

MANAGING CUSTOMER INTERFACES IN INNOVATIVE INDUSTRIAL SERVICE PRODUCTION

Tuula Mittilä
Turku School of Economics at the University of Turku, Pori unit
Pohjoisranta 11 A
28100 Pori, Finland
e-mail: tuula.mittila@utu.fi

ABSTRACT

Many scholars have called for a close investigation of service issues in B2B markets (e.g., Zolkiewski and Lewis 2003, Parasuraman 1998). This research project was designed to explore how customer understanding is created in industrial firms, especially in service innovation and development. Its theoretical background stems from services marketing and B2B marketing.

According to Ford (2009), an IMP concept of service relates to specific problems and uncertainties of both counterparts rather than to general characteristics, offerings or problems of either or both of them. However, in this study the focus is on the suppliers' side of service(s) and service development. The purpose of the paper is to scrutinize the change in industrial networks and customer interfaces in the context of radical innovation, in this case in an industrial service company changing its business logic from a product oriented to a customer oriented producer. This is done by discussing earlier studies about radical innovations reported in the literature and by reporting the findings of a Finnish case study focusing on industrial B2B services that support customers' business processes.

The results indicate that the transformation from product-oriented to customer-oriented business-driven service providers is a necessity. Adoption of the new mentality, i.e., customer-dominant logic, and the adaptation of the activities needed to become customer oriented are still, however, in their infancy. The study also indicates that raising the level of the research on radical innovation from an operational level to a strategic, business model level is needed.

Keywords: Radical innovation, Industrial service development, Customer understanding, Networks

INTRODUCTION

The role of services and their significance to economic growth and employment is constantly growing. To gain competitive advantage, companies have to innovate and implement new service strategies. Thus, the focus of businesses is shifting away from tangibles towards intangibles such as skills, capabilities, information, and knowledge as service innovation and development processes differ from traditional product innovation processes in being more fuzzy and unpredictable. Especially studies with a service-oriented approach start from the notion that services are distinctly different from manufacturing and that service innovation has features that requires new theories (Coombs and Miles, 2000; Gadrey, Gallouj and Weinstein, 1995; Sundbo, 1997; Sundbo and Gallouj, 1998; van der Aa and Elfring, 2002).

The complexity of the service is associated with the specification of the content of the service. The work of the IMP group has considered services as one part of an offering and there have been some studies on business relationships involving the supply of services (Ford 2009). According to Ford, an IMP concept of service relates to specific problems and uncertainties of both counterparts rather than to general characteristics, offerings or problems of either or both of them. However, in this study the focus is on the suppliers' side of service(s) and service development.

The number of B2B service offerings is highly diverse. There are, for example, facility services, financial services, logistics and transportation services, knowledge intensive services and professional services. Common to all are such service characteristics as intangibility, inseparability, perishability and heterogeneity. The complexity of the service is associated with the specification of the content of the service. Furthermore, in contrast to goods, the interaction between the customer and the supplier is extended throughout the period during which the supplier provides services to the customer company and services are produced and consumed in interactive processes between the parties. (for more, see Mittilä 2008). Salle, Cova and Dontenville (2000) identified four types of service offerings "surrounding" products of industrial products manufacturers. Two of them were already presented by Mathieu (1999), namely services which support the supplier's product (SSP) and services which support the client's actions in relation to the supplier's product (SSC), which Salle et al called SSC1. Two new types of services found were services which have no direct link with the supplier's product but which help customer activity and market position (SSC2) and services which support the customer's network (SSN). According to the writers, the latter (SSN) are used mainly by companies which sell complex systems and equipment (project marketing and system selling field). Our case company belongs to the category SSC2.

