, which is required in the front office to specify the service, increases in accordance with the degree of customization. I categorize the information into information regarding the relation with the customer (relation information), information regarding the product (product information) and information regarding the service process (process information). Although ‘the product is missing’ (Grönroos, 1998) in services, using the term ‘product’ has become widespread in the service industry (Shaw, 1990). In this proposition, the term product refers to the structure of the service (activities) to be delivered. The term process refers to the process by which service activities are linked. Process
information provides ‘logistical’ information to the front office, like delivery time norms or capacity availability.

Five degrees of customization are distinguished with matching degrees of information. The five resulting combinations of a degree of customization related to relation, product and process information to specify that degree of information are the types of front offices. The five types are labeled as ‘counter’, ‘one-stop-shop’, ‘field and inside service’, ‘control room’ and ‘symbiosis’. This leads to a model of the information requirements of the front office, which is shown in figure 1.2.

**Proposition Two: Effectiveness of the Front Office**

If there are requirements, there must be consequences as well if requirements are not met. The second proposition states that the effectiveness of the front office decreases when the information requirements for the specification of the corresponding category of customization are not met. Ineffectiveness is supposed to manifest itself in the following.

1. Limited proactivity.
2. Specification quality problems.
3. Longer specification lead-time.
4. Limited protection of the back office.

Table 1.1 shows the proposed relation between insufficient information and the ineffectiveness of the front office.

<table>
<thead>
<tr>
<th>Front office type</th>
<th>Degree of customization</th>
<th>Relation information</th>
<th>Product information</th>
<th>Process information</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘Counter’</td>
<td>Pure standardization</td>
<td>Anonymous transactions</td>
<td>End products</td>
<td>Norms for delivery time of end products</td>
</tr>
<tr>
<td>‘One-stop-shop’</td>
<td>Segmented standardization</td>
<td>Characteristics of market</td>
<td>Assortment</td>
<td>Norms for delivery time of assortments</td>
</tr>
<tr>
<td>‘Field and inside service’</td>
<td>Customized standardization</td>
<td>Customer profiles</td>
<td>Standard components</td>
<td>Capacity availability</td>
</tr>
<tr>
<td>‘Control room’</td>
<td>Tailored customization</td>
<td>Development of the relationship</td>
<td>Smallest replicable units</td>
<td>Capacity assignment</td>
</tr>
<tr>
<td>‘Symbiosis’</td>
<td>Pure customization</td>
<td>Opportunities for partnership</td>
<td>Design knowledge</td>
<td>Implementation and sourcing potentials</td>
</tr>
</tbody>
</table>

Figure 1.2: Model of the information requirements of the front office
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<table>
<thead>
<tr>
<th>Ineffectiveness: Due to:</th>
<th>Limited proactivity</th>
<th>Specification quality problems</th>
<th>Longer specification lead-time</th>
<th>Limited protection of the back office</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insufficient relation information</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insufficient product information</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Insufficient process information</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Table 1.1: The relation between insufficient information and ineffectiveness

Proposition Three: Generic Strategies and Front Office Type

The third proposition deals with the relationship between the service positioning strategy and the types of front offices categorized in the model of proposition one. Three generic service positioning strategies and its characteristics are derived from the literature in chapter two: mass orientation, scope orientation and partnership orientation (see table 1.2). I propose that service providers with a mass orientation rely on the front office types 'counter' and 'one-stop-shop'. Service companies with a scope orientation rely on the types, 'field and inside service' and 'control room'. Service providers with a partnership orientation rely on the types 'control room' and 'symbiosis'. Answering research question three might lead to the eight characteristic of the generic service positioning strategies which characterizes the information requirements for service specification in the front office: the front office type.

