Matching service strategies, business models and modular business processes

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Abstract

Purpose – In recent decades, supply chains have diverged and new types of services and operators have emerged in the logistics sector. The purpose of this paper is to focus on analyzing service strategies and service-related business models, as well as their modular business processes in logistic services. The aims are to describe these three levels and to match strategic service positioning with business models and modular business processes. Different types of services are analyzed and the analyses are conducted on both the industry and corporate levels.

Design/methodology/approach – The theoretical focus of the paper illustrates frameworks for service strategy, service positioning, business models, and business processes. The corporate level approach aims to describe the efficiency and quality of services and their processes, while the industry level approach focuses on service strategies in an industry and on the organization of business, i.e. business models. A case study is used to illustrate the strategic level divergence in logistic services and to match this with the business model framework and the business process approach.

Findings – The findings show that a match exists between service strategy, business models, and operational level business processes. Standardization, service productization and modularization of services, and also service production structures are useful tools for efficient service production and output.

Originality/value – Companies are currently examining new roles in supply chains and the logistics market. For management, the frameworks presented facilitate analysis of the different options available for the firm in terms of strategic positioning, structural business model portfolio, and modular business processes. Based on the theoretical frameworks, it is possible to evaluate past developments and also predict the future of services.

Keywords Corporate strategy, Supply chain management, Process management, Service levels

Paper type Research paper

1. Introduction

The business model approach has become popular in recent years (Osterwalder et al., 2005; Pateli and Giaglis, 2003), partly because continuously changing business processes, practices, and operations have to meet the needs of the marketplace. However, business models are relatively poorly understood in research (Linder and Cantrell, 2000; Osterwalder et al., 2005). Organizations can compete in the global environment by utilizing world-class electronic communication systems and by operating common simplified and standardized processes (Hamel and Prahalad, 1989). According to Barratt (2004), separate supply chains can be designed to meet the specific needs of the various customer segments if customers can be segmented
according to their buying behavior and service needs. It will be of considerable interest to look at the supply chain relationships, development of service processes, differentiation of services, and the channel interfaces from the perspective of supply chain management (SCM).

The types of value chains or business models are strongly dependent on the basic strategic choices made by companies – for example, cost leadership, differentiation, and focus strategy (Porter, 1980). The drivers behind business model changes have been listed often, and the most important factors include globalization, open markets, introduction of new technology, the internet and information and communication technology in general (Amit and Zott, 2001; Delfmann et al., 2002; Chesbrough, 2007). It seems to be difficult to prioritize these drivers or to place them in any specific order. The internet not only provides companies with a new channel in which to meet their customers, but also platforms for cooperation between companies and customers in developing and testing new services, technologies, and products. In addition to conventional channels, companies are able to choose among several digital channels, facilitating different strategic positions for services. This multi-channel environment poses new challenges, but also offers new opportunities.

On numerous occasions, researchers have brought up the differences and interconnections between strategy and business models on the one hand and business models and business process models on the other (Osterwalder et al., 2005; Stähler, 2002; Seddon et al., 2004). However, there is an increasing importance to increase research regarding interconnections of all these three levels: strategic level, business models, and business processes. Osterwalder (2004) states that strategy, business models, and process models address similar problems in different business levels. Strategy focuses on the corporate/group and planning level, business models on the business unit and architectural level, and business processes on the functional and implementation level.

This paper is organized as follows. We start by identifying the objectives and methodology of the study. Next, we present service process analysis (SPA), a strategic normative model for analyzing efficient service positioning. Then, we present a short review of business model literature and models developed in that field. After that, we briefly discuss business process analysis and modular business processes. To increase understanding of how these frameworks can be used in analyses of services, we use examples of selected logistics services and present a company case study. In the analysis, we connect SPA with Osterwalder’s (2004) definitions and categorizations of business models and with the business process approach.

2. Objectives and methodology of the study
The objective of this paper is to increase understanding of the relationship between three modules: strategic level service positioning, service-related business models, and modular business processes. Our aims are to describe these three different level modules and to match the modules of strategic service positioning models with the frameworks of business models and modular business processes. In this paper, we inspect the strategic level from the perspective of strategic service repositioning. Several authors have analyzed the efficiency of services and service delivery, and many of them are based on the ideas presented originally by Hayes and Wheelwright (1979). We present a strategic normative model for analyzing efficient service
positioning called SPA and originally developed by Apte and Vepsäläinen (1993) and Tinnilä and Vepsäläinen (1995). In SPA, efficient matching between services and channels is determined on the basis of the trade-off between the production costs and transaction costs involved. The aim of SPA is to synthesize different aspects of service processes in order to explain and predict the impacts of organizational and technological development on individual services and service firms, as well as on industrial organization and network infrastructures. The SPA model offers a tool for graphical representation of service positioning and also for appraisal of different repositioning strategies, much in the same way as manufacturing facilities can be compared in the product-process matrix devised by Hayes and Wheelwright (1984). The SPA model describes efficient ways to connect the delivery channel of the service (type of channel) with the type of service. To summarize, SPA describes the strategic positioning of the service.

With the business model framework, services can be described in a concrete way. Business model tools illustrate and collect the diversified components needed for business architecture planning. For business model analysis, we use Osterwalder’s (2004) business model building blocks framework. Osterwalder’s model offers a useful framework for analysis of the different elements of the business model, as it contains many of the elements essential at the architectural level of business. However, it does not provide a tool for analyzing efficient service delivery or service processes. That is why we analyze the efficiency of the service delivery with SPA and business processes. The SPA model helps to bridge this gap and connects the business model framework with the mix of efficient service outputs by facilitating the analysis of efficient delivery channels.

The relation and interfaces between the three modules – SPA, the business model, and business process frameworks – can be described as follows: while SPA describes the value proposition on a general level by defining the type of service and the distribution channel, other more concrete elements also have to be defined by building a description of the business model and modular business processes (Figure 1).