In industrial service networks, the customers are organizations that have different procurement strategies and complex demands (e.g., Fitzsimmons et al 1998; Jackson and Cooper 1988). The importance of considering the viewpoint of customers in overall success of contemporary and future organisations generally (e.g., Skyrme 2002; Kahn 2001; Day 1999; Narver and Slater; 1990), and from the perspective of innovation process more specifically, has been emphasized by numerous authors (e.g. Lagrosen 2005; Joshi and Sharma 2004; Salomo, Steinhoff and Trommsdorff 2003; Leonard 2002; Cooper 1999, 1996). The development of products and services that customers find attractive and useful is a prerequisite for organizational success. Inasmuch the development, implementation and improvement of industrial services often needs high focus on customer understanding and network interactions, relational

considerations and the involvement of customers, suppliers and specialists in the development and implementation processes are becoming increasingly critical for a company's performance.

The purpose of this paper is to scrutinize the change in industrial business networks and customer interfaces in the context of a radical innovation, in this case a service supplier turning from a product oriented to a customer oriented service producer. This is done by discussing earlier studies about radical innovations reported in the literature and by reporting the findings of a case study focusing on industrial B2B services that support customers' business processes.

The Finnish case company is an industrial service company that specialises in environmental management and property and plant support services and is a leading supplier of wood-based biofuels, recovered fuels and recycled raw materials. With operations in Finland, Sweden, Latvia and Russia, the company employs 9,400 persons. Net sales in 2010 amounted to EUR 598 million.

The paper is organized in the following way. After the introduction, there is a short literature review concerned with radical innovation. Then, the methodology of the empirical study is presented and the description of the case company is introduced. Finally, the findings are discussed and conclusions with considerations of future research paths are presented.

LITERATURE REVIEW

A service provider is often required to customize services to meet individual customer needs and to respond positively to changing customer requirements. Changing customer needs, rapid technology development, and increased competition drive the service providers to continuously innovate and to focus on the creative use of technology, knowledge and networks in order to provide services that create value for a customer (van Riel and Lievens 2004; Kandampully 2002).

Innovation in general is a process that may result in new or improved physical products, extended products (Kuusisto and Meyer 2003), new or improved internal processes and organization, or improved networking, marketing and sales, etc. (Tidd and Hull 2005). In the area of industrial services, some literature exists on the development of services when a manufacturer changes its role to become a service provider (Paloheimo, Miettinen and Brax 2004; Windahl, Andersson, Berggren and Nehler 2004; Bitran and Pedrosa 1998); on the development of performance-based service strategies (Kumar and Markeset 2007); on the challenges faced in outsourcing industrial services (Nordin 2006) and on the design and development of product support and maintenance concepts for industrial systems (Markeset and Kumar 2003). However, there is a need for studies concerned with the role of customers and customer understanding in service innovation.

What is a *radical* innovation?

Researchers are not unanimous on the formal definition of radical innovation (Dewar and Dutton 1986; Ehrnberg 1995; Ettl, Bridges and O'Keefe 1984; Green, Gavin and Aiman-Smith 1995). The definition of Green, Gavin and Aiman-Smith (1995) incorporates four dimensions. They are technological uncertainty, technical inexperience, business inexperience and technology cost. Leifer (2000) defined radical innovation as an innovation that creates an entirely new set of performance features; improvements in known performance features of five or more times

greater; or a significant (30% or greater) reduction in cost. In 2002 McDermott and O'Connor defined innovation as a new technology or combination of technologies that offer worthwhile benefits. According to them, major (or radical) innovations require new skills, level of market understanding, leaps in new processing abilities, and systems throughout the organization. Lately, Story, Hart and O'Malley (2009) discuss the relationship between resources and competences required for radical innovation in the automotive industry. They state that prior research on product innovation does not foreground the specifics of "radical" or "discontinuous" innovation.

In the service sector, according to de Wries (2006), two important insights from the demarcation studies are the problematic distinction between radical and incremental innovation, because changes in services might be a result of evolution, revolution, disappearance, appearance, association and disassociation mechanisms (Gallouj and Weinstein, 1997; Sundbo, 1997; 1998); and the problematic distinction between product and process innovation, because services are acts or processes instead of products (Gallouj and Weinstein, 1997; Hauknes, 1998).

Incremental innovations are typically extensions to current product offerings or logical and relatively minor extensions to existing processes (Dewar and Dutton 1986; Ettl, Bridges and O'Keefe 1984). Radical product innovations involve the development or application of significantly new technologies or ideas into markets that are either non-existent or require dramatic behavioural changes to existing markets (McDermott and O'Connor 2002). Effectively developing radical innovations, therefore, is critical to the long-term survival of many of today's firms.

