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

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Chapter Ten
Multi-channeling and
Front, Mid and Back Office Architectures

Service providers are changing their distribution strategy into multi-channel strategies in which they try to reach their customers through different channels like branch offices, call centers, mobile telephony, Internet and/or intermediaries. This chapter serves as a first step on theory development on multi-channeling, a relatively new phenomenon in service distribution management, which is of large interest to practitioners in the industry. I address three related questions concerning multi-channeling. The first question is on what multi-channel distribution of services is about and what differentiates it from distribution from physical goods. The answer to this question is that multi-channel distribution is a coordination issue in which service processes are made accessible through multiple channels to different market segments. The second question is on which issues need to be coordinated. I introduce a conceptual framework for multi-channel coordination in which the content of services processes (in terms of general company communication and the product itself) needs to be made accessible to different market segments in different phases of the service delivery process through different media. The framework is a first step into theory development about multi-channeling in services and three coordination issues are discussed based on the framework: the management of customer expectations and communication on service delivery performance, the replication of service processes over different media/channels and media reach. The third question addressed in this chapter is on how multi-channel coordination is facilitated through ICT. I will discuss front, mid and back office architectures and how these support multi-channel coordination. I finish this chapter with an outlook on challenging research questions in the field of multi-channeling.

In this chapter, I limit myself to the functional issues of service distribution. Governance issues are not discussed. Functional issues revolve around the question, which functions are to be performed in distribution. The central question in the governance issue is which parties govern which part of the value chain. I focus on the non-physical aspects of distribution. The physical elements of the service provision can be distributed conform theories regarding physical distribution.

Multi-channeling in the Service Industry

Multi-channel service distribution is about making service processes accessible to customers and is about market mediation (acquiring information on customer
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behavior). Multi-channeling comprises three developments: multiple channeling, composite channeling and adaptive channeling.

The first and central issue in service distribution is making service processes accessible through the replication of these processes (Normann, 1991). The distribution of services is fundamentally different from the distribution of goods. 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, 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.

The issue of making service processes accessible through replication is in essence a coordination issue. The coproduction of customers needs to be coordinated with the production by the service company throughout the different phases of the service delivery process. To coordinate, communication with customers throughout the service delivery process is needed. In multi-channel service distribution this communication is done through different channels/media.

Traditionally, service distribution has been a question of service facility design and personnel training. Business processes were replicated across branches, penetrating the market as much as possible. Physical service facility layout, personnel training and coproduction-design were the important issues (Lovelock & Wright, 1999; Grönroos, 1990). Another important issue was the governance of the distribution channel (own branches versus franchising or independent intermediaries). Distribution could additionally take place via media like paper and telephony.

Nowadays, service distribution has become an issue of the application of ICT as well. The business logic of processes can, to a high degree, be supported and distributed with the help of ICT. This is evident in electronic channels (like Internet), but also comes into play in non-electronic channels (for example, consider the systems insurance companies and travel organizations install at their agencies and intermediaries). Table 10.1 contains a non-exhaustive treatment of distribution channels used in the service industry and a short description of less familiar channels.

Distribution, aside from making service processes accessible, has a second basic function, the market mediation function (Fisher, 1997). The objective of market mediation is to ascertain that the variety of services which reach the market conform to market demands. This therefore concerns the building up of market related knowledge and the translation of this into service delivery concepts required by the market on the short and long term. Communication with customers and registration

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of interactions and buying patterns play a primary role in building up market knowledge. ICT, like Customer Relationship Management systems, is an important tool to do so. In multi-channel service distribution, the accumulation of market information is done through different channels.


- Service providers have a need to service different market segments from different channels (multiple channeling).
- Service providers seek different channels to fulfil different distribution functions within the same market segment (composite channeling).
- Service providers require flexibility in their distribution (adaptive channeling) to enable them to respond to market dynamics. In an unstable market, one should be able to add and use channels experimentally. Then, when the market stabilizes, the most effective and efficient channels can be selected (Moriarty & Moran, 1990).

<table>
<thead>
<tr>
<th>Relatively new channels</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Multimedia call center</td>
<td>A hybrid form of telephony and internet. The call center employee and client communicate synchronically via the telephone and internet.</td>
</tr>
<tr>
<td>Internet shopping mall</td>
<td>A virtual shopping center in which the tendering of different services and goods has been brought together, perhaps thematically, via links or animation.</td>
</tr>
<tr>
<td>Extranet</td>
<td>An intranet or compilation of intranets made accessible to a limited domain of external parties. An intranet is an internet application accessible solely to the own organization. The accessibility of extranets is generally limited to the transaction and collaboration domain of the organization (Tiggelaar, 1999).</td>
</tr>
<tr>
<td>Virtual community</td>
<td>A group of people (community members) who share a common interest and communicate about it via internet. In a virtual community, interests, transactions (the exchange of funds for goods/services), ideas and relations are exchanged (Hagel &amp; Armstrong, 1997; Barnatt, 1998).</td>
</tr>
<tr>
<td>Portal</td>
<td>The internet site that generally appears first on the screen and which affords access to internet via search machines and links. The portal serves to aggregate the content of other sites and forms the access to an individualized domain. One example of such a domain could be a collection of financial services (the 'financial portal').</td>
</tr>
</tbody>
</table>