To illustrate how to bridge the gap between the strategic view of the SPA model and business model-level analysis, the building blocks proposed by Osterwalder are used. We use SPA, Osterwalder’s business model analysis framework and the concept of modular business processes to search for interconnections between frameworks for the strategic positioning of services, business model analysis, and business process analysis. Our aim is to promote the understanding of synergy and interfaces between these three approaches and also to connect them to the modular approach. As SPA concentrates on the corporate and planning level and business models on the architectural and business unit level, the business process approach adds one more and the most concrete level, an implementation and functional level.

**Methodology**

We use a qualitative research strategy for illustrating the three levels of the framework in a real-life case environment. There has been growing interest in a research strategy that allows qualitative analysis and use of the case study method in business research (Yin, 1981, 1994; McCutcheon and Meredith, 1993; Ellram, 1996; Hudson et al., 2004). According to Voss et al. (2002), case research has been one of the most powerful research methods in operations management. Qualitative methods are preferred if the
goal is to explain or to understand a phenomenon, i.e. the aim is to develop our understanding of real-world events (McCutcheon and Meredith, 1993; Sachan and Datta, 2005). Case studies may also be used to support, expand, test and generate theory or raise doubts about existing theories (Eisenhardt, 1989; McCutcheon and Meredith, 1993). Qualitative methods provide a depth and richness that allows the researcher to probe the how and why questions (Ellram, 1996). In addition, the case study method is useful in the early phases of research (description, concept development) where there may be no prior hypotheses or previous work that could be used for research (Sachan and Datta, 2005). Case studies typically combine data collection methods from primary and secondary sources such as archives, interviews, questionnaires, and observations (Eisenhardt, 1989; McCutcheon and Meredith, 1993). Case studies can provide description and prediction on a smaller scale and single or multiple case studies can be used to describe a phenomenon (Ellram, 1996; Yin, 2003). In this study, we use a single case study for describing, analyzing and illustrating the three levels of the framework. As our aim is to develop our understanding of the topic, we will first test whether the framework is useful in real-case environments for analyzing strategic service positioning, business models, and business processes and their connections. We have collected information through open sources (e.g. internet) and from company interviews and internal material.

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**Figure 1.**
A framework illustrating interfaces and combining three modules: strategic service positioning, business models, and modular business processes.

![Diagram of the framework](image-url)
3. Strategic service repositioning analysis

As service industries have begun to play an increasingly important role in the economy, there has been a call for more profound strategic thinking with regard to services (Kellogg and Nie, 1995). Several authors have analyzed the efficiency of services and service delivery, and much of their work is based on the ideas presented originally by Hayes and Wheelwright (1979). The matrix presentation and analysis tool has been adopted by Apte and Vepsäläinen (1993), Kellogg and Nie (1995), Tinnilä and Vepsäläinen (1995), Collier and Meyer (1998), Schmenner (1986, 1990, 2004), Silvestro et al. (1992), Buzacott (2000), Heim and Sinha (2001), Metters and Vargas (2000) as well as Johansson and Olhager (2006). Most of the frameworks presented have proposed a matrix for analyzing the position of services and the effect of changing the position, i.e. strategic repositioning. For this study, we chose to use the SPA framework developed by Apte and Vepsäläinen (1993), Tinnilä and Vepsäläinen (1995) and Kallio et al. (2001) as it offers a normative framework for analysis for different types of services. Next, we describe the strategic repositioning framework (SPA) in more detail and then illustrate it in the logistics service context, as the focus of this paper is on the analysis of logistics services at industry and company levels.

3.1 Strategic service repositioning framework

SPA is a framework for analyzing relationships and services at a strategic level (Apte and Vepsäläinen, 1993; Tinnilä and Vepsäläinen, 1995; Kallio et al., 2001). In the SPA model, efficient service processes are seen as combinations of service characteristics and service delivery channels. Service types range from mass transactions and customized services to contingent relationships, while service delivery channels range from internal hierarchies to open networks such as the internet. The service outputs that are located on the diagonal of the matrix represent efficient combinations of services and their service delivery channels (Figure 2).

A pitfall commonly related to service processes is universal service, which refers to a variety of services offered to all customers using the same service channel, e.g. field personnel in branch offices. As a result of universal service, relationships with end-users are undeveloped. One type of inefficient service is to offer simple service with a close relationship because this leads to combination of high “production” costs and low levels of value adding activities. Another inefficient way is to offer complex services with a loose relationship leading to high-transaction costs and quality problems.

The SPA matrix can be used for positioning services at both industry and corporate levels. In terms of modularity, it divides different types of services and their efficient delivery structures in this module. At industry level strategic service repositioning constitutes a portfolio of modular service offerings. Moreover, at corporate level, the service portfolio is a mix of the company’s modular service offerings. In this paper, we aim to describe the logistics service portfolio at both industry and corporate levels. Next, we focus on industry level strategic service repositioning of logistics services.

3.2 Strategic service repositioning in a logistics service context

As logistics is receiving increasing recognition as a competitive parameter, the focus is shifting to more strategic considerations of service response and flexibility instead of simple make-or-buy decisions (Skjøtt-Larsen, 2000). There are many good reasons to
focus on research regarding logistics services. First, the outsourcing of logistics services is expected to increase (Ohmae, 1989; Coyle et al., 1992; Peters et al., 1998; van Laarhoven et al., 2000; Persson and Virum, 2001). Second, the logistics service industry is a young and emerging industry (Sink et al., 1996; Sink and Langley, 1997; Kuglin, 1998) which promises a positive future and new roles in supply chains and value networks for the logistics industry. This is supported, e.g. by Ojala et al. (2006); value added logistics services seem to be the fastest growing part of the transport industry. Moreover, e-commerce has created major changes in the structures and processes of distribution (Skjoett-Larsen et al., 2007). To summarize, in the future, logistics service providers are likely to continue to strengthen their value creation in supply chain networks both at global and local levels.

