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Design decisions in the front office - back office issue

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2 Review of Existing Insights

Having introduced the main objective and research questions of this study, as well as the research perspective and the empirical domain, in this chapter we present the findings from a literature review. We conducted this literature review for two purposes. On the one hand, it was meant to improve our understanding of the context in which this research takes place. Understanding the context will contribute to identifying relevant literature to review, interpreting that literature and interpreting the findings from our own empirical research. Therefore, we pay attention to the distinct characteristics of services compared to manufactured goods and some key themes in service operations management (2.1), the emergence of the concepts of “front office” and “back office” in literature (2.2) and several typical attributes and research issues regarding financial services (2.6).

On the other hand, the literature review was meant to identify the elements from the current body of knowledge that can serve as building blocks or ingredients for the framework we plan to develop. We expect that although additional insights are required, we can build on existing insights. To that end, we present the available theory on front office and back office activities in service delivery processes in 2.3. However, the amount of contributions concentrating on the exact issue of front office and back office activities is rather limited. Therefore, we decided to broaden our scope, by including contributions that address process design issues on a higher level of abstraction. There are two themes that seem most relevant for the front office – back office issue, in the sense that they will render valuable contributions to the framework to be developed: first, trade-offs in design decisions and second, service design frameworks. First, as some of the design decisions related to front office and back office activities in service delivery processes seem to be characterized by trade-offs between performance objectives and trade-offs are a common phenomenon in operations management, we elaborate on the concept of trade-offs in 2.4. Second, in 2.5 we address the large number of strategic service design frameworks that are available. These frameworks relate service process design to service product design, service strategy and service performance. Thus, they can provide useful insights in the considerations underlying design decisions and the factors influencing the considerations.

In this way, the literature review will reveal several aspects, e.g. variables or relations, that can be included in our framework addressing design decisions regarding front office and

back office activities in service delivery processes. It will also show which insights are particularly missing in order to arrive at the framework we plan to develop. These insights are to be obtained through this research study. At this point, we emphasize that the consolidation of the findings from the literature review will partly take place in chapter 4, where we develop a conceptual model that will guide the empirical part of this study.

2.1 Services and service operations

Service issues have received attention for a number of decades now. The attention spans several fields and disciplines, including marketing, HRM, operations and strategy. The interest in services originated from the idea that services are different from goods and therefore have their own management challenges and require their own approaches (Mills and Margulies, 1980; Mills and Moberg, 1982; Shostack, 1977). This can be viewed as a reaction to implicit and explicit assumptions that services can and should be managed in the same way as manufactured goods (e.g. Levitt, 1972; 1976). In general, the difference between services and goods is expressed in four well-documented service characteristics (e.g. Sasser et al., 1978; Zeithaml et al., 1985; Nie and Kellogg, 1999): intangibility, inseparability of production and consumption, heterogeneity and perishability.

First, services are often intangible, i.e. they cannot be touched, seen and tasted in the same manner as manufactured goods. This brings about all kind of problems for marketing (Shostack, 1977) and operations, such as quality management (Parasuraman et al., 1985). Yet, services are often accompanied by facilitating goods. To address this, some authors do not refer to services, but to the “consumer benefit package”, the “service concept” or “service package”. In this research, we use the term “service” to keep the language simple, but refer to the bundle of core and peripheral services. Second, whereas goods are often first produced, then sold and then consumed, services are usually first sold and then produced and consumed simultaneously. This means production and consumption are inseparable. This entails close contact between service providers and customers through customer presence, customer interaction or customer participation in the service delivery process. This customer influence provides a source of complexity that is not generally found in manufacturing operations (Nie and Kellogg, 1999). In addition, it is the inseparability of production and consumption that is responsible for the existence of front office and back office activities that is so specific for services, compared to goods. Third, services are considered to be more heterogeneous than goods, due to the potential for high variability in the performance of services. This follows from the high labor intensiveness of several services and from the customer influence. In fact, the output of a service can vary from service provider to service provider, from customer to customer and from day to day. Finally, the fourth characteristic of services is their perishability, following from their intangibility, meaning that services cannot be put on a shelf and inventoried to be sold

later. This leads to difficulties in demand management, capacity utilization, production planning and personnel scheduling (Nie and Kellogg, 1999).

Despite these four general characteristics, not all services are alike. In fact, our world consists of a wide variety of services, including health care, transportation, hotels, hairdressers, education, consulting services and financial services. It is evident these services cannot all be managed in the same way. Moreover, there has been a debate whether services are really different from goods. Some authors argue that, instead of concentrating on the dichotomy of goods and services, we should look for the dimensions that really make a difference (see, e.g., Morris and Johnston, 1987). To make distinctions between different types of services that show similar management challenges in order for service firms to learn from each other, several authors have developed classification schemes. Actually, there is a plethora of classification schemes available, mostly two-by-two matrices. For a review of service classifications, see Cook et al. (1999). Well-known classifications are the matrices presented by Chase (1978), Mills and Margulies (1980), Maister and Lovelock (1982), Lovelock (1983), Schmenner (1986) and Wemmerlöv (1990).

In order to address the operations management challenges of service organizations, the field of service operations management emerged. Like operations management in manufacturing organizations, operations management in service organizations consists of designing, operating and improving the productive systems of the organization. The field consists of, on the one hand, operations management principles that were traditionally developed for manufacturing services, but have been applied in service settings. See, for example, Levitt (1972) for the industrialization of services and Sasser (1976) for capacity management in service industries. Johnston and Morris (1985) pay attention to control issues in service organizations. McLaughlin et al. (1991) address the different operations strategy planning process for service operations. Several authors have tried to develop product-process matrices analogous to the Hayes and Wheelwright framework (1979a; 1979b), including Silvestro et al. (1992), Kellogg and Nie (1995) and Collier and Meyer (1998). Following recent developments in manufacturing, Bowen and Youngdahl (1998) advocate the concept of “lean service”. On the other hand, the field of service operations consists of concepts, tools and techniques that have been specifically developed for service organizations, as the existing operations management material did not seem to provide enough help in some of the central issues faced by service operations managers (Johnston, 1999). These key issues are mainly related to the four distinct service characteristics of intangibility, inseparability of production and consumption, heterogeneity and perishability. They led to contributions regarding, among others, the service encounter (Bateson, 1985; Czepiel et al., 1985; Shostack, 1985), customer participation (Lovelock and Young, 1979; Bowen, 1986; Mills and Morris, 1986; Lengnick-Hall, 1996) and capacity utilization strategies such as yield management (Kimes, 1989). For more extensive reviews of service operations management, see Chase (1996), Johnston (1999) and Nie and Kellogg (1999).