Are product and service innovations alike?

There has been a lively discussion in the literature on the specific characteristics of products and services (Lovelock & Gummesson, 2004; Vargo & Lusch, 2004; Zeithaml, Parasuraman & Berry, 1985) and implications for the marketing discipline. Other authors (e.g. Griffin, 1997; Hughes & Wood, 2000; John & Storey, 1998; Sirilli & Evangelista, 1998) have studied how service and product characteristics affect new service and product development (see Drejer, 2004 for an overview).

According to Nijssen, Hillebradd, Vermeulen and Kemp (2006), the literature shows that the development of new products and services have much in common, but also that internal organizational factors seem to be more important in a (new) service development than in a (new) product development context. Contrary to manufacturing firms, most service firms are not characterized by major R&D departments (Djellal & Gallouj, 2001). Service innovation involves the development of new procedures and concepts rather than new core technology (Preissl, 2000). Together with the organization of new service development around customers' market pull, this suggests a smaller role and influence of the R&D department in service development.

Stevens and Dimitriadis (2005) conducted a longitudinal case study of a bank and a retailer. Their findings led to a proposition of a model of new service development comprising a strong organizational learning process. The results of the study revealed an informal development process consisting of a sequence of issues to solve and decisions to make. They also identified multiple learning actions and strategies that enhance the process' effectiveness and efficiency. In Stevens and Dimitriadis's study, actors participating in service development

were general management, marketing department, information systems department, project teams, other departments and distribution network.

Gallouj and Weinstein (1997) were among the first to take the synthesis approach in studying innovations. Their approach is based on a model in which services and goods are represented by four vectors of characteristics and competencies; vectors of outcome characteristics, the provider's competencies, the provider's technological characteristics and the client's competencies. The writers define innovation as any change affecting one or more terms of one or more of the vectors. Based on this formalisation Gallouj and Weinstein distinguished six modes or types of innovation which can take place in some of all parts of the service, namely radical -, improvement -, combinatory (architectural) -, formalisation - and ad hoc innovations. (Gallouj and Weinstein 1997; de Vries 2006, Droege, Hildebrand and Forcada 2009).

Droege et al (2009) discuss the novel concept of ad hoc innovations. De Vries (2006) defined ad hoc innovations as "the interactive (social) construction of a solution to a particular problem put forward by a client", (de Vries 2006, p. 1039). According to them, this type of innovation in services is criticised by scholars such as Drejer (2004), who argued that, due to the non-repeatability of ad hoc innovations, this is not an innovation in a Schumpeterian sense (Drejer, 2004). However, De Vries (2006) conceptually broadened Gallouj and Weinstein's original model and tested it in the course of a number of case studies. He concludes that ad hoc innovation can in fact be regarded as a valid type of innovation. (Droege et al.2009).

Success factors of innovation

De Brentani (1989) identified four distinct performance factors that are associated with new service success. Each dimension represents an independent approach to gauging the success or failure of the service projects. They include Sales and market share performance, Competitive performance, "Other Booster" and Cost performance. A strong market- and marketing-orientation is key to achieving a high level of Sales and Market Share. Marketing-orientation within the firm is essential as well. The pre-sale of a new service to frontline personnel, who have contact with potential clients, and are involved with different functional specialities in the innovation process, plays a key role in gaining market acceptance. Finally, choosing projects that fit to the firm's core line of services and benefit from its marketing proficiencies (e.g., sales force) are significant coefficients in Sales and Market Share success.

For the Competitive Performance dimension, the dominant success variables are innovativeness and superior quality. As with Sales and Market Share Performance, success on the competitive dimension also requires an understanding of market needs and good internal marketing. In addition, formal pre-launch testing of the new service to make necessary adjustments and eliminate bugs is closely linked to getting a competitive edge.

Projects characterizing successful "Other Booster" form of new service development performance are usually expert, auxiliary services aimed at the company's existing client base. The new services are highly synergistic with the firm's management skills, reputation and financial resources and take advantage of available expert and customer contact personnel.