<table>
<thead>
<tr>
<th>Service positioning strategy</th>
<th>Mass orientation</th>
<th>Scope orientation</th>
<th>Partnership orientation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational design</td>
<td>Mass orientation</td>
<td>Scope orientation</td>
<td>Partnership orientation</td>
</tr>
<tr>
<td>characteristics:</td>
<td>Mass orientation</td>
<td>Scope orientation</td>
<td>Partnership orientation</td>
</tr>
<tr>
<td>Nature of the service process</td>
<td>Standardized / Infrastructural</td>
<td>Modular / component based</td>
<td>Ad hoc structured and interconnected with customer processes</td>
</tr>
<tr>
<td>Service type</td>
<td>Product (standardized)</td>
<td>Service/product (mass customized)</td>
<td>Pure service (customized)</td>
</tr>
<tr>
<td>Value adding focus</td>
<td>Process and source</td>
<td>Process, interactive and client</td>
<td>Client and interactive</td>
</tr>
<tr>
<td>Interaction governance</td>
<td>Selling</td>
<td>Sparring</td>
<td>Jobbing</td>
</tr>
<tr>
<td>Management approach</td>
<td>Production-line perspective</td>
<td>Empowerment perspective</td>
<td>Empowerment perspective</td>
</tr>
<tr>
<td>Marketing approach</td>
<td>Transaction marketing</td>
<td>Relationship marketing</td>
<td>Relationship marketing</td>
</tr>
<tr>
<td>Economies</td>
<td>Economies of scale</td>
<td>Economies of scope</td>
<td>Economies of relationships</td>
</tr>
</tbody>
</table>

Table 1.2: Characteristics of three generic service strategies
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Part One: Motivation of the Study

The study in part one of this thesis is motivated by the PrimaVera research program on information management and by a central theme in the service marketing and management literature: the relation between customer perceived service quality and the design of service delivery systems in the context of service strategy. I present both motives in the next sections.

The PrimaVera Research Program on Information Management

One motivation for this research comes from the PrimaVera research program on information management at the Universiteit van Amsterdam (PrimaVera, 2002). This thesis is meant to contribute to this program.

The discipline of information management is seen as the management of information as a business resource and the management of the business – ICT relationship (Maes, 1999). The management of the business – ICT relationship should not be perceived in the first place as the management of relationships between organizational departments or different professions, but as studying the effect of ICT on organizations and the effect of business characteristics on applications of ICT. The management of the business – ICT relationship should be seen as the impact-alignment relation between ICT application and business (Henderson & Venkatraman, 1993). Information management should be seen as a major component of integral management (Maes, 1999), like marketing management, financial management, human resource management, etc. In the current state of the discipline “the importance of technological aspects has been overemphasized to the detriment of the infological aspects” (Maes, 1999). This motivated me to address questions on the distribution of services from an informational perspective and to investigate whether business characteristics in the service industry influence information patterns (which influence ICT applications). As Glazer (1991) states: “The real issue is to go beyond the technology and to consider the output, the information itself, as an important variable for analysis”.

Maes (1999) developed a generic framework for information management to position research and practitioners issues in the field of information management (see figure 1.3). All research in the PrimaVera research program is done within the context of this framework to contribute to our understanding on information management. Maes (1999) states that the middle row and column is key to information management and research in this discipline. The middle row represents the structure variables, i.e. process design, information architecture and infrastructural aspects. The middle column represents the information and communication patterns in organizations, which gives sense to the question whether ICT application is appropriate and which is central to understanding effects of the application of ICT on business practice.
During the mid-nineties, I participated in former research at the Universiteit of Amsterdam, on business reengineering (Bouman et al., 1995; Huizing, 2002). This research could be positioned on the middle row of the framework (Maes, 1999), as it addresses issues on business processes and information and ICT in business processes. This study showed some interesting developments in the field of front offices, business process control, empowerment and the application of ICT, which partly motivated this study. The study showed that through business reengineering projects:

- Knowledge on value adding and throughput time in business processes increased;
- Decentralization of responsibilities, the degree of self control and the competence to solve problems in the front office increased;
- Customer data was integrated and made available through ICT;
- ICT was applied for process control;
- The back office was controlled by the front office through ICT;
- Many organizations shifted from product focus to customer focus.

The business reengineering study indicated that ICT was applied in the front office to enable back office control from the front office, to strive for integral process control, to facilitate empowerment of front office employees and to make customer data available to the front office. The study indicated that ICT became the glue between front and back office. I asked myself the question which information needs to be provided by the ICT in the front office to enable process control from
the front office and to facilitate customer focused servicing and front office employee empowerment.

By addressing the question which information is needed for service specification in the context of service strategy, this research contributes to our understanding on the effects of business characteristics of services to ICT applications. I see service specification as an essential part of the service delivery process in which customer specific promises are made that need to be kept to contribute to customer's perceived service quality (the basic criterion the customer evaluates the service provider on). Understanding information requirements in the context of service strategy contributes to our reasoning about employee – technology – job fit in the front office and self service applications like e-commerce (customer - technology – job fit). Last but not least, this research contributes to our thinking about which information needs to be managed to support service specification in the context of a certain service positioning strategy.