_Familiar channels:_ counter, shop-concept, telephony, internet sites, call center, forms, vending-machines, sales agents, account managers, account-teams, intermediaries, retail, interorganizational information systems (electronic order systems).

Table 10.1: Distribution channels for services
A Conceptual Framework for Multi-channel Coordination

I consider multi-channelizing to be an issue of coordination of multiple media/ channels in which the content of the service delivery process (in terms of general company communication and the product) is made accessible to different market segments (see figure 10.1). The framework is a reinterpretation of Moriarty and Moran’s (1990) hybrid marketing channel matrix and has been worked out to a three dimensional framework to enable the expression of current multi-channel issues. Moriarty and Moran (1990) only took the media and process dimension into account. They didn’t make any differentiation between market segments and they didn’t specifically focus on service distribution or on technological channels.

The central issue in service distribution is making processes accessible, which means making the different phases of the sales cycle accessible. The sales process can be divided into: gaining attention - informing - advising - transaction - fulfillment - post-sales service, as I suggested in part one of this thesis. The precise phasing differs over industries. For example, in business-to-business services, a supplier evaluation phase will have to be added and in financial services an acceptance phase is generally prior to the transaction.

![Multi-channel Framework Diagram](image)

Figure 10.1: The multi-channel framework
In multi-channeling, the different process phases are made accessible through replication over multiple media. Attention might be gained by radio, TV or direct mail. Informing could be done by brochures, internet or CD-ROM. Advice could be given by branch offices, call centers or intermediaries. Transactions might be closed over the telephone with call centers or at the branch office. Post-sales service might be carried out from a service desk or customer care center. It could occur however, that all phases of the sales process are transacted through the same medium. Multiple combinations between process phases and media are possible. Service providers might have preferences for certain media, as well as customers will have preferences and habits.

The process phases can be made accessible via multiple media to different market segments. The segmentation depth of the market hereby determines the targeted range of the medium. One can segment the market into approximate target groups, into refined segments or into market segments of one (one-to-one marketing).

The content to be distributed via media in the different process phases consists of general company communication and the product itself. Communication should be seen as general marketing communication in which customer’s attention is drawn to the service provider in general and its services in particular. Although ‘the product is missing’ (Grønroos, 1998) in services, using the term ‘product’ has become widespread in the service industry (Shaw, 1990). From a customer’s viewpoint the product of the service provider is seen as for example insurance policies, current account statements, investment statements, theatre tickets, etc. To be precise, these are not products but merely communications about services to be delivered or already delivered. Through these communications, service delivery process phases are made tangible and the service provider communicates its service performance to the customer. Thus a distinction is made between general marketing communications and service specific communications (denoted by ‘the product’). General marketing communication generally will be sent in the first phases of the sales cycle (attention – informing), service specific information (the ‘product’) will be sent throughout the advise – transaction – fulfillment and after sales service phases. Because marketing communication and the ‘product’ both are the content of communication and both coincide in a number of media (like e-commerce applications for instance), I decided to use the term ‘medium’ rather than ‘channel’ in the framework. I follow Stone and Woodcock (1995) in considering distribution channels to be communication channels. The difference between general marketing communication on the one hand and service delivery and messages about service delivery (the ‘product’) on the other hand becomes vague in many ICT media (Barnatt, 1998). On the Internet for example, a customer can navigate from marketing communication (the ‘banner’), to product related information and onwards to the order form and ultimately to digital delivery of the product with a few mouse clicks and within a matter of seconds.
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The coordination issues in multi-channeling are represented by abstract projections of dimensions in the framework (see figure 10.2). The projection of process phases upon market segments is the coordination issue of the management of customer expectations and service process performance communication. The projection of process phases upon media is the coordination issue of process replication. The projection of media upon market segments is the coordination issue of reach. In the next sections I discuss these coordination issues.