Meanwhile, we have seen that logistics and transportation services have been changing and diverging into several service segments. The multiple services provided earlier by transport and trucking companies have been broken down into several specialized services to attain lower costs (cut-rate trucking) or to offer value-added services (warehousing, packaging, price ticketing, final assembly, etc.) through third party and fourth party arrangements and alliances. Information technology has enabled new channels such as online services and real-time tracking of cargoes enabling customers to monitor their deliveries using data networks. At the other end of the spectrum, the management of customer relationships is the driving force of development. Contract logistics services with third and fourth parties, shared facilities, outsourcing and alliances provide a wide service mix from JIT-deliveries.

Figure 2.
The SPA matrix: divergence of services

Sources: Apte and Vepsäläinen (1993); Tinnilä and Vepäsäläinen (1995); Kallio et al. (2001)
and distribution to full-scale services and supply chain solutions replacing the company-run order processing and warehousing functions. The continuing consolidation and deregulation within the logistics service industry has also resulted in the emergence of large companies that have the capabilities to offer sophisticated logistics solutions on a continental or even global scale. Recently, these logistics service providers strive to achieve a strategic role within the supply chain of clients, expanding their scale and scope of operations (Selviaridis and Spring, 2007). Consequently, it can be expected that these services provide a good setting for the analysis of service repositioning and new business models. One example of the divergence of logistic services and their repositioning in the strategic level SPA model at industry level is shown in Figure 3. This industry level analysis illustrates a portfolio of efficient service offerings.

At the industry and supply chain level, the SPA framework offers a useful starting point for designing efficient service and channel mix within and between organizations. The framework shows the development path, especially the divergence tendency. The tendency obviously adds to the challenges of SCM implementation and increases the need for separating, classifying, and prioritizing processes that have the greatest impact on supply chain performance. Pagh and Cooper (1998) call for effective management of a supply chain including creative thinking about how to integrate and perform logistics and manufacturing activities. For the best support of different

![Figure 3. A Portfolio of efficient service offerings in the logistics service industry—an industry level analysis](image-url)
business models this calls for a clear “packaging” of different types of logistics services, i.e. a clear segmentation of services. Later, we will analyze strategic service positioning at corporate level using the SPA model in the case of Itella Group and its logistics services. This is called corporate level analysis. Before taking up this kind of analysis, we will focus in the next section on the second module of the business model concept, as the aim of the paper is to match the strategic service positioning approach with the business model approach.

4. Business models
One of the great drivers changing the business environment has been the large-scale adoption and use of global digital networks. Global digital networks have led to reduced communication costs, new networks, joint value propositions, new distribution channel combinations and diversified and shared revenues – in other words, to an increasing number of possible business configurations, i.e. business models that a company can adopt. On the other hand, this has increased complexity and uncertainty in business networks, the need for management concepts and tools, and the involvement of modularity aspects for managing these complex systems. Business has more stakeholders, becomes more complex, and is harder to understand and to communicate with (Osterwalder, 2004). This has increased the importance of business model research and its modularity aspect.

4.1 Definitions and positioning of the business model as a concept
The business model concept has become popular because today’s managers have a wide variety of choices when it comes to defining their value proposition, configuring their value network, choosing their partners, looking for ways to reach the customer, and making many other similar decisions (Osterwalder, 2004). Generally, the purpose of developing any model is to assist in understanding, describing, or predicting actions in the real world by presenting a simplified representation of a particular entity or phenomenon. The business model is such an abstraction; it represents the business logic of a company. It is an abstract comprehension of the way a company makes money, in other words what it offers and to whom. Chesbrough (2006) notes that business models are challenging to develop, however effective business models are tremendously valuable asset to the company.

Relationships and interfaces between strategies, business models, and processes.
Researchers have brought up the difference between strategy and business models in several studies (Stähler, 2002; Seddon et al., 2004). Most researchers recognize the relationship and interfaces between strategy and business models, while some also connect them to operative business processes. The distinction between strategy and the business model has received much attention. For example, Zott and Amit (2008) attempt a conceptual separation between strategy and the business model and state that “the business model is a structural template that describes the organization of a focal firm’s transactions with all of its external constituents in factor and product markets.” Casadesus-Mananell and Ricart (2007) maintain that “a company’s strategy results in a particular set of choices, which, together with their consequences, constitutes a business model.” Consequently, they regard business models as a reflection of strategy. Shafer et al. (2004) review articles on business models and classify the main components into strategic choices, value network, value creation,
and value capturing. According to them, a business model is not a strategy, but reflects the strategic choices made and can be used to analyze and communicate the strategic choices. Along similar lines, Morris et al. (2003) link business models to strategic management by stating that strategic choices characterize a company, while business models make the choices explicit. They see that business models have elements of both strategy and operational effectiveness, i.e. processes. Tikkanen et al. (2005) recognize a company’s network of relationships, strategy and structure, operations embodied in the company’s business processes and resource base, as well as finance and accounting as the main elements of the business model. According to them, the components of the business model embody the strategy. Heikkilä et al. (2007) see three different interfaces between strategies, business models and networks, and maintain that companies are engaged in three adjustment processes: horizontally at the strategy-business model-interface between the companies, horizontally at the processes-business model-interface between the companies, and “vertically” within each company to align the strategies and processes to meet the challenges of cooperation.

Fjeldstad and Haanæs (2001) recognize that tradeoffs determine the fit between the competitive context of a firm and its internal value creation. This in essence means tradeoffs between strategic choices and value creating business models and processes. Fjeldstad and Ketels (2006) see value configurations as powerful tools for analyzing strategic positions and less important in the analysis of operations. They are of the opinion that strategic positioning relating to value configurations creates value for customers.