The research presented in part one is positioned in the generic framework of Maes (see figure 1.4) and contributes to our insights on the structure of information patterns and the engineering of service delivery processes (the middle row). Because process engineering serves strategic service positioning purposes (Shostack, 1987), this research contributes on our thinking on strategic issues. Understanding of strategic issues in the service industry is further enhanced by positioning the concept of service process positioning strategies in the context of resource based thinking, the effects of innovations on resource enhancement and service positioning and network positioning.

The middle cell of the framework in figure 1.4, on structural information patterns, provides a more specific motivation for my research, the development of reference models on information patterns to support the application of ICT. Davis & Olson (1984) distinguish four general approaches for information requirements analysis.

Figure 1.4: The study in part one positioned in the framework for information management
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- Asking people on their requirements (by questionnaires, brainstorming, etc.). This strategy is supposed to work in quite structured situations with low uncertainty about the user’s or analyst’s ability to elicit requirements.
- Deriving from an existing system (such a system needs to exist).
- Synthesizing from characteristics of the utilizing system (the organization or a part of it) by analyzing strategic objectives, critical success factors, business processes or decisions. Davis & Olson (1984) suggest that the most logical and complete approach to elicit requirements is from analysis of the utilizing system, the domain of ICT application.
- Discovering from experimentation with an evolving system, which is often the case with prototyping. This is done in situations where the domain of application is new and the uncertainty of arriving at a complete set of requirements is high.

The third above-mentioned general approach motivates research to generate knowledge on a domain of service delivery processes to facilitate information requirements analysis in that domain. The domain in this study is service specification and the knowledge is represented by the theory in the three propositions. The model in proposition one serves as a reference work for the application of ICT in this domain. With current object-oriented software technology it is possible to generate software patterns, which are based on information patterns in the business domain. If these patterns represent the core business process logic in the domain, software based on these patterns could be enhanced with organization specific objects (for instance through prototyping, the fourth above-mentioned approach). For this reason information models don’t have to be comprehensive in the sense that all situations in the domain are covered, but it should represent the core business logic in the domain. The front office information model should be seen in this light, in which the core business logic is the matching of customer requests with the service provider’s abilities. The customer request is supported by information available on the customer (relation information) and the abilities of the organization are expressed in the structure of the service (product information) and the capacity to perform the service (process information).

Nordic School on Service Marketing and Management

The motivation for this research not only lies in the information management discipline but also in the service marketing and management discipline. It is motivated by a central theme in this discipline: the relation between customer perceived service quality and the design of service delivery systems in the context of service strategy. My thinking on this theme is primarily influenced by what has become known as the Nordic School in service marketing and management (Berry and Parasuraman, 1993).

Berry and Parasuraman (1993) give an overview of the development of service marketing as an academic discipline (more specific a sub discipline of marketing)
between 1970 and 1990. Their analysis reveals that the discipline developed academically because it filled a need in marketing practice. They state that by 1990, services accounted for more that 75 percent of the U.S. Gross National Product. Gallouj (1998) states that in most developed countries, services account for more than seventy percent of employment.

Berry and Parasuraman (1993) overview key contributors to the field. From a geographical point of view, contributions primarily came from Northern American scholars (like Berry, Parasuraman, Zeithaml, Shostack, Lovelock and Bateson), French scholars (like Langeard and Eiglier) and Scandinavian scholars (like Grönroos, Gummesson and Normann). The Scandinavian contributions have become known as the Nordic School. Berry and Parasuraman make clear that many contributors influenced each other in their thinking.

It will become clear in this thesis that my thinking has been influenced by many of these contributions as well, but I like to make explicit that this thesis should be seen in the line of thinking of the Nordic School (Gummesson, 1996; Grönroos, 1998). The following topics characterize this research tradition.