2.2 Front office and back office in literature

From the beginning of service operations as a field of study, the concepts of “front office” and “back office” have been included in the literature (see e.g. Chase, 1978; Matteis, 1979; Voss et al., 1985). It seems that the appearance of front office and back office in literature followed current practice in service organizations. In fact, the terms probably originated from practice, rather than theory, particularly from financial services. For example, Levitt (1972) explains about Citibank: “It has about 37,000 employees, over half of whom deal directly with the public, either selling them things or helping them with the things they have already bought. Most of the other employees work back in what is called “the factory” – a massive congeries of people, paper, and computers that processes, records, validates, and scrutinizes everything the first group has done” (p.42). Matteis (1979) also discusses the back office of Citibank, which is the seat of the bank’s financial transaction processing or “operations headquarters”. Chase (1978) mentions the front office and back office capacity of the Arizona Auto Licensing Bureau as a case example.

In accordance with the examples cited above, the terms front office and back office are often used to indicate different parts of a service organization. According to Johnston and Clark, “the front office is the interface between the organization and the customer or user. The front office contains the part of the process that ‘processes’ customers and is the part that the customers directly ‘experience’. Back office operations contain processes carried out remotely from the customer/user interface” (Johnston and Clark, 2001, p.9). Shostack (1984; 1982) draws a line of visibility in her service blueprints to indicate the parts of the service organization that can be seen or experienced by customers and the parts that are not directly seen or experienced by customers, but are necessary for service delivery. Thus, service organizations are often depicted to consist of two parts: a front office and a back office. Although different terms are in use, such as “on stage”, “front stage”, “back stage”, “front line” and “back room”, “front office” and “back office” seem to be most common. In addition to the authors that address front office and back office as different parts of a service organization, some authors refer to front office and back office employees (Larsson and Bowen, 1989), front office and back office work (Metters and Vargas, 2000) or processes with front office and back office orientations (Safizadeh et al., 2003). In general, front office activities are carried out by front office employees in front office departments and vice versa for back office activities.

The terms found their way into literature as part of the debate whether and how services are really different from goods. It was recognized that although services have many idiosyncratic characteristics, such as intangibility, customer influence and heterogeneity, that distinguish them from goods and cause all kinds of problems for operations and marketing, the back office part of service organizations greatly resembled manufacturing type organizations. In fact, back office work could even be organized along the same

principles. See, for example, Chase (1978) who points out that the production management concepts related to batch scheduling, forecasting, inventory control, work measurement and simplification can and should be applied to low-contact service systems. In one of the first books on service operations, Voss et al. (1985, p.9) state that: “The operational management methods applied to ‘back room’ activities are very similar to those found in many traditional manufacturing operations; indeed, many of the activities in the ‘back room’ of service organizations are manufacturing in the terms of our definition of making goods (including repairing) and compiling on paper (or on a computer)”. Thus, whereas front office work reflects the peculiarities of delivering services instead of goods, the back office parts of a service organization were embraced as being amenable to the well-known production principles of that time.

2.3 Front office and back office theory

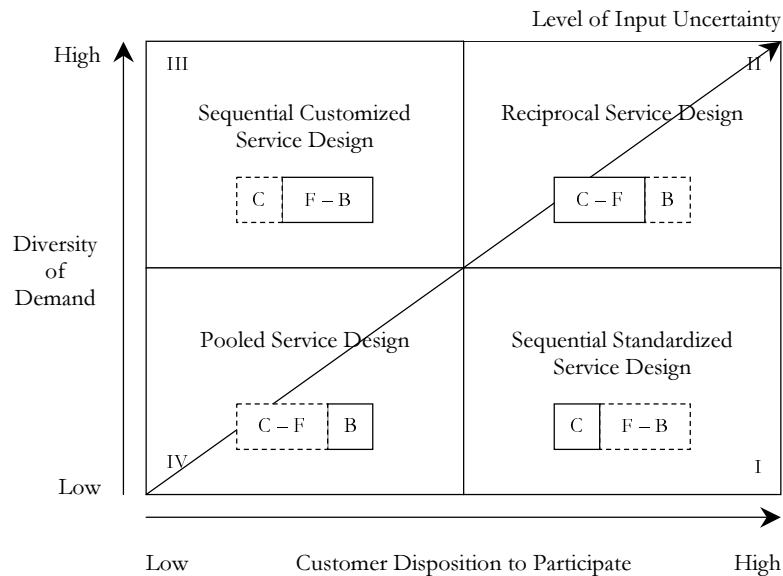
A number of authors have addressed the issue of front office and back office activities in service delivery processes, in order to find ways for dealing with the different design requirements and performance effects. The customer contact approach developed by Chase (1978; 1981) and Chase and Tansik (1983) is classic in this respect. According to this approach, not all services are equal in terms of what they can achieve in the way of efficiency, because of differences in the extent of customer contact in the creation of the service. Customer contact refers to the physical presence of the customer in the service delivery system. The degree of customer contact is defined as the percentage of time the customer must be in the system relative to the total time it takes to serve that customer. Along this reasoning, Chase identifies three broad categories of services with decreasing customer contact: pure services, mixed services and quasi-manufacturing. Pure services, such as restaurants, psychotherapy and hairdressing, entail a severe amount of customer contact; mixed services, like financial services and tailoring, often include a combination of contact and non-contact tasks; and quasi-manufacturing services, such as car repair and dry cleaning, mostly consist of non-contact activities. The basis premise of the customer contact approach is that high-contact activities are more difficult to control and to rationalize than low-contact activities due to all kinds of disturbances caused by the customer. In low-contact service delivery, however, the technical core can be sealed off from the environment, thus generating a higher degree of efficiency. Consequently, Chase recommends decoupling a service delivery process in high-contact and low-contact organizational subunits, i.e. front office and back office. In order to maximize the efficiency of the system, as many tasks as possible should be performed in the back office. Later, Chase and others elaborated the customer contact approach. They realized that shifting many service activities to a remote back office overlooks the fact that there are positive benefits to both the customer and the organization by having the customer closely linked to the server, even though the job is traditionally performed in the customer’s