**Coordination Issue: Management of Customer Expectations and Process Performance Communication**

The projection of process phases upon market segments is the coordination issue of the management of customer expectations and service process performance communication. Throughout the process promises are made about subsequent phases and promises need to be held in subsequent phases (Grönroos, 1990). Through the making of promises customer expectations on the service are influenced (Zeithaml, Parasuraman & Berry, 1990) and through communication on performance delivered in the service delivery process, the service process is made tangible and the keeping of promises is communicated to customers (the 'product'). Thus, the initial phases offer opportunities to influence the expectation pattern of the customer. In subsequent phases, the behavior of the service provider must meet up to these expectations, ideally resulting in a satisfactory customer experience. The promises
made to customers and the delivery on these promises enables service providers to
differentiate between market segments.

The coordination issue is to make sure that throughout the different process
phases messages about promises and service performance are kept consistent from
the market segment’s viewpoint. No matter which medium is used by a certain
market segment, the messages about promises and service performance need to be
consistent. To give a simple example on service performance communication,
messages on withdrawals of your current account should be consistent, no matter
whether you access the service provider by telephone, ATM or electronic banking
application. The same accounts for general marketing information (consistency of
messages in brochures, on the Internet, etc.)

The pre-sales communication revolves mainly around branding. Strong brands
help the customer to visualize the service (Berry & Parasuraman, 1991). Branding
has the following functions (Subriana & Carvajal, 1998).

- An identification function: the brand contains important information
  regarding the characteristics of the service.

- A reference function: the brand assists the consumer in self-identification
  and the brand contributes to the structuring and organizing of the market
  supply.

- A guarantee function: the brand guarantees the quality that is expected.

- A personalization function: the selection of a certain brand offers individuals
  the possibility to emphasize their desired social status.

- A playful function: the brand corresponds to the enjoyment experienced
  when it is purchased.

- A practical function: the brand is a summary of information relating to
  previous purchase experiences.

Functions in the area of identification, reference, guarantee and personalization
can be delivered from the branding of the organization, the product or the medium.

- Corporate branding ("ABN AMRO, The bank"). Corporate branding tells us
  something about the reliability of the organization.

- Product branding ("Your own Hi"). Product branding points out the image
  and functionality of the product. In service provision, corporate branding is
  usually more important than product branding (Berry & Parasuraman,

- Dialogue branding ("Just call Apeldoorn"). This reveals something about
  the approachability of the service and the type of communication that is to
  be expected. Part of the image is adopted from the distribution channel.

Combinations might be chosen ("Just call your ABN AMRO account manager").

In the later phases of the sales process (from informing to the transaction) the
communication revolves mainly around service specification. Service specification
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. The
specification process links service marketing to service delivery. The functions and
the process of service specification have been discussed in part one of this thesis.
The interaction with the customer during service specification gives the service
provider the opportunity to accumulate information on the customer and thus on the

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market. Therefore, the specification process enables the 'market mediation' function of service distribution.

In the fulfillment phase, the nature of the service determines the kind of communication with the customer. In the case of intangible services, service delivery process performance must be made tangible for the customer with representations (like overviews of pensions or investment funds). With tangible services (like car repair or the beauty salon), service process performance is more self-evident, due to the tangible 'product', i.e. the tangible actions performed. Nevertheless, even these service providers like to tell you what they did (like in car repair).

**Coordination Issue: Replication**

The second coordination issue is the replication of service processes over multiple media. Ideally, a company would like to write one piece of software to support service delivery and to replicate that software over different media/channels. To give an example, a service configurator (to configure services from components) or a piece of software to calculate quotes, should be ideally written once and then replicated over call centers, branch offices, e-commerce applications, etc.

The coordination issue of replication is the question of determining which media are suitable for which task performance and to develop software which provides service process logic that can be used in all these media. The suitability of media for task performance is traditionally understood by the media richness theory and more recently an alternative theory has been proposed, the social information processing theory to take factors from the social environment that determine media use into account (Suh, 1999). Although there is a tradition on research on both the media richness theory and the social information processing theory (see for example Suh (1999)), I'm not aware of any research on the application of these theories on service distribution. This is not surprising, given the fact that attention for multi-channeling is quite recent. We can nevertheless draw a few parallels. In research on media richness, connections are sought between the medium and its possibilities for task performance and communication. Information-rich media lend themselves well to tasks in which people must comprehend difficult, complex subjects, or must reach a consensus of opinion regarding these. Information-poor media are suitable for communication regarding routine activities. The more characteristics inherent in a medium, such as feedback options, language diversity and a people-oriented focus, the richer the medium. I draw some parallels in table 10.2, which provides an overview of suppositions concerning media and their suitable applications.

**Coordination Issue: Reach**

In the projection of media upon market segments, the reach of the medium further determines the suitability of a medium. The coordination issue is one of matching the right medium on the right customer. This is not a simple question. Whether a medium is the right one depends on customer preferences in the first place. Customer preferences in the attention and information phase of the sales process, known as media preference, generally are well researched. But research on customer
preferences in the remaining phases of the sales cycle, generally known as channel preferences seem to be quite limited (Bellini, 2003).