New service development projects that score high on the fourth success factor, Cost Performance, are improvements or modifications of existing services. These services also tend to fit well with available resources, including production and marketing, financial, expertise and managerial, producing important cost efficiencies. Other projects that improve Cost Performance

are new services that respond to peaks or valleys in customer demand. Good internal communications and employee involvement in the stages of the new service development process are essential for success in this dimension.

Van Riel, Lemmink and Ouwersloot (2004) studied high-technology service innovation success. According to them, external success factors reflect, for example, how well a new service addresses opportunities and threats in the market environment, or how well a new service complements or supplements existing products and services. External success factors are perceived immediately by the customer as benefits of the new service. Internal success factors, associated with the firm's competencies, affect customer benefits only indirectly (Storey and Easingwood 1993): Evidence was found that the competence to innovate (Menor et al. 2002), the organization of the firm's new service development process (Cooper and Edgett 1996, Froehle et al. 2000, Storey and Easingwood 1998, Sundbo 1998, Tax and Stuart 1997) and an appropriate organization structure and decision architecture (Burns and Stalker 2001, Cooper 1992, Tushman and O'Reilly 1996) contribute substantially to innovation success. Other internal success factors are the amount and quality of conducted market research, development speed, technological advantage, and synergy between the new service and the organization, e.g., economies of scale and scope that can be reaped by sharing resources between new and existing services (Storey and Easingwood 1998).

Business model innovation

Earlier studies seem to have studied service innovations and new service development from the service as an outcome or service as a process perspective. Here, another perspective is taken by moving from tactical and operational to strategic level of service. For the purpose of this study, radical service innovation is defined as the creation and implementation of a new way of acting within the firm and in the marketplace. This may also be labelled as business model innovation. According to Johnson, Christensen and Kagermann (2008) very little formal study has been done into the dynamics and processes of business model development. They identified two reasons for that. The first is the lack of definition and the second that few companies understand their existing business model well enough. "So they don't know when they can leverage their core business and when success requires a new business model" (ibid, 52). However, according to Johnson et al., a 2005 survey by the Economist Intelligence Unit reported that over 50% of executives believe business model innovation will become even more important for success than product or service innovation.

According to Johnson et al. (2008) a business model consists of four interlocking elements which, taken together, create and deliver value: customer value proposition (CVP), profit formula, key resources and key processes. "The customer value proposition and the profit formula define value for the customer and the company, respectively; key resources and key processes describe how that value will be delivered to both the customer and the company" (ibid, 53).

How to manage innovations?

Innovation projects may arise in response to market or customer feedback or direct competitive threat. They may also arise from an identified market need and from technology based 'big

ideas' and what they can offer to the marketplace (O'Connor 1998). Most breakthrough innovations require long-term (typically ten years or longer as stated by Morone 1993) development time and millions of dollars of investment. Due to the longevity of a project there may be turnover among development team members and senior management. These, coupled with other exogenous events, add to the unpredictability of the process (Rice, O'Connor, Peters and Morone 1998). Furthermore, the newly developed product or service is so distinct from current and existing activities within the firm that the process of bringing the product or service to market may not closely parallel that of any existing products or services within the firm.

McDermott and O'Connor (2002) identified three innovation management themes: market scope; competency management and people issues. The choice of market scope is an early differentiator in managing radical innovation processes. First kinds of radical innovations serve to strengthen the firm's position in familiar markets by bringing breakthrough technologies and new services to them and advancing the state of the art by big leaps. For the second type of radical innovations the market is not clearly identified or developed. However, "while these are the riskier and more uncertain efforts, they are the ones with the potential to the organization in new directions that provide rich platform for growth." (ibid., 427).

As to competency management, radical innovations stretch firms beyond their current scope of capabilities. Tuschman and Anderson (1986) suggest that competencies may be enhancing, i.e., they further a firm's leadership position though the extension of strengths. Competences may also be destroying as they replace existing strengths and incumbent firms. McDermott and O'Connor (2002) found an additional phenomenon: competency stretching. This stretching took the form of the firm moving to a new direction.