absence. First, high levels of contact between a customer and service provider can generate marketing benefits, as for certain services the longer the customer is in the system, the greater the potential for sales. Thus, although customer contact is negatively correlated with production efficiency, it is positively correlated with marketing effectiveness. Therefore, any service business should find the form and amount of customer contact that balances the efficiency potential from low contact with the sales opportunities from high contact (Chase et al., 1984; Chase and Bowen, 1989; Tansik, 1990). Second, Chase and Hayes (1991) argue that, from an information exchange perspective, the greater the links between customer and producer, the easier it is to understand and respond to the customer's needs. This means front office tasks offer opportunities for customization or personalization of a service, which increases customer satisfaction. Third, presence of the customer in the service delivery system provides the opportunity of customer participation. Having customers on-site means they can supplement or substitute for the labor provided by employees. This can significantly enhance service system efficiency. Several authors have addressed customer participation as a means of increasing productivity (e.g. Lovelock and Young, 1979; Mills et al., 1983; Bowen, 1986). Furthermore, customer participation is not only beneficial to productivity, but can also enhance the quality of the service as perceived by the customer, for example through time and cost savings, greater control over the service delivery process and enjoyment from the use of technology (Lengnick-Hall, 1996; Dabholkar, 1996; Meuter and Bitner, 1998). Thus, arguments related to marketing benefits, customization and customer participation advocate front office activities instead of shifting as much work as possible to a back office.

The customer contact approach has been criticized for failing to discriminate between services that merely accommodate the customer and services that require interaction between customers and service providers (Schmenner, 1986; Wemmerlöv, 1990). As a reply, Mersha (1990) presents a broader definition of customer contact that includes both physical presence and interaction. In addition, he develops a revised model to assess the potential operating efficiency of service facilities.

An alternative approach to the design of front office and back office work is presented by Larsson and Bowen (1989). They address the division of labor among front office employees, back office employees and customers and the way in which coordination is achieved. Their framework consists of four service design configurations (see also figure 2.1): (1) sequential standardized service design, where customers perform most of the work themselves, (2) reciprocal service design, where customers and front office employees engage in interactive service production, (3) sequential customized service design, where front office and back office employees carry out the service delivery process, and (4) pooled service design, where most work is allocated to back office employees. Whereas in the customer contact approach front office and back office decisions are roughly based on the trade-off between production efficiency and marketing effectiveness, Larsson and Bowen base their framework on the diversity of customer demand and the customer's

Figure 2.1: A typology of service interdependence patterns matching input uncertainty



Source: Larsson and Bowen (1989, p.221)

disposition to participate in the service delivery process that together create a particular level of input uncertainty. If customers are likely to participate in the service delivery process, work can be shifted from service employees to customers. In addition, if the diversity of demand is high, the need for customization will be greater, hence coupled divisions of two of the three parties that work more interactively are required (i.e. customers and front office employees or front office and back office employees). For each configuration Larsson and Bowen include a portfolio of coordination mechanisms. The main differences between the Larsson and Bowen framework and the customer contact approach are that Larsson and Bowen explicitly include the customer as a production resource, that they look at front office and back office employees rather than front office and back office departments, base their design on different variables and include strategies for coordination between customers, front office employees and back office employees.

In a recent article, Metters and Vargas (2000) also address the structuring of front office and back office work. They concentrate on the decoupling issues that are involved, whereby decoupling is defined as breaking a process into its component back office and front office activities, segregating those activities into distinct front office and back office jobs, and, usually, geographically separating the back and front offices. Traditionally, academic literature has argued that extensively decoupling of front office and back office work is needed to increase productivity (e.g. the customer contact approach). On the other

Figure 2.2: Consistent Strategic Choices for Decoupling Strategies

Service	Personal Service Keep coupled to enhance service	Focused Professionals Decouple to exploit employee expertise
	Kiosk Keep coupled to reduce idle time	Cost Leader Decouple to reduce costs
Strategic Operational Focus	Low	High
Cost	Level of Back Office / Front Office Decoupling	

Source: Metters and Vargas (2000, p.671)

hand, in case of customized services, coupling of front office and back office work is preferred to facilitate interaction (e.g. Larsson and Bowen, 1989). Metters and Vargas argue that “the decoupling decision has more texture than those alternatives – that in certain business situations, decoupling is used to provide higher service, whereas in other situations, a highly coupled approach is necessary to lower costs” (2000, p.664). Based on evidence from the banking industry, they identify four decoupling strategies that are related to strategic operational goals, as illustrated in figure 2.2. In the traditional Cost Leader type, back office activities are decoupled from the front office for the purpose of lowering costs, as the efficiency potential of back office can so be realized. In the Kiosk type, however, back office and front office activities are coupled for cost reasons. In this strategy, front office employees perform back office activities to occupy the idle time that results from irregular customer arrivals. When service firms are confronted with relatively large amounts of idle time, it is actually more efficient to have front office employees carry out back office activities than to operate a back office department. The third decoupling strategy is the Personal Service type. Here, decoupling is low like in the Kiosk type, i.e. front office employees also perform back office tasks, but for different reasons. In this case, the main reason for a coupled process is the high level of personal service that is pursued, requiring high levels of flexibility and responsiveness. To create relationships with customers, deliver customized products and high quality service, a design in which front office employees carry out most of the back office work themselves is appropriate. Finally, in the Focused Professional decoupling strategy, high levels of service are achieved through a decoupled process. This strategy is based on the different skills and employee types that are required for front office and back office work. It is well known that front office activities mainly