To summarize the above discussion regarding strategy, business models and process models together, one can say that they address similar problems on different levels of business. The main difference is that the business model is a more concrete description of the operations of the company than the business strategy. Thus, a business model is positioned between business strategy and business processes. A business model is an expression of the company strategy in a concrete form, most often at a strategic business unit (SBU) level. In the business model, the vision and strategy of a company are translated into value propositions, customer relations, and value networks. Consequently, the business model is a suitable test-bed for the feasibility of the strategy. In the years of e-business hype, any new idea for a service was designated a “business model,” often without any link to business strategy, and lacking an earning model.

Approaches on business models. Research in recent years has produced several business model definitions depending on the viewpoint taken. These range from a strategic level viewpoint to technological characterization. Business models can be seen for example as:

- a value configuration for attaining competitive advantage (Stabell and Fjeldstad, 1998; Fjeldstad and Haanæs, 2001; Pulkkinen et al., 2005);
- the organization or architecture of product, service, and information flows and the sources of revenues and benefits for suppliers and customers (Timmers, 1998) or reorganization of business structure (Walters, 2004);
- the product, service, information, and earning flows of the company, its position in the value network and a description of the advantages and income sources
of different parties (Timmers, 1998; Rappa, 2000; Chapman et al., 2003; Kallio et al., 2006);

- an organization’s core logic for creating value (Linder and Cantrell, 2000);
- a coherent framework that takes technological characteristics and potential as inputs and converts them through customers and markets into economic outputs (Chesbrough and Rosenbloom, 2002) and links ideas and technologies to economic outcomes (Chesbrough, 2006);
- a story that explains how an enterprise works (Magretta, 2002); and
- the implementation of strategy into a conceptual blueprint of the company’s earning logic (Osterwalder and Pigneur, 2002; Osterwalder, 2004).

Several authors have proposed the main elements of business models, e.g. Pateli and Giaglis (2003) have grouped contributions into six different types of business models: definitions, components, taxonomies, representations, change methodologies, and evaluation models. According to Chesbrough (2003), a business model encompasses six functions: first, articulation of the value propositions that constitute the value created for users by the offering; second, identifying of market segment, i.e. the users to whom the offering and its purpose are useful; third, defining the structure of the value chain needed by the company to create and distribute the offering and define the complementary assets needed to support the company’s position in this chain; fourth, specifying the revenue generation mechanism and estimating the cost structure and profit potential of producing the offering; fifth, describing the position of the company within the value network, linking suppliers and customers, including identification of potential complementors and competitors; and sixth, formulating the competitive strategy. Chesbrough (2006) identifies companies with six different types of business models those: with an undifferentiated business model, with some differentiation in their business model, developing a segmented business model, with an externally aware business model, integrating their innovation process with their business model, and with a business model that is able to change and is changed by the market.

Rajala et al. (2001) depict a business model as consisting of four sub-models: a product development model, revenue logic model, sales and marketing model, and a servicing and implementation model. They also add competition, customers, resources and external financing as separate but important external influences on the operating environment. Fjeldstad and Haanaes (2001) present three different value creation types: value chain, value shop, and value network. Value chains sell products that are the outcome of a transformation process. Customers pay for the total quality of the product or product/service package. Value shops sell competencies and approaches to help solve unique problems. The customers pay for solutions to or effort spent on their problems. Value networks sell mediation between customers or places. The customers pay both for access to the network and for exchanges via the network. If the business is to function as an integrated unit, there must be a single dominant model that defines the value configuration model of the firm. In many cases, the overarching model is a strategic choice. It is not dictated by the industry. The choice of the dominant business model will determine not only a company’s overall strategy but also the main drivers of operations. However, many companies have divided their businesses in separate divisions based on different business models.
Osterwalder (2004) strives to build a synthesis of the business model literature, and defines nine business model building blocks consisting of four pillars: Pillar 1 product/offer (value proposition), Pillar 2 customer interface (target customer, distribution channel, relationship), Pillar 3 infrastructure management (value configuration, capability, partnership), and Pillar 4 financial aspects (cost structure and revenue model) (Table I).

Osterwalder refers to value configuration as a description of the arrangement of activities and resources that are necessary to create value for the customer. We point out that a company can use three fundamentally different value configuration models as Stabell and Fjeldstad (1998), Chesbrough (2003, 2006) and Fjeldstad and Haanæs (2001) have proposed. These different value configurations influence both the business models and the services offered.

As the preceding discussion illustrates, the definition of a business model varies from author to author. There is no consensus or mutual understanding in academia how business models should be defined and what should be included. For testing how to bridge the strategic view of the SPA model with business model analysis we use Osterwalder’s building blocks model as a tool, as it contains the main elements at the architectural level of business.

5. Business processes
The third module of our framework focuses on business processes. As globalized businesses face more competition, the cycle time for introducing products and services