With respect to the role of individuals in radical innovation, McDermott and O'Connor (2002) identified the issues of leadership roles, the composition of the team and informal networks.

Due to the critical contribution of alliance partners in radical innovation, project managers devote significant time and effort in finding partners for the purpose of accessing competency based resources, and negotiating appropriate relationships. Also, managing relationships for competency development is a continuing challenge as identified by McDermott and O'Connor (2002). In addition to managing external partners, project leaders work to manage interfaces between the radical project and the mainstream organization.

Next, we move on to study the empirical evidence of how the case company has changed its relationship management in an attempt to radically innovate its service orientation.

METHODOLOGY

We employed the IMP approach to study the case. The IMP (Industrial/International Marketing and Purchasing) Group introduced the Interaction Approach to industrial markets (Håkansson 1982). The focus of the approach is on a two-party relationship, but the approach can also be applied to a multi-party relationship. According to researchers outside the IMP, Vargo and Lusch (2008), in a collaborative model of value creation one party does not produce value while the other consumes (or destroys) value. They reciprocally co-create value, with each party bringing their own unique resource accessibility and integratability into that process. Vargo and Lusch refer especially to the work of the IMP group as being in head of creating understanding in business marketing (e.g., Håkansson and Prencert 2004). According to them, particularly

noteworthy in this regard is the actor, resource, activity (ARA) model (e.g., Håkansson and Snehota 1995), which is relatively effortlessly isomorphic with the resource integrator/resource/service model of service-dominant (S-D) logic.

The empirical data for the study at hand was collected as a part of a research project aiming to enhance customer understanding in industrial service innovation and development. The main empirical evidence comes from a service company aiming to change their whole business from product oriented to customer oriented. This can be considered a radical innovation at a strategic level because the orientation is new to both the company and the market.

We interviewed four representatives of the case company. From the industrial solutions division we interviewed the key account manager responsible for customer relationship at the tactical level, the customer director responsible for customer relationships at the strategic company level and the business director who is responsible for two business areas: industrial cleaning and environmental management solutions. The fourth interviewee, the sales manager, represented the service development unit that innovates and develops services for shops, supermarkets and shopping centres. The first interview with the key account manager, the contact person of the research project, was an open interview conducted by four researchers from our side. The other interviews were conducted with a semi-structural interview guide.

All the interviews were recorded and transcribed. The first analysis was conducted using the ARA (actors, resources, activities) model. Thereafter, the data was analysed according to different themes, such as capabilities, services, customers, service innovation and development, information management etc. in order to build a deep understanding of the case.

THE CASE

Services of the company

Services and products provided in Finland include environmental management services, support services for properties and plants such as industrial sites, shops, supermarkets and shopping centres, office support services and environmental products. In Sweden the company provides cleaning and office support services, as well as hygiene services for the food industry. Waste management and recycling services, as well as cleaning, office support services and environmental products are provided in Latvia, and in Russia the company provides waste management and recycling services, cleaning and office support services, maintenance services for outdoor areas, as well as environmental products. The case company is the leading manufacturer of recovered fuels and wood-based biofuels in Finland. Its operations promote the recovery of waste and by-products.

Services offered to industrial customers vary a lot. Thus, also the production of different services and their costs vary. Waste management and recycling services require equipment and fleet and thus fuel expenditures are high. In cleaning, for instance, wages are the biggest cost.

The maintenance of properties and plants requires many kinds of professional competences. Competences materialize in cleaning services, damage repair services, industrial cleaning, property maintenance, maintenance of technical systems and wastewater services.

An example of new service solutions is a Shopping Centre -product. It is an easy and flexible service package including support services for a shopping centre. The package, which

consists of maintenance services for indoor and outdoor areas as well as office support services, promotes the business of the shopping centre by paying special attention to the comfort of the businesses and their customers.