require interpersonal skills, whereas back office work often needs more technical or analytical skills. By decoupling front office and back office work, different types of employees can be hired and their expertise can be fully exploited. Doing so, customer service experts that are supported by back office specialists can deliver high quality service. The Metters and Vargas framework significantly adds to the customer contact approach, emphasizing that decoupling front office and back office work in isolated departments is just one of the options available.

Finally, Safizadeh et al. (2003) conduct an empirical study to gain a better understanding of (financial) service processes with a front office or a back office orientation. This distinction seems to be similar to Chase's high contact and low contact systems. They found that processes with a front office orientation are significantly different from processes with a back office orientation with regard to a large number of aspects, including the mode of interactions between customer and service provider, the degree of customization, the degree of labor intensiveness, facility utilization and performance consistency. Yet, unlike their expectations, the best performers among the processes with a front office orientation emphasize capital investment, while the best performers among those with a back office orientation have higher degrees of labor intensity. Nevertheless, they conclude these findings by and large support the premise of the customer contact model for breaking up the activities involved in a service delivery process in front office parts and back office parts.

To conclude, several authors have addressed the front office – back office issue in service delivery processes and provide insights in the design decisions and underlying considerations. This mainly regards the trade-offs involved in choosing between front office and back office activities and the issue of coupling or decoupling front office and back office activities. For example, the customer contact approach advocates strict separation of front office and back office activities to seal off back office activities from disturbing customer influences. The typology of decoupling strategies developed by Metters and Vargas illustrates additional opportunities for structuring front office and back office work. Still, these contributions do not form a coherent “design theory” for front office and back office activities in service delivery processes. They mainly address individual issues rather than the collection of design decisions involved, do not yet include the opportunities offered by information technology and are often based on relatively simple binary classifications that might not capture the complex issues service organizations are facing today (see also the following section).

2.4 Trade-offs in design decisions

Based on our review of front office – back office theory, we can conclude that several design decisions and considerations involve trade-offs between certain benefits. For example, back office activities have greater efficiency potential than front office tasks, but lack the potential for cross selling. Likewise, coupling front office and back office activities comes at the expense of specialization and the opportunity for sealing off back office work. Hence, trade-offs are a recurring concept in the front office – back office issue and will be a significant part of the framework to be developed in this research. However, we also put forward in the introduction to this research that today's service organizations are forced to perform well at multiple performance criteria and can hardly afford trade-offs. Therefore, understanding the trade-offs in the front office – back office issue, including ways in which they might be overcome, is vital. In this section we review literature that addresses the concept of trade-offs in general, to find out more about their origin, how they work and whether they can be overcome. This can provide valuable insights for the framework to be developed.

The occurrence of trade-offs is not uncommon in the field of operations management. In fact, they are an intrinsic part of strategic, tactic and day-to-day operational decisions. The basic idea, as expressed in the manufacturing strategy literature, is that organizations cannot be exceptionally good at every single aspect of performance at the same time. In order to excel in some particular aspects of performance, they have to, to some extent, sacrifice performance in others (Skinner, 1969; 1974). For example, an increase in customization of products on offer will most likely lead to an increase in costs. Other trade-offs are, for instance, the trade-off between efficiency and quality of cross-trained workers (Pinker and Shumsky, 2000) and the trade-off between service and sales in call centers (Aksin and Harker, 1999).

Yet, the trade-off principle is now subject to debate and revision (New, 1992; Mills et al., 1995; Da Silveira and Slack, 2001). The debate is triggered by the fact that some companies have overcome trade-offs, most notably the one between cost and quality. With respect to service operations, Menor et al. (2001) found that operations agility is a viable option for retail banks. Agile firms do not trade-off one operations capability for another. These developments are often supported by technological advances and enforced by competitive pressures (e.g. Goldhar and Jelinek, 1983; Boyer and Lewis, 2002). Instead of being subject to trade-offs, competitive priorities are viewed to be cumulative (Ferdows and De Meyer, 1990; Corbett and Van Wassenhove, 1993). "World Class Manufacturers" show concurrent improvements in quality, cost, flexibility and delivery (e.g. Schonberger, 1986). For example, McDermott et al. (1997) conclude that new processing technologies (single-minute-exchange-of-die, computerized numerically controlled machinery), management practices (cellular manufacturing, just-in-time, continuous improvement) and advances in information systems (flexible manufacturing systems, computer-integrated manufacturing)

have allowed firms to move beyond trade-offs, in particular between responsiveness and low cost. In fact, McDermott et al. claim trade-offs are transformed into strategic combinations and firms face a much less restrictive set of manufacturing options than they did in the past. Developments in information technology play an important part in this. In general, information technology can create new design options for various processes because it can be used to challenge longstanding assumptions about work arrangements that used to inhibit organizations. An example is the issue of (de-) centralization provided by Hammer (Hammer, 1990, p.110): "decentralizing a resource, whether people, equipment or inventory, gives better service to those who use it, but at the cost of redundancy, bureaucracy and missed economies of scale. Companies no longer have to make such trade-offs. They can use databases, telecommunications networks and standardized processing systems to get the benefits of scale and coordination, while maintaining the benefits of flexibility and service". In addition, even the classic product-process matrix of Hayes and Wheelwright (Hayes and Wheelwright, 1979a) can be challenged. Recent advantages in information technology have enabled firms to operate in off-diagonal positions without the performance penalties predicted by the Hayes and Wheelwright framework (Noori, 1990; Kellogg and Nie, 1995; Das and Narasimhan, 2001). Thus, these examples illustrate several traditional trade-offs can be overcome.