<table>
<thead>
<tr>
<th>Pillar</th>
<th>Building block of business model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product</td>
<td>Value proposition</td>
<td>A value proposition is an overall view of a company’s bundle of products and services that are of value to the customer</td>
</tr>
<tr>
<td>Customer interface</td>
<td>Target customer</td>
<td>The target customer is a segment of customers a company wants to offer value to</td>
</tr>
<tr>
<td></td>
<td>Distribution channel</td>
<td>A distribution channel is a means of getting in touch with the customer</td>
</tr>
<tr>
<td></td>
<td>Relationship</td>
<td>The relationship describes the kind of link a company establishes between itself and the customer</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Value configuration</td>
<td>The value configuration describes the arrangement of activities and resources that are necessary to create value for the customer</td>
</tr>
<tr>
<td>management</td>
<td>Capability</td>
<td>A capability is the ability to execute a repeatable pattern of actions that is necessary in order to create value for the customer</td>
</tr>
<tr>
<td></td>
<td>Partnership</td>
<td>A partnership is a voluntarily initiated cooperative agreement between two or more companies in order to create value for the customer</td>
</tr>
<tr>
<td>Financial aspects</td>
<td>Cost structure</td>
<td>The cost structure is the representation in money of all the means employed in the business model</td>
</tr>
<tr>
<td></td>
<td>Revenue model</td>
<td>The revenue model describes the way a company makes money through a variety of revenue flows</td>
</tr>
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Table I. The nine business model building blocks and their descriptions
becomes shorter and customers more demanding. This drives enterprises to adopt systems and business models that not only provide operational efficiency, but also to add strategic value to their products and services (Ghodeswar and Vaidyanathan, 2008) and to redesign their supply chains (Rodrıguez-Dıaz and Espino-Rodrıguez, 2006). Recently, customer needs and expectations are changing rapidly and, e.g. logistics services are offered in a global marketplace. This has a profound influence on how the operational business processes should be organized for efficient service delivery. Consequently, a growing number of service users presently want fast, reliable, and cost-effective logistics processes (Persson and Virum, 2001). Besides, the distinction between strategy and business models, business models and business process models should also clearly be distinguished. A review of the business model literature shows that the business model concept is generally understood as a view of the company’s logic for creating and commercializing value, while the business process model is more about how a business case is implemented in processes (Osterwalder et al., 2005).

Business processes are defined as activities that produce a specific output of value to the customer. Moreover, the process can be defined as a set of logically related activities and resources needed to transform inputs to outputs. In organizations, the focus is on processes that are critical to success. These processes are often referred to as “business processes,” “principal processes,” “core processes,” or “key processes.” Hanafizadeh and Moayer (2008) underline the importance of defining the strategic processes or processes with a strategic nature. These critical processes are often presented in a process map. At best, processes go from customer to customer through departmental and organizational boundaries as process thinking permeates organizational and functional boundaries. Typical core processes are, e.g. product and service development, customer commitment, order fulfillment, and customer support (Laamanen and Tinnila, 2009). Both Cooper et al. (1997) and Lambert et al. (1998) suggest several key processes that could be linked across the supply chain: customer relationship management, customer service management, demand management, order fulfillment, procurement, manufacturing flow management, product development and commercialization, and returns. An important question is what processes should be linked with each of the supply chain members, and with what kinds of links (Cooper et al., 1997; Lambert et al., 1998; Lambert, 2006). Consequently, there is a need to define key business processes that are critical and beneficial to integrate and manage across the supply chain as well.

Business process reengineering (BPR) has been a popular research topic in recent decades. BPR aims at showing companies how to organize functionally separated tasks into unified horizontal business processes, creating value for customers (Hammer, 1990). The basic idea behind conceptualizing and categorizing business processes in organizations is to identify and design repeatable business processes that have enough elements of consistency (e.g. clearly identified inputs and outputs) to justify developing a common, “averaged” process for an organization (Stoddard et al., 1996). This could be seen as a way to modularize business processes.

Being one of the core competences of logistics service companies, the delivery process encompasses activities ranging from placing orders to receiving products and services. An organization’s delivery process might include activities such as order handling, procurement and production planning, production, testing, warehousing and transporting to the customer. Key issues in designing the process concern the extent to which products and services are standardized. Here, the main alternatives
are standard product delivery from stock, predetermined components which are assembled according to the customer’s order, and partly or totally customized project delivery (Laamanen and Tännö, 2009).

Baldwin and Clark (1997) divide modularity into modularity in the design of products and modularity in the use of products. They argue that modularity in production has a long history, as manufacturers have divided the manufacturing process into modules allowing a complicated process to be split up among different production facilities or even outsourced. According to Baldwin and Clark, a wide range of services is also being modularized. However, we see that the research towards modularity in services is still at an early stage.

Pekkarinen and Ulkuniemi (2008) identify “3D modularity” as:

- modularity in services;
- modularity in processes; and
- modularity in organization.

They claim that in order to use modularity in service development, each of these dimensions needs to be considered. A service, which is visible to a customer can be combined with one or several service modules. With regard to processes, a service production process is formed from one or several process modules that can, furthermore, either be related to information processing or physical operations. Finally, they see modularity in organization as a way to use the firm’s own and other firms’ resources in a flexible way. A modular organization is composed of organizational modules.

In the next section, we present the Itella Group case, where we will focus on three business processes that we have selected from the literature above (Cooper et al., 1997; Lambert et al., 1998): the customer relationship management process, the customer service management process and the manufacturing flow management process (in this case logistics service production process). The customer relationship management process focuses on identifying different types of customer groups. Customer service management illustrates the use of the modular services in the customer interface. On the other hand, describing the service production process clarifies how the service production has its base in the modular production structure (or processes).

6. A case example of logistic services, business models, and business processes
As markets become more competitive it is often necessary to increase service divergence, i.e. differentiate services to differing positions by offering a greater variety of services and channel options for the customers. “One size fits all” does not really need to be the solution for all relationships with supply chain members (Dyer et al., 1998; Lambert and Cooper, 2000). For background, during the past decade the European logistics service market has changed dramatically. One of the major drivers has been the deregulation of the European transport market. Mergers and acquisitions in the logistics service provider industry in Europe have led to a market with a few dominant players with global coverage and diversified activities, and a large number of small and medium-sized service providers with a regional and a more specialized service portfolio. For example, the Denmark-based transport and logistics company DSV A/S has developed through aggressive organic growth and acquisition to become one of Europe’s largest transport and logistics players. It now operates in 100 countries...
DSV's two largest acquisitions in the transport sector have been Samson Transport in 1997 and DFDS in 2000 (www.supplychainleaders.com/providers/).