Service innovation and development

There is a service solution unit in the corporation's headquarters with two persons who look for customer needs. Service development in that unit is mainly about combining existing services to make them look more customer-oriented, i.e. tailoring ready modules to fulfil each customer's needs. However, strategic service development perspective requires continuous collaboration, not letting potential suppliers to compete on a regular basis. What is new in the customer-oriented concept is that services offered in every partner-relationship are constantly developed together with the customer. Development projects are well-defined in the unit, how they are started, conducted and documented. This has led to a new way of acting in the company. There are multiple development projects going on with customers. They aim at adding value to the customer either by reducing the customer's costs or by helping the customer better serve their customers, for example via environmental improvements. The responsibility of the development projects lies on key account managers.

The number of development projects ... I had 38 development projects last year. In addition to our traditional workload. They were conducted with the customer. They concern our activities on the customers' premises. By other words, we develop working habits. We develop equipment. They are common projects with customers. There is the representative of the customer and our representative and then somebody to manage it through. The projects are measured by the time they take. Our aim is to complete the projects as quickly as possible. And create materialised benefit for the customer and for us. (Key account manager)

The deeper intercommunication there is in the customer relationship, the better information the supplier gets. Concerning customer information for service and performance development, the interviewees see that, at the strategic and tactical level, they get enough information from the customers. However, at the operational level information is hard to acquire. There is a challenge in getting information of how satisfied or unsatisfied customers are with individual service performances.

From product orientation to customer orientation

Even though the company is a service provider, its operating mode has been product and service line oriented. The production of services is organized in about ten (nine to eleven, depending on the way of looking) service lines. Traditionally, the company has been divided into business units. In 1997, Finland was divided into regional organizations where regional managers were responsible for all the services of the company in the region. That was when the first thoughts and signs of customer relationship management (CRM) emerged. They started to wonder whether the customers' traditional way of comparing prices and letting suppliers compete is successful in the new business environment. In 2001, another organizational change took place when a new service line was established. It took care of industrial cleaning and wastewater

services. Main customers came from wood industry, metal industry and refineries. Customers saw, however, that the supplier has to take a more comprehensive perspective than just one service line. They also suggested that a wider responsibility for the customer's total costs should be taken by the supplier. Thus, since the beginning of this decade, customer relationship - thinking increased and individual customer responsibility emerged. In 2007, the name of the service line was changed to industry solutions and customer focus was officially adopted in the strategy. 'Industry solutions' is division consisting of two business lines, industrial cleaning and environment management.

The case unit, Industrial Solutions, is far ahead of the other units of the company in turning into customer orientation. They have direct service production but are also responsible for the biggest industrial customers at the company level. The new organizational form had existed for about 14 months at the time of the interview (end of November 2008) as the first in the whole corporation. The interviewees see the reason for that in their industry line. The number of industrial customers is limited in Finland and customers are big. The supplier does not afford to lose any of them and the criticality of the customer's coverage is high. In some functions of the corporation there are up to 100 000 customers and the yearly turnover of the customers may be 1000. There, strategic customer relationship management is not that big an issue as in industrial solutions. However, customer information management is important.

It is important for the supplier to know how each customer positions the supplier. The supplier has classified customers in four categories. They are Basic customers, Supporting customers, Key customers and Partners (many service lines within the customership). There are some partners with whom interaction is deep and many-sided. With the key customers, whose number is a bit higher than that of the partners, information needed and interaction to get the information is defined. The supplier knows less about the needs of the supporting customers and basic customers, and interaction with them is more inactive. However, there is a need to get feedback from service shortages and deviations.

Changes in customer relationship management

Customer relationship management ideology has changed the way customers are contacted. Before the renewal different services were sold by sellers giving promises and other personnel delivering them, i.e. keeping promises. Customers met up to ten sellers from the supplier company who introduced issues in a slightly different light depending on their service line. Customers received multiple offers and had to negotiate and accept multiple price issues yearly. Little by little, managers started to think to act from the customer's perspective. This was triggered and strengthened by customer satisfaction surveys and discussions with the customers. Today, customers are contacted at three levels: strategic, tactical and operational.

The supplier's representatives meet the representatives of the customer in quarterly meetings. The representatives of the supplier's side are the operative personnel, the key account manager and the customer relationship manager. In the meetings, the relationship is guided to reach the target stage with the customer's personnel who represent the same levels as the supplier's representatives.