Still, these contributions have not yet succeeded in displacing entirely the trade-off paradigm. Most authors still adhere to the existence of trade-offs in operations management decisions, yet refined. For a review of the compromise between advocates and opponents of trade-offs, see Da Silveira and Slack (2001). Two main refinements or additions to the concept of trade-offs can be identified. First, trade-offs have a certain level of sensitivity. Sensitivity means the degree of change occurring in one competitive objective in a trade-off when change occurs in the other (Da Silveira and Slack, 2001). In highly sensitive trade-offs the improvement of one competitive priority causes a significant deterioration in the other, whereas in relatively insensitive trade-offs one competitive objective can be changed over a range with little change in the other. In this way, the negative effects of a trade-off do not need to be severe. Second, trade-offs are nowadays considered dynamic; they do not need to be seen as relationships that are largely fixed and immutable. The classical trade-offs are either gradually disappearing or substantially changing their nature, following changes in technologies, resources or organizational capabilities (Da Silveira and Slack, 2001; New, 1992; Skinner, 1992). In conclusion, operations decisions often require two distinct strategies: on the one hand "trading-off" performance objectives where required and on the other hand "overcoming trade-offs" where possible.

Despite the significant amount of theory and empirical research addressing the concept of trade-offs in operations management, there is no final answer to the question which trade-offs remain and which ones can be overcome and in what ways. Consequently, there is a

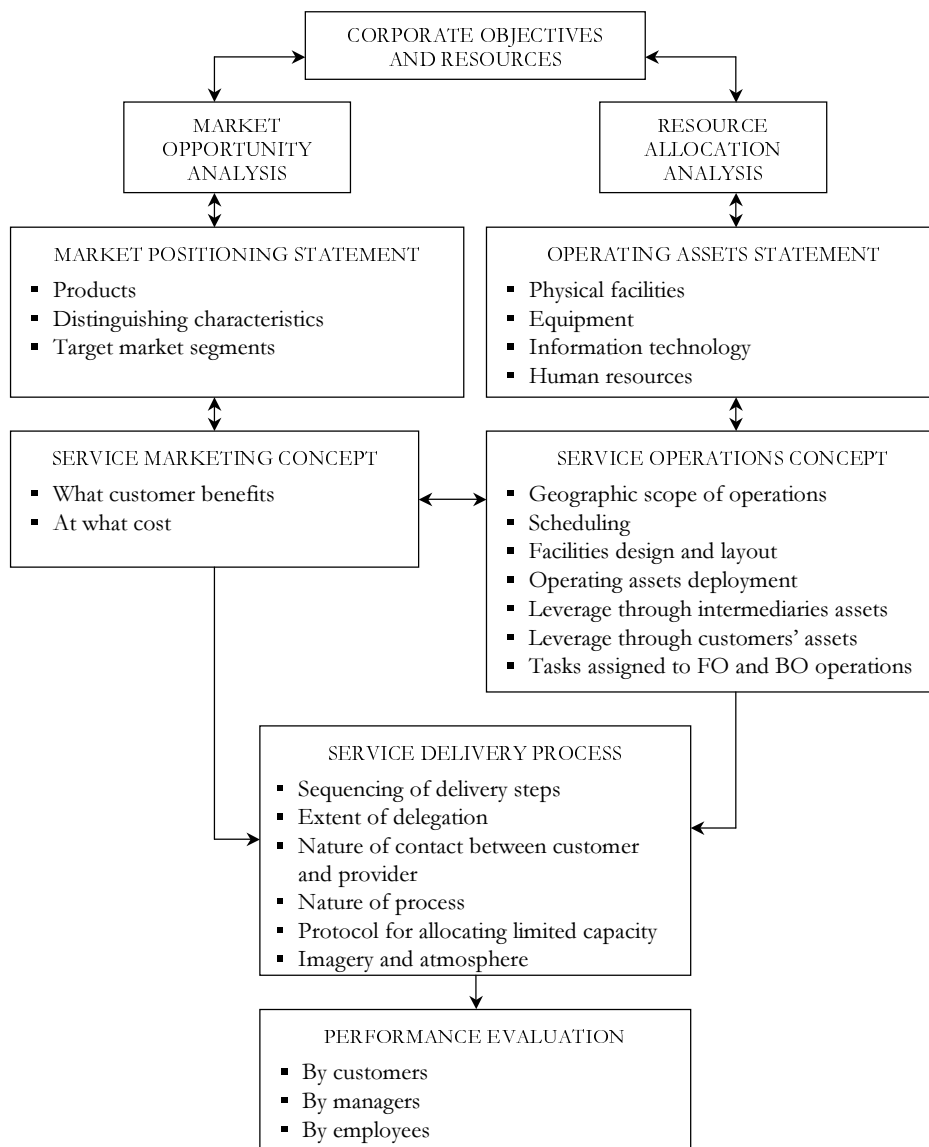
call for more research on understanding trade-offs or “performance relationships”, instead of debating whether or not trade-offs really exist. For example, Skinner (1992) states that it is vital to obtain a better understanding of the technological constraints that influence process design, to be as specific as the state of the art will allow on the impact of technology on the relationships between different design and performance characteristics. Da Silveira and Slack (2001) recommend focusing on identifying trade-offs that are significant for a specific operation and on the process for overcoming trade-offs. This also applies to the trade-offs involved in the design decisions regarding front office and back office activities in service delivery processes. Although some trade-offs have received considerable attention and can be considered “classic”, anecdotal empirical evidence suggests that technological advances and competitive pressures are changing their appearance and sensitivity. For example, front office activities do not necessarily have to be highly inefficient, if they are supported by an appropriate information system and additional measures control the arrival rates of customers and their specific demands. A major bank in the Netherlands, for instance, now demands its customers to make appointments for purchasing new products. On the one hand, this measure increases the potential for cross-selling additional products and on the other hand balances the flow of customers, which improves the efficiency of front office activities. Likewise, many banks have found a way of centralizing back office activities while maintaining certain levels of flexibility and service quality. Yet, a detailed understanding of the performance relationships involved in the front office – back office issue in service delivery processes is still missing. Thus, in order to develop a framework that provides insight in and so supports the design decisions regarding front office and back office activities in service delivery processes, we should concentrate on identifying which trade-offs remain and which ones can be overcome.