- Consumption of a service is merely process consumption than outcome consumption (Grönroos, 1998).
- As a consequence of process consumption, the nature of service marketing is different from product marketing (see figure 1.5) (Grönroos, 1998).
- The concept of customer perceived service quality as a solution to the problem of the missing product, i.e. the missing of outcome consumption (Grönroos, 1997; Grönroos, 1998).
- Service marketing and industrial marketing develop into the direction of relationship marketing (Gummesson, 1996; Grönroos, 1997), in which the concept of keeping promises is central (Grönroos, 1997).
- A network approach to relationship marketing (Gummesson, 1996) and the recognition of physical, informational, financial and social exchanges in a network (Grönroos, 1997).
- Integrating service marketing with other areas of (service) management, especially when it comes to providing service quality (Gummesson, 1996; Grönroos, 1997).
- Less quantitative research focus than in other countries and more theory generation than theory testing and consequently more inductive and abductive than deductive research (Gummesson, 1996).
- Both empirical, theoretical and holistic (Gummesson, 1996).

I follow the Nordic School line of thinking on services in the sense that I see services as processes, not as products, I incorporate service marketing and relationship marketing thinking in my thesis and I aim to make a contribution to delivering service quality through service delivery system design by integration of insights from other service management area’s, i.e. information management, organizational design and strategy. In my theory the concept of keeping promises
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(and thus knowing what to promise) is central. My research aims at theory development through abductive qualitative empirical research. The network perspective has also been taken into account in this study, although not from the very beginning. In the initial research design I took an intra-organizational perspective, which means that the unit of analysis in all case studies is on the intra-organizational level (the business unit). Throughout my study I came to the understanding that the intra-organizational perspective limits our understanding on service positioning strategies and front office design and I added insights on network positioning and network organizing to my research.

The research is motivated by a central theme in the service marketing and management literature: the relation between customer perceived service quality and the design of service delivery systems in the context of service strategy. The importance of this theme follows from the essential difference between product oriented marketing and service oriented marketing, which is illustrated by the two different marketing triangles (Grönroos, 1998) in figure 1.5.

The main difference between the two perspectives is the fact that the product, understood as preproduced bundles of resources and features, is missing in services (Grönroos, 1998) and services should be seen as a set of activities bundled in processes. From a customer’s point of view, in process consumption the solution provided by the service provider is a set of resources (personnel, technology, knowledge and information, customer’s time and the customer) that create a good customer-perceived quality and value. Keeping promises is done throughout the complete service delivery process and making sure that promises can be kept becomes an organizational design issue. For this reason integrating service marketing with other service management area’s is central to the Nordic School of thinking.

Research on the relation between information requirements for service specification and service positioning strategies is motivated by the fact that knowledge and information is recognized as being one of the resources employed in service processes. In chapter three I review the literature on research on this topic. Although several authors mention the importance of information to service delivery processes (Mills & Turk, 1986; Berry and Parasuraman, 1991; Wathen & Anderson, 1995; Tinnilä & Vepsäläinen, 1995; Stone & Woodcock, 1995), studying information requirements is probably the most neglected area in the service industry (Berkley & Gupta, 1995). Although information is regarded as a primary input to service delivery, few studies have investigated its effects on service design (Wathen & Anderson, 1995). In general there seems to be a facility bias in service analysis and classification and information and ICT as the carrier of service process logic has been neglected (Tinnilä & Vepsäläinen, 1995).

The concept of perceived service quality has been developed in the service oriented marketing perspective as a solution to the problem of the missing product (Grönroos, 1998). Perceived service quality is understood as a function of what the customer expects of the service process and what is experienced, with the experience having an outcome dimension (the what of the service) and a process dimension (the how of the service), both being influenced by the concept of keeping promises (Grönroos, 1998).
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![Diagram of marketing from a product and service oriented perspective]

Figure 1.5: Marketing from a product and service oriented perspective

It is widely recognized that service management can influence perceived service quality by service delivery design (Zeithaml, Parasuraman & Berry, 1990; Singh, 1993; Ahmed & Parasuraman, 1994; Rafiq & Ahmed, 1998; Grönroos, 1998). Management could support the interactive part of the service delivery system (in which customer contact takes place) by back office support, for instance customer databases and information systems (Grönroos, 1998).