When customer preferences are known, the service company has to make a trade-off between investing in all the media that are preferred by the different market segments (the ‘open-up all windows’ strategy) or limiting channel configurations. Limiting the channel configuration might result in losing market segments (because these get out of reach), might result in enlarging the segmentation depth of the market to such a level that not all people in the segment get their preferred channels but at least get a medium which is acceptable to them. Furthermore, limiting channel configuration might result in investing in channel migration of certain market segments.

Channel preference and channel migration are hot topics in the service industry for two reasons. At first the ‘open-up all windows’ strategy shows to be quite expensive, so management wants to know which windows could be opened best. Second, with several new and relatively cheap and coproduction-intensive channels available (like e-commerce applications), migration to these channels of certain market segments could be very profitable. It is obvious that knowledge on channel migration depends on research on channel preference, i.e. factors that influence channel preference, which seems to be quite rare (Bellini, 2003).

<table>
<thead>
<tr>
<th>Type of medium</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘Face-to-face’</td>
<td>Highest richness. Synchronicity in time and place. The processing and containment are limited by the capacity of human memory. The effects of status and hierarchy are the highest, which could inhibit communication (Van Dijk, 1994; Wigand, 1997). Suitable for negotiation (Suh, 1999).</td>
</tr>
<tr>
<td>‘Ear-to-ear’</td>
<td>Telephony is not as rich as face-to-face. Since visual stimuli do not play a role, the emphasis is on the ‘pure content’ (Suh, 1999). Telephony is of immeasurable worth for organizations (Broek, 1998): high response ratios, immediate feedback, flexibility, combinatory with other media, buildup and maintenance of customer relations and low costs per contact.</td>
</tr>
<tr>
<td>‘Sound and vision’</td>
<td>Video is richer than audio and video conferencing can be a good substitute for face-to-face communication (Suh, 1999). There seems to be a future in store for videoconferencing, multimedia call centers and visual telephony.</td>
</tr>
<tr>
<td>‘Face to interface’</td>
<td>According to Rice (1992), computer mediated communication like email is not suitable for, amongst others, decision making, negotiating/closing deals, conflict solving and the exchange of confidential information. Suh (1999) however, postulates that the medium is rich enough for negotiation.</td>
</tr>
<tr>
<td>‘Print’</td>
<td>One-way channel. Comprehensibility and reliability score low. The reach is large. The costs per contact are low.</td>
</tr>
<tr>
<td>‘RTV’</td>
<td>One-way channel. Comprehensibility also scores low in the case of television. The tangibility scores high.</td>
</tr>
</tbody>
</table>

Table 10.2: Characteristics and richness of media
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The framework gives direction to research on media/channel preferences of customers by paying attention to the fact that media/channel preferences should be investigated for different process phases. This insight from the multi-channel framework is quite new in the limited research on channel preferences (Bellini, 2003). The framework gives direction to research on the more dynamical issue of channel migration as well. The framework can be used to give an overview of what the organization would prefer its customer's preferences to be (i.e. the company's preferred channel configuration). Based on discrepancies with actual preferences, a migration strategy can be designed and its effects could be measured. Database marketing could be of some help by systematically recording and analyzing the communication patterns with customers in different phases of the process and matching this data with data from market research on what (potential) customers claim to prefer (van Ees, 1999).

Another important coordination topic, which has to do with channel reach, is the topic of channel conflict (for an example see framework 10.1). With the framework one can bring channel conflict into view. Channel conflicts arise when multiple channels governed by different organizations are focused on the same segment (Bucklin, Thomas-Graham & Webster, 1997). It could for instance, become visible that the information, advice and transaction phase for segment A is being performed by an independent intermediary as well as by the company's own call center. Possible solutions for channel conflict could be understood through the multi-channel coordination framework. Bucklin, Thomas-Graham and Webster (1997) mention the following solutions.

- Focusing channels anew on non-conflicting market segments (changes in the medium-market projection).
- Placing the same service provision under different brands in conflicting channels (in terms of the framework: changing the process-market projection through changes in communication in the pre-sales phase).
- The introduction of (minor) changes to the product (change of the process-market projection through changes in the product or process performance) so that different channels perform differently.
- The division of specific phases of the sales process across different channels (composite channeling through changes in the process-medium projection), so that conflicts are circumvented. A well known example are insurance companies who attract and inform their customers by Internet but leave the advice and transaction phase to the independent intermediary.

**Channel conflict (news release, Aug./Sept. 1999)**

The NbvA gave Delta Lloyd warning of an imminent reaction by the intermediary in response to collaboration between the insurance company and (one example) Albert Heijn (AH, Dutch grocery chain). Principal Secretary Boudewijn van Uden states "We have nothing against multi-channeling, as long as dual conditioning is not a factor. The intermediary channel could well pay the price for growth via AH. Delta Lloyd must be careful not to put the cart before the horse".