At the strategic level the business manager is responsible for overall customer relationship thinking in his unit. In addition, he is responsible for some individual customers. Strategic decision-making, as well as the development of his own customer relationships belongs

to him. He negotiates with the strategic persons of the customer company on how the parties together develop the relationships and its activities, about the goal some years ahead and how to get there. Furthermore, he negotiates within his own company about how issues are conducted in-house. The main task of the strategic actions of the unit managers is, in addition to develop service production with the customers, to enhance customer-oriented thinking and mindset in his own company so that the customer-oriented business model would be adopted in all units of the corporation.

At the tactical level there are five key account managers who take holistic responsibility for a customer's continuous activities in the supplier company. At the operational level, there is either an operative contact person or, as in three cases, a service master. The role of the service master in every premise is well defined and customers pay for the person. Service managers take care of different service activities earlier taken care by the customer's own personnel. For example, he is responsible for the maintenance of the railway to the premises. This requires an agreement between the supplier, the customer and VR Corporate (State Railways). This is a new concept stemming from the new customer relationship management concept.

The traditional way of sending a representative from every service line to deal individually with the customer is replaced by customer teams. Teams consist of people who are responsible for the relationship, and customer contact persons of the service lines offered to a certain customer. The team gets together quarterly, or at least once a year to define the overall goals for the next year.

Benefits and challenges of customer relationship management

Customer orientation stems from taking the customer's perspective in everything the supplier does. The supplier has to ask questions such as: What is the benefit for the customer? What is the customer is willing to pay for this?

As benefits of customer-oriented service-production, the interviewees see the possibility to know deeper the customer's processes and the difficulty to be replaced, as suggested in the literature. They add the possibility to create new profitable business. In trying to solve the customer's problem, they often find possibilities for new business, possibilities they were not aware of. Customers ask for new service solutions that can be taken to the supplier's strategy table to find out, where they could be developed to sustainable business. All in all, there is the necessity for continuous learning and development. The only way to develop services in a commercially sustainable way is to do it based on customer needs and requirements.

A challenge identified in the interviews was how to effectively manage the needs and requirements of different customers. Effectiveness requires unity, definitions and explicit processes. It depends on individual customer's size and sales volume whether the wants can be fulfilled. The supplier has to decide if the services can be individually tailored for the customer or does the customer get basic services with small variations. Another challenge is the measurement of individual performance in the company. For the time being, it is too product-oriented, whereas it should be more customer-oriented. By changing the measurement, customer-oriented mindset can be better implemented in the company.

The biggest challenge within the company is the lack of a digital CRM -system. Information is scattered in memos and other documents. One has to know whom to look for in order to find the information needed.

Competences needed in customer-oriented service production are better understanding of customers' operations and processes, and what is important for the customer. Why does the customer buy from us? To be able to get this information from the customer, one has to have social skills. There is a clear need to strengthen people's communication skills. Even though a customer relationship is big in volume, if it is just performing, it does not develop.

“When we get the customer to participate and jointly think of the issues, then there is the chance to develop the relationship.” (Customer director)

DISCUSSION AND CONCLUSIONS

Droege et al. (2009) state that ad hoc innovations are also easily bypassed in empirical studies, as they are hardly ever repeated and formalised into the standard service offering of an organisation. Our study shows, however, that a solution to a particular problem put forward by the client can be both radical in the terms of the newness both to the markets and to the supplier and multiplied to other customers.

“An example of that kind of service is the loading bridge service that is a part of our shop concept. It started with the customer's problem of not being able to keep the loading bridge clean and organised. Together with the customer we appointed a person to take care of the loading bridge and the final service model was developed in interaction between the customer and us. This happened two years ago and today we have four similar services around Finland. We had no idea of the service possibility even though we knew the existence of the loading bridge. But we did not recognise the problem until the customer told it to us.” (Sales manager)

Radical innovations exist on many levels within the company. Traditionally, research on radical innovation is concerned with products (goods or services) or production processes in addition to marketing processes. However, firms in the industrial setting have innovated on new business models and changed their thinking from being manufacturers to being service firms in the last decades. In the academic discussion, the shift from goods dominant logic to service dominant logic (e.g. Vargo and Lusch 2004, 2008) represents the shift from operational to strategic company level thinking.