The question which information from these information systems supports which activities in the front office and what effect could be expected on perceived service quality remains unanswered in the literature. It is beyond the scope of this research to provide a complete answer to that question. In this study, I confine myself to studying the information requirements for service specification in the front office. I assume that promises on services are made in general terms in marketing communications and that these general promises are transformed in customer specific promises on the service to be delivered in service specification. Through this study further research could be done on the relationship between information availability and perceived service quality. To be more specific, knowledge on the information requirements for service specification contributes to our understanding on providing role clarity and avoiding gap three (see figure 1.6), one of the five potential shortfalls of service quality (Zeithaml, Parasuraman & Berry, 1990).
Seven factors contribute to gap three: role ambiguity, role conflict, poor employee – job fit, poor technology – job fit, inappropriate supervisory systems, lack of perceived control and lack of teamwork. Not all these factors seem to be influenced by the availability of information. Zeithaml, Parasuraman and Berry (1990) suggest employee – technology - job fit to overcome the third and fourth factor. Knowing what information is required for the service specification part of front office jobs contributes to employee training and the quality of ICT applications to support these jobs. Furthermore, role ambiguity and role conflict could be explained by lack of information and to avoid lack of perceived control, empowerment is suggested (Zeithaml, Parasuraman & Berry, 1990). In chapter three I review several empirical studies that show that empowerment of front line employees is needed to provide customization and personalization and increases employee’s self efficacy, which all contribute to customer’s perceived quality. But empowerment also increases role conflict and thereby role ambiguity (Hartline & Ferell, 1996). Role ambiguity is a major determinant of employee’s self-efficacy, job satisfaction and adaptability, thereby in the end resulting in negative effects on customers’ perceived quality (Hartline & Ferell, 1996). The lack of information in
the context of empowerment could explain role ambiguity. This raises the question whether the distribution of information to front office employees decreases role ambiguity and role conflict and thereby contributes to customer’s perceived quality. But we can’t answer this question without answering the central question of this thesis first: what are the information requirements for service specification?

Problem Statement

A complete problem statement consists of the motivation of the study, the objective of the study, the research questions and definitions (Verschuren and Doorewaard, 1998). I already presented the research questions which are central to part one of this thesis and I already elaborated on the motivation of the study. Throughout the above presented sections I provided definitions on services, service specification, service distribution, front and back office and information management and I made my view on service management and marketing explicit. In this section I combine the three propositions to make my theory explicit and I relate the theory to the assumptions behind the theory, to the objectives of the study in part one and the motivation of the study in part one. In chapter four I present the complete research design (conceptual and technical design) and I elaborate on the propositions.

Combination of the three propositions leads to the following theory. The service positioning strategy of the service provider determines the organizational design constructs: nature of the service process (degree of customization), type of service, value-adding focus, interaction governance, management approach, marketing approach and economies. The nature of the service type or degree of customization is determined by the service positioning strategy and determines the information requirements for service specification, expressed in relation, product and process information. The relation between degree of customization to be specified and the information requirements to do so is labeled by the labels counter, one-stop-shop, field and inside service, control room and symbiosis. For mass oriented strategies, reliance on the front office types counter or one-stop-shop is expected. For scope oriented strategies, reliance on the front office types field and inside service or control room is expected. For partnership oriented strategies, reliance on the front office types control room or symbiosis is expected. If the information requirements for relation information to specify a certain degree of customization are not met, limited proactivity could be expected. If the information requirements for product information to specify a certain degree of customization are not met, limited proactivity, specification quality problems, longer specification lead-times or limited protection of the back office could be expected. If the information requirements for process information to specify a certain degree of customization are not met, specification quality problems, longer specification lead-times or limited protection of the back office could be expected.

This theory is based on the following assumptions.

- The definition of services and the main characteristics that makes services different from products: the process nature of services, intangibility and production / consumption simultaneity.
ICT Enabled Distribution of Services

- The front and back office dichotomy in service delivery design, the idea that services are distributed through replication of processes, the idea that these processes are made accessible through front offices and that process logic (at least partly) could be programmed in software and replicated through this software, making replication of services not only a matter of service facility design and personnel training but also a question of software design and distribution (through telecommunications networks).

- The idea of explicitly differentiating between two types of customer contact, one for service specification and one in service operations, the idea that in service specification the general promises made about the service delivery are translated into customer specific requests and matched with the abilities of the service provider, the idea that in service specification promises need to be made about subsequent phases of service delivery and that we have to know about these phases through information and the importance of service specifications for marketing and service delivery, expressed in the seven functions of service specification.