Framework 10.1: An example of channel conflict

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The framework also facilitates design and control of channel configurations in which the same target group is reached in different process phases by different channels (composite channeling). In this case different channels map on different process phases, which border on one another. These borders indicate the need to actively cross-reference from one channel to the other to reduce the risk of customers leaving the sales cycle and to transfer information on previous contacts.

Multi-channel architectures: front, mid and back office

During the period of study of this thesis, interesting developments occurred in the area of information architectures for multi-channel coordination, which I studied indirectly. Several service providers developed front, mid and back office architectures (Berg et al. 1997; De Vries, 1997) or sometimes called Customer Relationship Management-infrastructures (Galbraith & Rogers, 1999; Van Ees, 1999) or multi-channel architectures. At first I describe the idea behind these architectures. Then I will derive the general functionalities of the mid office from architecture reports. I relate these functionalities to the coordination issues in multi-channeling. I finish this section with positionining the mid office in the network ecosystem and an exploration of idea’s on network positioning strategies based on insights from part one of this thesis.

In front, mid and back office architectures, front offices are supposed to perform customer processing (relational contacts throughout the sales cycle), back offices are supposed to perform depersonalized mass processing and contract administration and mid offices are the facilitating and coordinating link between front and back offices (Berg et al., 1997). The concepts front, mid and back office in ICT architectures refers to a conceptual arrangement of information systems functionality that support operations (Berg et al., 1997). It doesn’t refer to actual organizational arrangements in specific organizations nor on technical implementations of ICT. The technical implementation of mid offices is left beyond the scope of this research. It generally is based on middleware, N-tier architectures, object oriented software design, application programmable interfaces and wrapping of (back office) systems. The concept of mid offices is very much based on the idea of information systems components providing services to each other. Front, mid and back office architectures should be seen as clusters of business logic providing information services to each other.

Front and back office systems are supposed to support front and back office operations and the above mentioned description matches with the general ideas on front and back office presented in chapter three. Front offices are designed with the prime objective to serve customers and 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 e-commerce) (Chase & Tansik, 1983). Tasks are done in the back office because of scale economies and interaction is two-way between employees and technology (Chase & Tansik, 1983). In the back office employees deal with customer surrogates embodied in information technology and extracted from customers in the front office.
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Over the last decades information systems developed and grew within organizational boundaries and product lines (Berg et al., 1997; van Ees, 1999). In many cases back office departments were product oriented. Therefore many service providers nowadays have product oriented systems in their back office administrating one product or sometimes a product family (a core product with several adjustments). Combined with multi-channel distribution and thus many front offices this leads to a proliferation of front office applications and links between front and back office systems (Berg et al., 1997). In fact, every front office system that needs data about products needs a link with all back office systems registering these products (see figure 10.3).

The mid office is a new phenomenon, which facilitates and coordinates between front offices and which links front and back office systems and thereby front and back office operations. The idea of mid office matches with the ideas presented in chapter three that buffers between front and back offices are needed that consist of queuing cases for processing, escalation procedures and information systems to ensure rapid availability of data (Stone & Woodcock, 1995) and the idea that ICT is the glue that holds together the front and back office (Li, 1997). Both front office systems as back office systems will have just one link with the mid offices, which solves the problem of proliferation of linkages.

The concept of mid office is based on the principle of decoupling (Berg et al., 1997). The idea of mid office started from the idea to combine or package products and to leave room for mass customization in the front office without having to alter back office registration systems. Product combinations or packages offered in the front office are translated by the mid office into back office registration tasks (Berg et al., 1997).

Figure 10.3: Proliferation of linkages between front and back office systems
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The basic principle is to decouple channel independent and product independent functionality (mid office) from channel dependent (front office) and product dependent (back office) functionality. Front offices, be it a call center, an internet site or an intermediary, will have the mid office as the one and only point of contact. The mid office provides the front office with product specifications, process specification, advise and sales applications and a customer view. The mid office manages knowledge on products, the market, customers and distribution channels. The time-to-market of new products and the time-to-implement of new distribution channels is supposed to increase due to the decoupling phenomenon of the mid office (Berg et al., 1997). Because of adaptive channeling, the introduction and disappearance of distribution channels has its own dynamics, therefore distribution channels/front offices are decoupled from underlying channel generic relationship, market, product and channel functionalities.