As our case company is Itella Group, the former Finland Post, we will now briefly illustrate the changes in European postal services that have resulted from the liberalization process. The liberalization process has been a challenge for the postal services in Europe and has caused many changes in this sector with corresponding service repositioning. For Itella many of the changes are due to Finland’s accession to the European Union (EU) in 1995, and we describe Itella Group’s position in this service sector. Since 1996, we have seen waves of mergers and acquisitions in the European postal sector. For example, the Dutch Post Office acquired TNT in 1996 (the global logistics provider), in 1999 Tecnologistica (an Italian TPL service provider), in 2000 CTI (a US-based logistics service provider specializing in automotive logistics), and in 2005 the Wilson Group (an international airfreight service provider) (Skjoett-Larsen et al., 2007). In 2005, it acquired TG+2, a leading Spanish domestic distribution company and in 2006 Speedage, an Indian domestic express company and Hoau Group, a nationwide road transport and freight business company from China. In 2006, TPG Post changed its name to TNT Post. Recently, the company focuses more on small packages deliveries. The other big player in European markets, Deutsche Post acquired Danzas in 1999 (the Swiss transport and forwarding company) and later the Swedish ASG, the US-based AEI (international airfreight forwarder), DHL (global integrator), and in 2005 the large UK-based logistics service provider Exel. All the acquired companies now use the common brand, DHL (Skjoett-Larsen et al., 2007, p. 279). In the Scandinavian countries, one of the latest developments is the merger of the Danish and Swedish postal services. The merger is necessary as both postal services were facing increasing competition from foreign actors such as Deutsche Post, Finland’s Itella Group, and TNT of The Netherlands (www.iht.com/articles/ap/2008/04/01/business/EU-FIN-Denmark-Sweden-Postal-Merger.php). In this European playground, our case company Itella Group is a strong partner for mail order solutions in Scandinavia and the Baltic Countries. This is shown, e.g. by the recent alliance of Nordic Postal services within the Baltic countries (www.pannordic.com/en/Company/Press/Pressreleases/Pan-Nordic-Logistics-Nordic-post-alliance-expands-in-the-Baltic-Region/). Itella provides its customers business-to-business and business-to-customer solutions from the management and transport of goods and information to managing the accompanying financial transactions. Next, we analyze the services offered and modular processes used by the Itella Group. We analyze the services with Osterwalder’s business model building block model and the SPA matrix.

6.1 Itella Group: the case company
In the case analysis, publicly available material (www.itella.com), as well as interviews and internal material were used. Itella Group is a logistics service company providing services for managing customers’ information and material flows. The Group operates in ten Northern European countries, providing consumer services under the Posti brand in Finland and corporate services under the Itella brand at the international level. Key customer industries are the retail and wholesale trade, the media, the finance and telecommunications industries, and the public sector. In 2007, Itella Group reported net sales of €1,688 million and employed approximately 25,000 staff, of whom
8 percent, or some 1,900, work outside Finland. The Group’s parent company is Itella Corporation, which is entirely owned by the Finnish State. In Finland, Itella serves 250,000 corporate customers and the post some 5.3 million consumer customers. Improving customers’ experience is the key theme of Itella’s strategy. While most of its direct customers are companies and organizations (95 percent), the majority of the end-users of services are consumers (over 90 percent). The satisfaction of both customer groups is vital for success. Smooth flows of information and material are Itella’s mission.

Itella produces added value for the businesses of corporate customers by supporting vital corporate processes with mail communication, information flow management, and service logistics solutions. Service logistics refers to goods flow management, i.e. freight, warehousing, and transport services, which are offered by Itella logistics. For consumers, Posti offers a wide range of multi-channel services for sending, receiving, e-transactions, and special occasions. In Finland, Itella’s market leadership is based on an efficient service and delivery network, which allows it to offer extensive multi-channel services throughout the country. In the international market, innovative, technology-based services and customer-focused operations distinguish Itella from its competition. Factors that have a major impact on Itella’s strategy and business include the progress of digitization, changes in customer behavior, global competition and ecological corporate responsibility requirements.

Itella Group’s operations are organized into the following three business groups: Itella Mail Communication (51 percent of net sales in 2007) provides letter, direct-mail and magazine/newspaper delivery services in Finland and on a global basis through partners; Itella Information (12 percent of net sales in 2007) provides corporate customers in nine countries with solutions for boosting their information flow management. It receives, processes, converts, stores, archives, channels, and transmits information on behalf of its customers in both printed and electronic form. Its services are related to document communication and document management. Itella logistics (36 percent of net sales in 2007) is a service logistics provider in northern Europe and operates elsewhere through partners. Its services encompass freight and forwarding, contract logistics, and parcel services. Itella’s intelligent logistics solutions can be integrated directly with the customer’s own information systems. Moreover, for consumers Itella offers NetPosti, an electronic transaction service. NetPosti is an alternative to a physical mailbox coupled with a file archive.

Osterwalder’s (2004) model helps us get a general view of Itella’s business architecture (Table I) and to analyze some of its services (Table II) in a standardized and modularized way.

6.2 Strategic positioning of logistics services offered by Itella Group
The value propositions – in this case services of Itella Group – are shown in Figure 4 with the SPA matrix shown earlier in Figures 2 and 3. In Figure 3, we have shown an industry level analysis with a portfolio of efficient service offerings in the logistics service industry in general. This part presents a corporate level SPA analysis of Itella Group’s service portfolio. The aim is to illustrate the strategic repositioning of Itella’s services. The standard services, i.e. letter and package services are based on service personnel and they are very labor intensive. They are also mass transactions. The e-post service, which is designated for example, for mass mailing of bills and offered to
public sector and large companies, also serves mass markets, but it is based more on open electronic networks combined with standard services. Mass mailing services are standardized services for the business-to-business market. Home deliveries are more customized services, and still based largely on personnel. Kiosk services (postal agency shops) are partly outsourced services, i.e. they are provided by other firms acting in alliance with Itella. Moreover, Itella offers several types of contract logistics services, e.g. transports and warehousing. In addition, more customized and more complete solutions for outsourced service are offered. In the matrix, many consumer services have been repositioned toward more standardized service types, while many company services have moved toward higher customization and alliance type relationships.