The objective of the study in part one is twofold. The research contributes to the knowledge regarding the dynamic and complex relationship between organizational design and the application of ICT, through contribution to our knowledge on the relationship between service strategy and the informational aspect of service delivery system design, i.e. the information requirements during service specification. The second objective is to derive a reference model that supports ICT application in the front office and that supports distribution strategy formulation in the service industry. The information model of the front office is supposed to service as a reference work for the application of ICT in the front office. The first consideration to be made is to determine the highest level of customization to be specified. Software systems, which support this level of specification, can also support the specification of lower levels of customization. Through this procedure, one presides over software, which supports varying front offices and distribution channels. The model serves as a reference work for service distribution management as well. Software, which supports multiple distribution channels, contributes to easier replication of service processes as much of today’s process logic can be programmed and distributed by software. As a result, new distribution channels can be set up relatively quickly making it possible for service providers to increase their flexibility and time to market.

The study is motivated by the PrimaVera research program on information management in which the relation between business characteristics (like service positioning strategies and service delivery design) and information patterns (like the front office information model) is studied. Former research in the context of the PrimaVera research program on business reengineering already showed some interesting developments in the field of front offices, business process control, empowerment and the application of ICT, which further motivated this study. The middle cell of the generic framework of information management on structural information patterns provides a more specific motivation for my research, the development of reference models on information patterns to support the application
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of ICT. The model in proposition one serves as a reference work for the application of ICT in the service specification domain. Understanding information requirements in the context of service strategy contributes to our reasoning about employee - technology - job fit in the front office and self service applications like e-commerce (customer - technology - job fit). Furthermore, the study contributes to our thinking about which information needs to be managed to support service specification in the context of a certain service positioning strategy.

The study is also motivated by a central theme in the service marketing and management literature: the relation between customer perceived service quality and the design of service delivery systems in the context of service strategy. Research and theory on the informational aspects of service delivery design are rare and the effect of insufficient information on perceived service quality is unknown. Knowledge on the information requirements for service specification contributes to our understanding on providing role clarity and avoiding gap three in the conceptual model of service quality (figure 1.6). To answer questions on the relationship between information availability and factors contributing to gap three, we first need to have an idea on what information is needed during service specification to make the right promise and on what happens if this information is not available.

Combining Two Disciplines

As becomes apparent from the motivation of the study, this study aims to contribute to our knowledge in two different disciplines in the broader field of business studies: information management and service marketing and management. Although combinations of insights from both disciplines are rare in the literature, the combination doesn’t have to come as a surprise.

Both disciplines share systems theory in common and thereby process-, chain- and network-thinking. The information management literature is quite explicit about it. Many introductory books in the discipline start with an elaboration on systems theory and its application in thinking on information systems, computer systems and organizational systems (Davis and Olson, 1984; Flynn, 1992; Ahituv et al., 1994). In the service marketing and management discipline, Grönroos (1997) states that relationship marketing is systems-oriented and is becoming a major marketing paradigm raising from research in industrial marketing, service marketing and customer relationships economics, thereby taking a systems view on service marketing. He states: “A systems view is well suited for a general theory of marketing, because it makes possible to include all relevant actors, environmental influence and even the process nature of marketing”. Although Grönroos’ explicitness about systems theory seems to be an exception in the service marketing and management literature, it is quite evident that idea’s on service processes, service delivery system design, front and back office dichotomy, the process nature of services and customer service quality perceptions (having an outcome and process dimension) have systems theory as its conceptual foundation. In systems theory the primary transformation process, which produces outputs based on inputs is central,
explaining the centrality of process thinking in service management and marketing and information management and explaining thinking in chains and networks when it comes to processes which go beyond organizational boundaries or the boundaries of information systems or computer systems. Both disciplines view organizations as open systems, being highly influenced by their environment. Interestingly, the observation that organizations increasingly work together in networks and that organizational boundaries become more permeable has let to the same ideas on organizational development in both disciplines. In the service marketing and management literature this led to the idea of ‘imaginary organizations’ (Gummesson, 1996), whereas in the information management literature ‘virtually organizing’ has become a research topic (Davidow and Malone, 1992; Mowshowitz, 1997; Jägers et al., 1998; Klüber et al., 1999; Alt et al., 2001). Both ideas are combined in chapter two and related to network organizing.