In the late nineties Customer Relationship Management (CRM) tools entered the market (see appendix A for an overview of functionalities) and CRM functionalities were positioned into the front, mid and back office arrangement. Van Ees (1999) describes the CRM infrastructure of a financial service company in the Netherlands (FBTO) and positions administration functions in the back office (the product administration systems) and communication with customers in the front office (through channel systems like call center applications, internet applications, etc.). This front office is supported by a relationship management system, marketing database, marketing analysis tools, campaign management and contact management. With the analysis tools customer profiles, sales scores, channel preference models and selection criteria for campaigns are build to facilitate customer targeting. Wielink and Kreuse (1999) address the following functionalities to the mid office: distribution and synchronization of data, translation of services to back office registration tasks, integrated customer view, customer contact data, content management (registration of representations of services), process/supply chain definition and control and service level agreement management.

Mid Office Functionalities

Table 10.3 at the end of this chapter provides a scheme in which general mid office functionalities are derived from secondary research material, i.e. architecture reports of six different companies in the Netherlands. Most mid offices provide the following functionalities.

- Single integral customer view *).
- Product structure definition *).
- Workflow management.
- Contact management *).
- Campaign management *).
- Content management *).
- Contract management *).
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- Channel management *)
- Marketing analysis and scoring *).
- Sales support *).
- Management information.
- Back office integration and synchronization *).
- External sourcing *).
- Channel generic, business specific functionality.

*) These functionalities are typical Customer Relationship Management (CRM) functionalities and resemble the CRM functionalities mentioned in appendix A (back office integration and synchronization and external sourcing resemble process integration in appendix A).

All mid offices provide information services to front office systems which support the commercial phases of the sales cycle. Figure 10.4 shows the resulting front, mid and back office architecture picture.

Mid office functionalities are channel generic in the sense that these functionalities are used throughout the sales cycle irrespective of the channel used. Channel specific functionalities are grouped in the front office layer of the architecture. These are functionalities like call center scripts, voice response menus or SMS-technology.

Figure 10.4: The front, mid and back office architecture
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The mid office serves as a single point of definition. The structure of, for instance, the customer view, products, content, or contracts is defined in the mid office. Data out of which products or a customer view is built could be physically located outside the mid office (in, for instance, several back office systems or databases), but the mid office knows where to find this data. The product definition, for instance, might define products on components, assembling and label level. Contract management relates a certain product (based on a certain product definition) to a customer. This means that that product definitions within contracts differ over customers and that product definitions might expand over time (with new components) without affecting running contracts. Changes in contracts and events based on contracts (like for instance premium collection or insurance prolongation) lead to triggers to back office administration systems to provide the required service (like a premium collection for instance). Events on contracts in which different products or product components are combined might lead to different triggers to different back office systems to perform required services. This way basic concepts of mass customization are supported.

General reasons for developing multi-channel architectures are the need for multi-channel coordination, mass customization, shorter product life cycles, 7*24*365 servicing, customer differentiation, marketing analysis and cross selling.

Front, mid and back office architectures are developed to explicitly:

- Re-use channel generic functionalities (once only definition and development of functionality that can be reused in several channels).
- Have a single customer view.
- To enable integral client reporting (reporting on different products).
- To coordinate commercial processes over channels (by commercial workflow management).
- To increase time to market of new services by flexible product configuration (out of existing and new components).
- To increasing time-to-implement of new channels.
- To differentiate between distribution and production (by decoupling front and back office through the mid office).
- To enable external sourcing of services and to relabel these.

Mid Office and Multi-channel Coordination

Front, mid and back office architectures support the four basic multi-channel coordination issues.

Throughout the complete sales process customer expectations and process performance communication can be managed by keeping general company communication and product communication (the content) consistent through combining functionalities like campaign management, content management, product structure definition, contract management, contact management, customer view and workflow management. From the single customer view the market segment to signal to (eventually through a campaign) is known and signals could be kept consistent by using the same content, contracts and product definitions from the mid office.
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Workflow management and contact management assist in managing the workflow throughout the complete sales process to make sure that service promises are kept. In several cases content management by the mid office explicitly was meant to provide for integral multi-product (package) customer reporting, which is in essence communication about the performance of multiple service processes.

Through the mid office, channel generic functionalities of the sales process are replicated over different media/channels.

The mid office supports the reach coordination issue as well. Channel behavior is measurable in the mid office through analysis of contact data and can be matched with data on channel preferences from marketing research. Channel management further supports analysis of channel performance and costs. Channel conflict cannot be detected by the mid office because externally governed channels fall outside the scope of the mid office. Coordination requirements due to composite channeling is completely supported by the mid office concept. The mid office is explicitly designed to coordinate commercial processes over channels by commercial workflow management and contact management. Every contact in every channel is registered (including content and appointments). Through workflow management the next steps in the process are planned, expert employees are scheduled and channels are chosen based on customer and company media preferences.