2.5 Strategic service design frameworks

The previous sections on front office and back office theory and trade-offs have provided some useful insights in the design decisions and considerations regarding front office and back office activities in service delivery processes. In this section, we broaden our scope to find indications for variables that might influence the considerations and ultimate choices. As we explained in the introduction to this research, we expect design choices to depend on certain factors. A valuable source of information for identifying such factors is the collection of “strategic service design frameworks”. Strategic service design frameworks are frameworks that address the design of services from an aggregate perspective, relating service process design to service product design, service strategy and service performance. They basically show the position of service process design in a larger design operation. In this way, we can derive which variables are potentially relevant for process design issues, including the design decisions regarding front office and back office activities.

A large number of frameworks, often depicted graphically as block diagrams, can be identified. See, for example, the framework of Sasser et al. (1978), Heskett's strategic service vision (Heskett, 1986), the Service System Model of Grönroos (1990; 2000), the competitive service strategy paradigm of Roth and Van der Velde (1991), the service encounter cone of Collier (1994) and the service design planning model proposed by Meyer

Figure 2.3: Lovelock's model for planning, creating and delivering services



Source: Lovelock (1996, p.31)

Goldstein et al. (2002). As an illustration we have included the model presented by Lovelock (1996) in figure 2.3. Ramaswamy (1996) presents a well worked-out “total design methodology to service process design”, amply provided with tools and techniques to support each of the eight stages in the design process. Although these and other frameworks may look very different and use their own wording, they have several general characteristics in common. We describe two general characteristics that provide insights in the variables that might influence the design of service delivery processes.

To begin with, most strategic service design frameworks relate service process design to service product design. Although some have the definition of a service concept precede the design of service delivery systems, while others view them as parallel operations, they agree on the existence of a relation. For example, Heskett (1986) recommends determining target market segments, defining a service concept, developing an operations strategy and finally designing the service delivery system. Yet, according to Sasser et al. (1978) the service concept dictates and is defined by a service delivery system. Nevertheless, we can conclude that the service concept, or “what” is being delivered, is probably one of the variables exerting influence on the design of service delivery processes. This relation is also addressed in another category of frameworks, i.e. service positioning matrices that are based on the product-process matrix by Hayes and Wheelwright (1979a; 1979b). A broadly shared idea in manufacturing literature is that volume and variety characteristics of a product shape the general approach an organization takes to managing its processes. The product-process matrix of Hayes and Wheelwright has gained wide acceptance in describing product-process choices in manufacturing organizations. The basic idea behind the matrix is that product mix, characterized by the volume and variety of products, determines the choice of process type, i.e. job shop, batch, assembly line or continuous flow. Several authors have tried to develop similar matrices for services to address the relationship between service product and service delivery process. They aim at identifying relevant product or service characteristics that are determinants of process types, such as volume and variety or other variables, and at identifying general process types in service organizations with their accompanying characteristics. Among them are Huete and Roth (1988), Silvestro et al. (1992; 1999), Apte and Vepsäläinen (1993), Tinnilä and Vepsäläinen (1995), Kellogg and Nie (1995) and Collier and Meyer (1998; 2000), see also table 2.1. Although to date no service matrix has dominated the literature like the product-process matrix has for manufacturing, there seems to be enough reason to accept the impact of a service on the design of its process. In particular the degree of service customization, or similar concepts, appears to be mentioned repeatedly.

Returning to the large number of strategic service design frameworks, another aspect most of them have in common regards the relatively broad definition of a service concept. In general, a service concept entails the benefits customers can expect, in terms of the service product and the associated levels of service or strategic priorities. For a savings account, for

Table 2.1: Service positioning matrices		
Authors	Independent variables	Dependent variables
Huete and Roth (1988)	Potential standardization of service content (service complexity + customer knowledge)	Industrialization of delivery channel
Silvestro et al. (1992)	Number of customers processed by a typical service unit per day	<ul style="list-style-type: none"> ▪ People/equipment focus ▪ Customer contact time ▪ Degree of customization ▪ Degree of employee discretion ▪ Back office/front office value added ▪ Product/process focus
Apte and Vepsäläinen (1993)	Service package (customer contact strategy + complexity of service contract)	Service delivery channel (level of human intermediation + type of information system)
Tinnilä and Vepsäläinen (1995)	Complexity of service	Length of channel
Kellogg and Nie (1995)	Service package structure (customization)	Service process structure (customer influence)
Collier and Meyer (1998)	Customer's service encounter activity sequence (discretion + repeatability)	Number of pathways (number of unique pathways + control)

example, the service concept not only includes its technical specifications, but also its attributes with regard to e.g. price, quality, customization and purchasing convenience. This indicates a relation between service process design and the strategic positioning or service strategy of a service organization. This idea is similar to manufacturing strategy thinking, i.e. that operations' aspects should follow from an operations strategy that is derived from the corporate strategy defining the products and market segments (Skinner, 1969; Hill, 1989). In other words, the operations function should be capable of delivering what the corporate strategy requires. This does not mean, though, that the corporate strategy is solely based on market requirements, ignoring operations capabilities. For service delivery processes the relation between service system and service strategy is worked out by, for example, Armistead (1990), Chase and Hayes (1991) and McLaughlin et al. (1991). Therefore, we expect that service strategy is one of the variables influencing the design of service delivery processes.