6.3 Business models in logistics services offered by Itella Group
The services presented above are examples of the differentiated business models that Itella uses in its services. We have chosen four of them for an in-depth analysis of their building blocks with Osterwalder’s model in Table III. This is a general level analysis, as the focus is on highlighting the differences in the building blocks. The value propositions show a degree of divergence in services, which is reflected in relationship
types, distribution channels, cost structures, and revenue models. The detailed business model building block analysis facilitates understanding of the strategic positions held by services in the SPA matrix, while the SPA points out the underlying inefficiencies. The analysis of building blocks also reveals inconsistencies within a business model. For example, there should be a match between cost structures and revenue models and between value configurations and partnership types as well.

6.4 Itella Group’s processes
Strategy, business models, and process models address similar problems on different business levels. Strategy focuses on corporate/group and planning level, business models on the business unit and architectural level, and business processes on the functional and implementation level. Different types of standard and customized services can be produced by combinations of process modules. We argue that as there should be a match between strategic service position and business models, a corresponding match should exist between business models and their implementation level counterparts, i.e. business processes.

Next, we will focus on three business processes and their modularity in the business models of e-post, letter, package, and contract logistics services. The three processes depicted are customer relationship management process, customer service management process, and manufacturing flow management process (in this case logistics service production process).
The customer relationship management process focuses on identifying different types of customer groups. Itella Group focuses on two different types of customers: consumers and organizations – companies and public sector organizations. We can find some similarities (synergies) and differences regarding how different types of services are offered and organized to these customer groups.

Customer service management illustrates the use of modular services in the customer interface. Itella Group offers letter services to consumers and companies/public organizations. Letter services for companies and public organizations are contract-based and may include letter pick up from an organization’s premises while consumers deliver their letters themselves to mailboxes or post offices. The package (parcel) service for companies and public organizations is similar to the letter service (Figure 5). Typically, the same contract includes both types of services. E-post services are offered to companies and public organizations. In this service, customers send their e-letters electronically to the printing service unit where letters are either printed or forwarded in electronic form to customers. Contract logistics, e.g. warehousing services are typically based on more complex customized contracts and could include picking up and packing and final assembly.

### Table III.
The divergence of Itella Group’s services and business models analyzed with Osterwalder’s model

<table>
<thead>
<tr>
<th>Building block of business model</th>
<th>e-post</th>
<th>Letter service</th>
<th>Package service</th>
<th>Contract logistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Value proposition</td>
<td>More efficient letter service by combining digital networks and letter service</td>
<td>Standard postal service</td>
<td>Standard postal service for different types of packages</td>
<td>Extensive logistic service package consisting of, e.g. warehousing services</td>
</tr>
<tr>
<td>2. Target customer</td>
<td>B-to-B mass mailers</td>
<td>Both consumers and firms</td>
<td>Both consumers and firms, but B-to-B dominant</td>
<td>B-to-B customers with outsourcing strategies</td>
</tr>
<tr>
<td>3. Distribution channel</td>
<td>B-to-B sales personnel</td>
<td>Shops (branch offices)</td>
<td>Shops (branch offices) and kiosks, contract services</td>
<td>Sales personnel</td>
</tr>
<tr>
<td>4. Relationship</td>
<td>Long term contract</td>
<td>Transaction based or contract</td>
<td>Transaction based or contract</td>
<td>Multiyear contract</td>
</tr>
<tr>
<td>5. Value configuration</td>
<td>Internet and letter service</td>
<td>Own postal network</td>
<td>Own postal network</td>
<td>Internal logistic services and partners</td>
</tr>
<tr>
<td>6. Capability</td>
<td>Internet and internal (Itella) network</td>
<td>Countrywide network</td>
<td>Countrywide network</td>
<td>European and global network</td>
</tr>
<tr>
<td>7. Partnership</td>
<td>Partnership with teleoperators</td>
<td>Own, internal network</td>
<td>Own, internal network</td>
<td>Internal network and partners</td>
</tr>
<tr>
<td>8. Cost structure</td>
<td>Fixed costs of network, very low per unit costs</td>
<td>High fixed costs of network, low unit costs</td>
<td>High fixed costs of network, low unit costs</td>
<td>Infrastructure and equipment costs</td>
</tr>
<tr>
<td>9. Revenue model</td>
<td>Contract fee with small unit fee</td>
<td>Unit fees/contracts for B-to-B</td>
<td>Unit fees/contracts for B-to-B</td>
<td>Contract-based fee</td>
</tr>
</tbody>
</table>
The service production process clarifies how the service production has its base in the modular production structure and processes. For letters to consumers and company/public sector customers, the production process is the same in letter sorting module as well as terminal-to-terminal transport. The sorting process for small packages is different from the letter sorting process as it uses different types of machines. For contract logistics, warehousing services are typically done in warehouse premises and products are typically transported directly to customers of the company/public organization.

6.5 Analysis of the Itella Group

In the analysis of the illustrative case, we have used the frameworks for different levels. The Itella case emphasizes the need for matching strategies, business models, and processes. Restructuring of the logistics market and liberalization and opening of electronic channels have influenced the repositioning of the strategic position of Itella Group as a logistics service company, which is also in charge of postal services in Finland. Introduction of new innovative services has been partly necessitated by increased competition in previously unchallenged areas. New business models have been introduced in e-business logistics, e-post solutions and contract logistics.

However, the case study indicates that these changes are not yet fully reflected in business models. Several key building blocks of business models, such as value propositions and delivery channels, seem to have remained much the same, despite the strategic repositioning. For example, the distribution channel has not fully followed the change in strategy in all business models, as digital channels are not yet fully utilized. Similarly, cost structures have remained much the same, as Itella has the high-fixed costs of its own internal countrywide network, in addition to the new internet-based networks. Consequently, it seems that at the moment several business
models are overlapping, as conventional and internet-based service (e.g. e-post) answer to the same customer needs.