The second function of service distribution, the market mediation function, is supported by the mid office as well. It is obvious that through market analysis based on data from the customer view and contact management, information on the market can be build to support marketing decision making.

The Mid Office and the Network Ecosystem

Two explicit reasons for developing front, mid and back office architectures are of special interest in relation to the network ecosystem of Klüber et al. (1999), presented in chapter two. Front, mid and back office architectures are explicitly developed to differentiate between service distribution and production and to enable external sourcing (and relabeling) of services. In 1997, Berg et al. (Berg et al., 1997) mentioned: “probably back offices will offer services to mid offices of associated companies in the near future”. Two years later Wielink and Kreuse (1999) suggested a front, mid and back office architecture to integrate chains and networks of providers of governmental services, like municipalities or ministries. It becomes clear that the mid office is a decoupling and coupling mechanism between service distribution and service production, regardless of whether distribution or production is done by the organization governing the mid office or other organizations like shared service centers (Schmidt, 1997). Manuel (2001) describes for instance shared service centers for multi-label back office mortgage administrations, back office indemnity insurance administrations and back office universal life insurance administrations. Both back office processes as well as front office processes (like in the case of facility call centers or intermediaries) might be done by external parties and might be coupled by mid offices. This is expressed in figure 10.5.

Given the channel generic and non-product specific functionalities of the mid office and its potential for market mediation, the coordination provider in the network ecosystem might use the mid office mechanism to coordinate front and
Chapter Ten: Multi-channelling and Front, Mid and Back Office

back office processes provided by its own organization or external organizations. By doing so, it will perform the coordination broker, coordination knowledge provider and coordination standard setter role as well. As coordination broker it will provide information about providers in the network, standards, contracts and relationships (this information already is build in the mid office). As mid office coordination provider it has knowledge on setting up and maintaining coordination services in a business network (the knowledge provider role). To be able to couple partners to the mid office the coordination provider has to set standards. The mid office enables business network metamanagement, the management that is responsible for analyzing requests for services, identifying services, switching and tracking of service providers, maintaining the procedure for allocating services to requests and adjusting the criteria for satisfying allocation.

Business network metamanagement by setting standards, coordination provision, coordination brokerage and coordination knowledge provision enabled by the mid office mechanism might be the sweet spot to strive for in future networks. The coordination of distribution channels, market mediation opportunities, standard setting and production partner brokerage provide abilities to lock-in customers and suppliers because service customization, augmentation and versioning is enabled and specific investments in the network have to be made (Shapiro and Varian, 1999). Positive feedback due to network externalities might raise because many customers might get to a full range of (mass customized) services through a complete network of channels, making it attractive for new customers to join the network (Shapiro and Varian, 1999). As Shapiro and Varian (1999) stated: “the great fortunes of the information age lie in the hands of companies that have successfully established proprietary architectures that are used by a large installed base of locked-in customers”...and suppliers, I like to add.

Figure 10.5: Front, mid and back office architectures and shared service centers (SSC)
Conclusions and further research

In this chapter I introduced multi-channeling as a coordination problem in which the different service delivery process phases (and its content in terms of general company communication and the product) need to be made accessible to different market segments through different media/channels. I distinguished three coordination issues: the management of customer expectations and service process performance communication, replication and reach. Through a tentative analysis of reports on six mid offices, I derived general mid office functionalities which are channel generic and non product specific and I showed that the four coordination issues are supported by the mid office functionalities. Furthermore I argued that the mid office mechanism might help to organize for network metamanagement, the sweet spot in future service networks.

Based on these insights several question for further research rise. In the description of the multi-channel framework several research questions already have been raised.

- Part of the coordination issue of replication is the question of the suitability of channels/media for service distribution tasks, which might be studied with the help of the media richness theory or social information processing theory.
- Part of the coordination issue of reach are questions on customer channel preference and channel migration. To study channel migration strategies, we have to study channel preference at first. Bellini (2003) took some first steps by analyzing the literature and came to the conclusion that research on this topic is rare.

Another question addresses the complexity of multi-channel coordination. This complexity will increase with:

- an increase of distinguishable phases in the service delivery process (an increase in the service range or customization options);
- an increase of the segmentation depth of the market (towards segments of one);
- an increase of channels;
- an increase in personalization of communication content.

The question raises: at what point of customizing commercial offerings becomes multi-channel coordination complexity too hard to manage? With customizing commercial offerings I mean delivering customized services through customized service delivery processes with personalized communication throughout the complete process, against a differentiated price, made accessible over customer preferred media to segments of one or even smaller that one (meaning that the same customer might behave differently during working hours and leisure time or as a commuter, for instance). This question could be rephrased into the question: when becomes the marketing hype of one-to-one marketing a hard to crack NP-complete
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problem? Matching millions of market segments, many process phases and hundreds of communication content options to twenty or thirty different media appears to me as a NP-complete pigeon hole problem.