Based on this review of several strategic service design frameworks, we conclude that both the characteristics of a service and its strategic positioning can exert influence on the design of service delivery processes. Still, these two variables are basically groups of variables that require further operationalization and tailoring to the front office – back office issue. The strategic service design frameworks do not reveal which service characteristics and strategic

aspects are particularly significant and do not pay specific attention to the design decisions regarding front office and back office activities. This is one of the voids that need to be addressed in the remainder of this research.

2.6 Financial services as object of study

Financial services are a well-researched domain in the field of service management. The term often includes a wide range of services, such as retail banking, private banking, merchant banking, insurance, housing finance and brokerage. In today's deregulated markets, these traditionally separate sectors have become increasingly integrated. Table 2.2 characterizes financial services according to a number of service classifications available. Some distinguishing characteristics of financial services are that they involve information processing, a combination of front office and back office work and operating from multiple sites. Furthermore, most financial services have in common that they aim for a membership relationship with their customers. Yet, financial products and processes vary widely from low degrees of complexity and customization to high levels of complexity and customization. In addition, a whole range of delivery options is available, including different forms of technology-based service delivery or personal contact and delivery from a diversity of locations.

From the early days of service research until now, financial services serve as examples, motives or areas of application for research. The appeal of the financial services sector is probably related to the fact that it is a large, global and significant industry, for example in terms of the number of people employed, its contribution to the Gross Domestic Product of most countries and the indirect role in the economy by means of mobilizing savings and allocating credit across space and time (Harker and Zenios, 1999). Additionally, the financial services sector has some distinguishing characteristics that make it an attractive research object, such as the large differences in strategies and operating systems of the organizations in the sector, the diversity of products and services that are available and the pressure on financial performance and customer satisfaction. Furthermore, in addition to these complexities, the financial services sector is characterized by a high rate of changes and developments, often related to the use of information technology. As many financial service organizations have addressed the need for improvements and innovation, the sector is an attractive area that generates research questions, illustrates advances in the field and benefits from research outcomes.

We distinguish four themes in research regarding financial services that might be relevant for this research. They are described below.

Table 2.2: Classifications of financial services		
Basis of classification	Service types	Classification of financial services
Morris and Johnston (1987): Inputs that are processed	<ul style="list-style-type: none"> ▪ Customer processing operations ▪ Information processing operations ▪ Material processing operations 	Information processing operations
Chase (1978): Degree of customer contact in the service delivery process	<ul style="list-style-type: none"> ▪ Pure services ▪ Mixed services ▪ Quasi-manufacturing 	Mixed services
Lovelock (1983): Type of relationship between service organization and customers <i>versus</i> continuous delivery (CD) or discrete transactions (DT)	<ul style="list-style-type: none"> ▪ “Membership” relationship with CD ▪ No formal relationship with CD ▪ “Membership” relationship with DT ▪ No formal relationship with DT 	“Membership” relationship with continuous delivery of service
Silvestro (1992): People or equipment orientation, length of contact time, degree of customization, level of discretion, valued added FO or BO and process or product orientation <i>versus</i> number of customers processed per day	<ul style="list-style-type: none"> ▪ Professional services ▪ Service shop ▪ Mass services 	Service shop
Schmenner (1986): Degree of interaction and customization <i>versus</i> degree of labor intensity	<ul style="list-style-type: none"> ▪ Service Factory ▪ Service Shop ▪ Mass Service ▪ Professional Service 	Mass Service or Professional Service
Shostack (1987): Complexity of the service process <i>versus</i> its divergence	<ul style="list-style-type: none"> ▪ High complexity, low divergence ▪ High complexity, high divergence ▪ Low complexity, low divergence ▪ Low complexity, high divergence 	Complexity varies from low to high, divergence often low
Lovelock (1983): Single site (SS) or multiple sites (MS) <i>versus</i> nature of interaction between customer and organization	<ul style="list-style-type: none"> ▪ Customer goes to organization SS ▪ Customer goes to organization MS ▪ Organization comes to customer SS ▪ Organization comes to customer MS ▪ Transactions at arm’s length SS ▪ Transactions at arm’s length MS 	All three types of interaction, often multiple sites
Dabholkar (1994): Person-to-person or Person-to-technology <i>versus</i> Delivery at the service site or Delivery at the customer	<ul style="list-style-type: none"> ▪ Employee uses technology at the site ▪ Customer uses technology at the site ▪ Customer calls employee who uses technology ▪ Customer uses technology at home 	All types of technology-based service delivery

- A common operations-oriented research theme regarding financial services is the performance of financial service organizations. Examples of this theme can be found in, for example, the Retail Banking Futures Project (see e.g. Roth and Van der Velde, 1991; Roth and Jackson, 1995; Menor et al., 2001) and the Wharton Financial Institutions Center Retail Banking Study (Frei et al., 1999; Frei et al., 2000) and several dedicated conferences, books and special issues (see e.g. Harker and Zenios, 1999; Harker and Zenios, 2000; Melnick et al., 2000). These contributions shed light on the relations between operations capabilities, service quality and performance (Roth and Jackson, 1995), manufacturing strategy in service operations (Roth and Van der Velde, 1991), the impact of process variation on firm performance (Frei et al., 1999),

benchmarking performance through e.g. data envelopment analysis and analytic hierarchy process methods (Frei and Harker, 1999; Soteriou and Zenios, 1999; Metters et al., 1999) and the drivers of efficiency (Frei et al., 2000). Hence, the performance of financial institutions has received much attention. Yet, this does not provide insight in the issue of front office and back office activities in service delivery processes.