New business processes have been introduced both in the customized services and in the routine digital services. Many of the production processes are based on joint processes, as shown in Figure 5, where the process flows have remained the same. The changes required are made by adding new process modules such as electronic letter delivery or by setting differentiated process requirements, e.g. in terms of throughput time. Some of the main processes, such as letter and package sorting, have large-scale economies and are consequently not easily changed.

7. Discussion and conclusions
The range and scope of logistics services have clearly extended during the recent decades. Consequently, a multitude of new business models in different strategic positions have emerged in the market. This paper analyzes the relation and match of frameworks for analysis of service strategies, business models, and business processes. Particularly, the aim has been to connect business model approach, i.e. analysis of different options for value creation, to analysis of efficient delivery of services. The background for both approaches is based on literature of business models, value creation, logistics services, service strategies, and efficient service deliveries. We have also connected the modular business process approach to frameworks for service strategies and business models. In summary, we have aimed to present a meta-framework about the relations of the approaches to each other and how to coordinate three levels of business frameworks at planning level, architectural level and implementation level.

Owing to increasingly complex business networks and supply chains, as well as, needs of more demanding customers, business model research has obtained increased attention. In this paper, we provide a way to connect business models with efficient delivery of services. We introduce a framework for developing business and services by connecting Osterwalder’s (2004) nine business model building blocks with the service process positioning matrix (SPA) (Tinnila and Vepsäläinen, 1995). Osterwalder’s model offers a useful framework for analysis of the key elements of business. Although the benefits of business model thinking are clear, a drawback is that the interlinked connections between building blocks seem to fade. Business model thinking does not provide any tools for analyzing efficient delivery of services. The SPA model helps to bridge this gap and connects the business model framework with the mix of efficient service outputs by facilitating the analysis of efficient delivery channels.

7.1 Theoretical implications
Strategy, business models, and process models are closely linked, as they focus on the same challenges in organization, although on different levels. Business models are concrete descriptions of how a company fulfils its value proposition in different businesses at the SBU-level, while strategy is a tool for planning and management at corporate level. By defining and executing different business models and their building blocks, such as value configurations, a company realizes its visions and strategic plans. The different types of services a company offers are produced by combinations of business processes and their modules. We maintain that a match should exist between
the different levels, and thus strategies, business models and business processes need to be aligned to provide value to customers efficiently. At industry level, a corporation positions itself by defining a portfolio of value offerings to its customers. The value offerings are realized by business models consisting of different building blocks.

7.2 Managerial implications
We argue that the different value configurations influence both the service strategy and business models and processes. With the help of the framework presented it is possible to find a match between service strategy, business models, and operational level business processes. We maintain that the delivery channel, i.e. how the service is delivered to customers, should match with the value proposition and capabilities of the company. For example, a customized contract logistic service-package requires different capabilities than a standard delivery, with accordingly different processes. Standardization, modular services, and service production structures are useful tools for efficient service production and output. Frameworks help to find a match between strategic service position of the company and the types of business models, and a corresponding match between business models and their building blocks, including business processes. For the management, the frameworks presented facilitate analysis of the different options available for the firm.

The case analysis of a large logistic service company illustrates the challenges and practices of these three levels. The case comes from industry, where the market structure has changed significantly, and forces players into strategic repositioning. The logistics industry has undergone many of these repositionings due to mergers, market liberalization, and introduction of EU-wide markets. The recent economic depression will certainly result in more. Strategic repositioning can determine a suitable combination for providing the core competencies of a corporation to markets in a new situation. We also point out that when corporations reposition themselves at strategic level, they exert a direct impact on the business model and process levels. The levels should match for efficient structures and operations.

Figure 4 shows how the strategic repositioning creates needs to change the business models and their building blocks. These in turn necessitate changes in business process flows and measures. Quite often an analysis reveals inconsistencies between these levels. In the illustrating case example, the strategic level changes were not fully reflected in the changes of business models. As the business model has been defined as a tool for business unit level planning in choosing the right combination of building blocks, elements such as value proposition and configuration and delivery channel underwent only moderate change in the case. Similarly, as business processes are the practical elements needed for implementing the activities, the right process flows and measures must be chosen for each business model. The measures are the means for managing the processes and setting targets for them. In our case, for example, the variations in process flow between delivery processes are small, although some measures, e.g. throughput or customer response times, differed more.

Figure 6 shows the interfaces and interdependence of the three levels recognized. For example, a strategic repositioning due to changed markets can be seen in the changed position in the SPA model. Consequently, some changes are needed to the building blocks of business models, e.g. increased standardization in value proposition. To match these changes, process flows and measures need to be changed. The trend
Figure 6. The framework showing the relationship between strategic service positioning, business models, and business processes.
is toward more streamlined processes with less variation in time to fulfill the more standard business model.

In this study, we have recognized the interdependence between the levels of strategic repositioning at corporate level, the architecture consisting of business models at business unit or divisional level, and the implementation of business at business process level. To successful provide value to customers, corporations must match these levels. This is of particular importance in strategic level repositioning, as the corresponding changes at business model and process levels are often omitted.

Managerially, recognition of the interconnections between these levels will facilitate better realization of strategic choices, as the framework will help management to find a match between the strategic service position of the company and its business model and the corresponding match with business processes. As companies are constantly evaluating the need to reposition and to develop new business models for increased earnings, the analysis brings to mind the need to revise business processes accordingly. The framework assists in the analysis of the different options available to the firm.

7.3 Future research topics
Further studies should be made on the relationship of the three levels recognized, as most of the present studies have focused just on one of the levels. While the relationship of strategy and strategic position with business models has received some attention by several authors, the linkages between business models and business processes have received scant attention. Also, further empirical research should be made to facilitate modeling and measuring the relationships between the different levels. Furthermore, the possibilities created by modular business models and processes should be further analyzed.

References


Further reading

Web sites
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