Related to this question are questions on complexity and flexibility related to the mid office concept. Does the mid office concept improve the management of multi-channel coordination complexity and does it improve the flexibility of organizations or networks of organizations? De Goeij (2002) started research on these issues.

The last question for further research raises from the idea that business network metamanagement enabled by the mid office mechanism might be the sweet spot to strive for in future networks. This question is strategic of nature. The question is whether a network positioning strategy in which the coordination of distribution channels, market mediation, standard setting and production partner brokerage are critical resources, increases abilities to lock-in customers and suppliers and to leverage positive feedback due to network externalities. This question goes beyond the classical research theme in the information systems field on quasi-integration due to proprietary systems.

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<table>
<thead>
<tr>
<th>Functionality</th>
<th>Investment company</th>
<th>Bank</th>
<th>Insurance company *)</th>
<th>Pension insurance company</th>
<th>Bank</th>
<th>Media company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single customer view</td>
<td>X</td>
<td>X,</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td>including channel preference</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product structure definition</td>
<td>X, mass customized (component-assembling-label level)</td>
<td>Assortment and events database</td>
<td>Product definition at 3 levels: basic product, combination product, commercial appearance</td>
<td>Product administration based on product units (components)</td>
<td>Product development and definition of market/product/channel-combination. Three levels: half product, basic product, commercial appearance</td>
<td>X</td>
</tr>
<tr>
<td>Contact management</td>
<td>€ customer view</td>
<td>€ customer view</td>
<td>X</td>
<td>X (channel, appointments, content)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Campaign management</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Content management</td>
<td>Multi product customer report (performance reporting)</td>
<td>Proposition definition by combining customer data with assortment database</td>
<td>Collection and combination of output of several systems to one message</td>
<td>Multi product customer report (performance reporting); explicitly expressed as reporting service: propositions, letters and offers</td>
<td>X (articles, advertisement, external content)</td>
<td>X</td>
</tr>
</tbody>
</table>

Table 10.3: Mid office functionalities
<table>
<thead>
<tr>
<th>Functionality</th>
<th><strong>Investment company</strong></th>
<th>Bank</th>
<th>*<em>Insurance company <em>)</em></em></th>
<th><strong>Pension insurance company</strong></th>
<th>Bank</th>
<th>Media company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contract management</td>
<td>e customer view</td>
<td>e customer view</td>
<td>Contains all data on contracts or data on back office systems registrating these contracts and distributes front office requests to these back office systems</td>
<td>Coupling of product definition to customer data and contract components in back office systems</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Sales support</td>
<td>Integral support of offering process; sales and advise models</td>
<td>sales and advise models</td>
<td>Integral support of offering process; sales and advise models</td>
<td>X (advise and offering)</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Channel management</td>
<td>Element of management information: product/channel combinations, channel performance, channel use per customer</td>
<td></td>
<td>Relation management system contains information about intermediaries: commercial data, management information on production and commissions</td>
<td>Element of management information</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Marketing analysis and scoring</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Table 10.3: Continued
<table>
<thead>
<tr>
<th>Functionality</th>
<th>Investment company</th>
<th>Bank</th>
<th>Insurance company *)</th>
<th>Pension insurance company</th>
<th>Bank</th>
<th>Media company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workflow management</td>
<td>Commercial workflow, including expert scheduling</td>
<td>Commercial workflow, process definitions, expert profiles, expert scheduling</td>
<td>Commercial workflow</td>
<td>Commercial workflow, including expert scheduling</td>
<td>Commercial workflow, process definitions, scheduling, routing to back office</td>
<td></td>
</tr>
<tr>
<td>Management information</td>
<td>Primary process performance and aggregated marketing information</td>
<td>Primary process performance</td>
<td>Primary process performance</td>
<td>Financial, resource, operational and commercial control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Back office process integration and synchronisation</td>
<td>X</td>
<td>Routing to back office and back office consultation</td>
<td>Routing to back office and back office consultation; blocking of contracts during front office processing</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>External sourcing</td>
<td>Insourcing of products and administration from suppliers</td>
<td></td>
<td>Insourcing of products and administration from suppliers</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 10.3: Continued
| Channel-generic, business specific functionality | BKR-checking ** | Authentication and authorization | Authorization, (procuration and credit assessment), validation (identification) and security (authentication) | Editing and personalization (personalized presentation and offer) |

Table 10.3: Continued

*) This insurance company only worked with intermediaries and was not in a multi-channel situation in the sense that channels of different types were used

**) BKR-checking: checking of creditworthiness at the Bureau Krediet Registratie (bureau credit registration)