- Another theme in financial services research is the impact of information technology. Several studies document the changes in the financial services sector following developments in information technology. See, for example, Flier et al. (2001), Channon (1998) and Gupta et al. (2001). Notable developments are ATMs, remote banking and branchless banks. Consequently, several studies address the acceptance of technology-based service delivery by customers (Cowles and Crosby, 1990; Lockett and Littler, 1997). However, although the impact of information technology probably is one of the most-employed comments to start a paper with, this study included, and examples of information technology in financial service products and processes are countless, a systematic investigation of the opportunities offered by information technology is not available. In particular, insights in alternative design options for service delivery and the associated performance effects are desirable to be incorporated in the front office – back office theory.
- A related research theme in financial services is the appearance of new service delivery channels. Advances in information technology have enabled several new ways of delivering services, leading to a broad spectrum of distribution channels that are now available. The range includes, for example, face-to-face service delivery, delivery by phone, by mail, through on-site technology or remote self-service (e.g. using the Internet). Several authors have developed design-oriented frameworks for choosing particular service delivery channels, e.g. Chase et al. (1984), Huete and Roth (1988), Chase and Bowen (1989) and Apte and Vepsäläinen (1993). These frameworks are characterized by trade-offs between “high tech” or “high touch” channels, depending on the degree of customer contact in the service delivery channels. Although this provides some insight in the respective benefits of front office and back office activities, service delivery channels are not the same as service delivery processes. Consequently, the frameworks pay little attention to strategies for combining front office and back office activities.
- Finally, one more theme in financial services that is relevant from the perspective of this research, is the front office – back office issue itself. We already concluded that financial services are among the first references to the existence of front office and back office activities or departments in service organizations. Furthermore, financial services are a common empirical domain for studying front office – back office issues, see e.g. Metters and Vargas (2000) and Safizadeh et al. (2003). For this reason, the current literature on front office and back office activities in service delivery processes directly applies to financial services.

Having reviewed some general research themes regarding financial services, we can conclude that, although financial services are well researched, the previous conclusions regarding the front office – back office issue in service delivery processes that additional research is required to integrate existing insights into a coherent picture and to incorporate the opportunities offered by information technology, still apply.

2.7 Conclusions

In this chapter we have reviewed current literature that applies to the issue of front office and back office activities in service delivery processes. First, this has provided us with insights in the context of this research. We can conclude that services are different from goods, or at least at different ends of a continuum, in terms of their intangibility, the inseparability of production and consumption, their heterogeneity and perishability. This creates several complexities with regard to service operations management that have been dealt with by several authors. One of the issues is the distinction between front office and back office activities, as generally some parts of a service delivery process require customer contact, but others do not. In literature, this issue is often addressed as the division of a service organization in two parts: a front office and a back office. This idea probably originated from practice, particularly from financial service organizations. The concepts of front office and back office were subsequently adopted as part of the debate in which respects services are different from goods. The common reasoning was that although front office activities reflect the peculiarities of delivering service, back office activities could be organized according to well-known manufacturing principles.

Second, this review has also provided us with several insights we can use to construct our framework for the design decisions regarding front office and back office activities in service delivery processes. We can build on “front office and back office theory”, general insights regarding trade-offs, strategic service design frameworks and frameworks for choosing service delivery channels. These contributions have provided us with several insights in the design decisions regarding front office and back office activities in service delivery processes, their underlying considerations and the variables influencing the considerations. To begin with, the choice between front office and back office activities is characterized by a trade-off between the efficiency potential of back office activities and the marketing benefits and opportunities for customization and customer participation associated with front office activities. In addition, several decoupling strategies for dealing with front office and back office activities have been identified. They include decoupling back office activities from front office activities to protect the back office activities from customer-induced uncertainties as recommended by the customer contact approach or coupling front office and back office activities to facilitate high levels of flexibility and responsiveness. Yet, coupling front office and back office activities can also be employed

to reduce idle time of front office employees and so improve the efficiency of the service delivery process. Likewise, to deliver high quality service through experts or professionals, decoupling front office and back office activities can also be a viable option. Furthermore, a number of factors that influence the choice between front office and back office activities and between several decoupling strategies have been recognized. Choices should match, for example, the strategic priorities of the service organization and the service product being delivered.

The third contribution of this literature review regards the identification of which insights are still missing in order to arrive at the framework we aim to develop. In fact, despite the value of the current contributions, a number of gaps remain. First, we did not find which strategic priorities and which service characteristics are particularly relevant for the design decisions regarding front office and back office activities in service delivery processes. Second, we did not come across research that brings the current insights together. It is unclear, for example, how the impacts of service characteristics and strategic priorities should be combined when making design decisions regarding front office and back office activities. It is not unlikely these factors have conflicting requirements in terms of front office and back office design. Third, the current insights are often based on binary classifications and present rather black and white trade-offs between performance objectives. However, in today's competitive environment, financial services no exception, some traditional trade-offs are no longer acceptable, e.g. between quality and cost or between flexibility and cost. In addition, performance is often more complicated than choosing between either "low cost" or "service". Other research has shown that trade-offs can be overcome through new processing technologies, management practices and advances in information systems. Yet, it is unclear which trade-offs in the design decisions regarding front office and back office activities remain and which ones can be overcome. Fourth and finally, the opportunities offered by developments in information technology for novel front office and back office design decisions are not yet part of the current body of knowledge. Particularly in financial services, the impact of information technology can be quite large. While financial services are well researched and examples of new financial services and new ways of financial service delivery enabled by information technology are abundant, an overview of the possibilities and performance effects of employing information technology in front office – back office design is still missing.

To conclude, in order to develop a framework that provides insight in and supports design decisions regarding front office and back office activities in service delivery processes, we can, on the one hand, build on the existing insights and, on the other hand, have to create additional insights to fill the voids. Our expectations regarding the design decisions, their underlying considerations and the variables influencing the considerations are expressed more explicitly in the conceptual model we present in chapter 4. In the conceptual model the findings from this literature review are consolidated, together with the results from an exploratory case study.