Furthermore both disciplines address organizational design issues and incorporate strategic thinking in their discipline. Notable examples in the service marketing and management literature are idea’s on the separation of customer contact intensive and non-intensive operations in organizational design from Chase and Tansik (1983) and Thompson (1967), idea’s on human resource management (Schneider and Bowen, 1995) and idea’s on resource based thinking on strategy and its relation with relationship marketing (Morgan and Hunt, 1994). Notable examples in the information management literature are Galbraith (1973) who views organizations as information processing devices and idea’s on the application of resource based strategic thinking on information management (Mata et al., 1995). Furthermore, idea’s on network organization from the organizational design literature found their way in both disciplines as becomes apparent from discussions on the imaginary organization and virtually organizing (see chapter two).

Rands (1992) is one of the few exceptions when it comes to explicitly combining both disciplines. His research topic, however, differs considerably from the one in this thesis. He applies concepts of service management (like the conceptual model of service quality (Zeithaml, Parasuraman & Berry, 1990)) to the management of ICT. He views several information management activities, like ICT strategy formulation, application development, package selection, network operations and help desks, as service activities.

Throughout this thesis I combine insights from both disciplines and when necessary, I complement these with ideas from the organizational design and strategy disciplines.

Structure of Part One

In part one, I present a study on the information requirements for service specification in the front office. These information requirements are related to three generic service positioning strategies. Through this I relate the informational design element of organizational design to service strategy. Part one addresses the three
above mentioned research questions and unfolds in nine chapters (excluding this chapter).

Chapter two has the title, *service strategy: processes, resources and networks*. In this chapter I derive three service positioning strategies and their main characteristics from the literature. I place these strategies in the general context of resource based thinking on strategy and resource enhancement through service innovation. I relate the process positioning strategies to a network perspective on service strategy in which service providers bundle services to satisfy and retain customers.

In chapter three, *service delivery design and the front office*, I discuss the front and back office dichotomy in organizational design in the service industry, the effect of customer contact and customization on organizational design, the differentiation between customer contacts for service specification and coproduction in service operations and the function of service specification in the front office. In this chapter the literature on service specification in the front office is explored to problemize our limited understanding of the information requirements for service delivery design in general and service specification in particular.

In chapter four, *research design*, I present the complete research design. In the conceptual design the research objectives, questions and three propositions are discussed. In the technical research design I discuss the research method (case study research), the function of the study in the knowledge accrual process, its units of analysis, the site selection criteria, the data collection and data analysis techniques and the structure of research protocol and case study database. Parts of this chapter have been published in de Vries (1997) and de Vries (2001).

In chapter five to eight, I present *four case studies* on the relation between the information requirements for service specification in the front office and the three generic service positioning strategies. In four business units of four different companies, eight front offices are analyzed and the service strategy of the four business units is analyzed. The case studies are done at Unique Nederland, Gak Nederland, Interpolis and Sioo. Unique Nederland provides flexible workforce services. Gak Nederland was a Uitvoeringsinstelling (UVI - Social security administration agency) for social insurances during the period of study and has merged into the Uitvoeringsorgaan Werknemers Verzekeringen (UWV - Body Implementing Employee Insurance Schemes) by the first of January 2002. Interpolis is a general insurance company providing all kinds of insurance services. I studied Interpolis’ employment benefits strategy and implementation. Sioo provides professionalization services to individual customers and employees of companies. I studied the information requirements in the specification process for open and in-company educational programs in the field of organizational science and organizational change, meant for academically educated professionals. The chapters are titled with the company names.

Chapter nine, titled *cross case analysis, conclusions and further research*, just contains what is in the title. In the cross case analysis the three propositions, which are central to the study in part one, are confronted with the four case studies. The basic assumptions behind the propositions are confronted with the case studies as well. Furthermore, the case studies are confronted with each other, to come to some
understanding on the industry in which all four case studies could be positioned. I denote this industry as the employability industry and define it as the service industry in which services are provided to increase the opportunities for satisfactorily lifetime employment for employed citizens and the companies they work for, and for currently and hopefully timely unemployed citizens. This industry is further discussed in chapter nine.

Target Group and Presentation Style of the Thesis

In the literature on information systems (IS) research there is some debate on the topic ‘rigor versus relevance’ (Robey and Markus, 1998; Benbasat and Zmud, 1999; Davenport and Markus, 1999). Robey and Markus (1998) state that IS research is in a crisis because we are not able to target the practitioners audience due to an overemphasis on quantitative rigor, irrelevant topics, unreadable papers and long lead-times for publication. Many of the topics which were of interest to the IS field, like business reengineering, mass customization, electronic commerce or virtual organizations has been tackled by practitioners in the literature. This is due to the rapid and continuous change associated with the application of ICT (Benbasat and Zmud, 1999). Robey and Markus (1998) propose four strategies for researchers to do more relevant research.

- Produce research that practitioners will consume by doing research for them.
- To apply research methods that makes sense to practitioners instead of overemphasizing quantitative methods and hypothesis-deductive research.
- Produce consumable research reports.
- Support of non-traditional publication outlets.

It is my intention in this thesis to target both the academic as the practitioners audience because the topic of my research is relevant today in science and in practice. Research in which enduring organizational problems and timely business issues are addressed are supposed to be well received by practitioners (Benbasat and Zmud, 1999). My research addresses the enduring organizational problem of service distribution, service delivery system design (i.e. front office design), service strategy and service innovation as well as probably more timely issues (but at least current issues) like multi-channeling and front, mid and back office architectures. These research topics have been identified during the start of the research as well as in the process of the research endeavor. The choices were based on former research as well as on dialogues with practitioners and sense making in the field of practice. This way the research is driven by the existing body of knowledge in the fields of information management and service marketing and management as well as by its relevancy to practitioners, one of the recommendations made by Benbasat and Zmud (1999).

The best characterization of my research is as being policy research. Policy research focuses on identifying and resolving policy problems by developing new
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concepts, solving practical problems or systemizing, generalizing and clarifying concepts and is proposed as one of the research models for IS research to overcome the problem of irrelevancy to practitioners (besides the models of applied research and evaluation research) (Davenport and Markus, 1999).

The chosen research method (case research) is one of which I assume that practitioners are familiar with, which is flexible enough to respond to new insights in the field and changing circumstances in cases and between cases and produces quantitative statements which are recognizable to practitioners. The empirical part of the research has always been done in cooperation with business partners, the results has been presented to management and employees and were welcomed as relevant.

I have chosen a presentation style, which is current in the academic literature and still accessible to practitioners, thereby following the third recommendation of Benbasat and Zmud. Only the presentation style in the technical research design in chapter four and the style in the chapters nine and twelve is quite academic.

As the topic of my research is quite new, I used publications in my literature research from traditional scientific journals as well as from managerial and practitioners oriented publication outlets like Harvard Business Review, Sloan Management Review or Dutch journals like Tijdschrift voor Informatie en Management. Furthermore I tried to incorporate insights from other research disciplines (mainly service management and marketing) to insights in my own field of research, the IS discipline; a research strategy proposed by Benbasat and Zmud (1999) to enrich the relevancy of the IS discipline.

The practitioner target audience of this thesis are those people who have their working field in the (private or public) service industry (or service intensive physical goods industry) in disciplines like strategy, marketing, organizational design, information management, distribution, product development, product management or human resource management. The organizations in the case studies all provide services in what I denote the employability industry. Therefore people who work in the flexible workforce industry, the financial industry, education, the occupational health care industry, the re-integration industry or the social insurance industry belong to the target audience of this thesis. As this thesis contributes to our thinking on information management and information systems, those working for the consulting and ICT industry also belong to the target audience.

The academic target audience is those people with research interest in information management, service marketing and management, relationship marketing, (service) strategy or organizational design. Furthermore, people who are interested in the application of the research method case studies, especially in the information systems discipline, are invited to read this thesis.

My style of writing follows ideas from pyramid thinking, i.e. the main topic of interest in a text section is introduced first followed by its argumentation. The main topic might be a theme, model, statement or conclusion. The arguments for presenting the theme, model, statement or conclusion will then follow. Throughout this thesis I use the male style. Both male and female readers are invited to read the word he as he/she or she/he. To prevent the well-known passive style of writing in the academic literature, I use an active style of writing, the ‘I-style’. When it comes to referring to other people’s work, I frequently use a style in which these people are
brought actively into my work, like in phrases like: “Maes (1999) developed a generic framework for information management” or “Grönroos (1990) also differentiates between customer contacts in service specification and service fulfillment”. In the case studies in chapter five to eight, I refer as much as possible to the research material (mainly by document references or interview quotes). In the interview quotes, I deliberately let the interviewees tell their story, to bring them actively into my work. My underlying idea was to let every case tell its own story without losing structure (which comes from the theory under study).