As our case shows, (also) a traditional industrial service company has been very product and product line oriented. Changing a company's business logic from product and production oriented to customer oriented service logic is a radical innovation which takes time to be implemented and accepted as well within the supplier organization as in the markets. This is in line with earlier findings on radical innovations (e.g. Morone 1993). The process requires not only the supplier to position their customers but also to understand how the customers position the service provider to be able to build offerings that the customers value. Customer value proposition is, according to Johnson et al (2008) one of the elements of a business model.

The heterogeneity of industrial services is vast. The variety of industrial services needs multiple ways of service innovation and development. Thus, traditional ways of thinking and conducting innovation processes and involving actors are not suitable for the changing circumstances. Looking at service innovation as an organizational learning process and utilizing

the skills and capabilities of multiple internal and external actors seem to be a more suitable approach to the issue as suggested e.g., by Stevens and Dimitriasis (2005).

The importance of information and communication is crucial in sustainable service and relationship development. Much of the customer information and knowledge is tacit knowledge, which is hard to explicate. To effectively utilize the transfer of tacit knowledge, communication management is a vital part of customer knowledge creation. When a company is collecting customers' personal information, trading data, preferences, and so on, this information should be systematically organized into communicative customer knowledge. Here we need both digital and face-to-face organizational communication systems.

The main contribution of this paper is the distinction between operational and strategic radical innovations. The traditional approach is concerned with operational level radical innovations, while it seems that strategic level business model innovations are needed not only in new industries such as telecommunications and information and communication technology, but also in traditional industries. Consequently, academic research in that area is needed.

The transformation of the case company to a customer-oriented service firm seems to have many practical challenges. Difficult issues in outsourcing so called value services (services' value to the customer) in a networked relationship are pricing, risk and profit sharing. These issues need more scholarly research. Another interesting area worth future research is the different values of customers. They affect, for example, accepted dependence between partners, communication among networks actors and the diffusion of service innovations.

As to the results of this study, we have to bear in mind that the case comes from one context. To increase generality of findings, research in different contexts is needed.

Due to industrial services' growing emphasis on the economy not only in companies but on the national level in Western countries, more research and understanding is needed in the area. In spite of the fact that the importance of customer understanding and knowledge in product and service innovation processes has long been recognized, its potential has not been widely researched. This is one area for future research. Additionally, further research on the role and practices of customer information and its utilization in different industrial service companies and service innovation processes is needed.

REFERENCES

- Bitran, G. & Pedrosa, L. 1998. A structured product development perspective for service Operations. *European Management Journal*. Vol. 16, 169-89.
- Boyt, T. and Harvey, M. 1997. Classification of Industrial Services. *Industrial Marketing Management*, 26 (4), 291-300.
- Burns, Tom and Stalker, George M., 2001. *The Management of Innovation*, rev. ed. New York: Oxford University Press.
- Coombs, R., Miles, I., 2000. Innovation, measurement and services: the new problematic. In: Metcalfe, J.S., Miles, I. (Eds.), *Innovation Systems in the Service Economy. Measurement and Case Study Analysis*. Kluwer Academic Publishers, Boston, pp. 85–103.
- Cooper, R.G. 1999. The Invisible Success Factors in Product Innovation. *Journal of Product*

- Innovation Management*, Vol. 16, pp. 115-133.
- Cooper, R.G. 1996. The Dimensions of Industrial New Product Success and Failure. In Hart., S. (ed.) 1996. *New Product Development. A Reader*. The Dryden Press, London.
- Cooper, Robert G., 1992. Stage-Gate Systems for New Product Success. *Marketing Management*. Vol.1. No 4, 20–29.
- Cooper, Robert G. and Edgett, Scott J., 1996. Critical Success Factors for New Financial Services: A Stage-Gate Approach Streamlines the New Product Development Process. *Marketing Management*. Vol. 5. No.3, 26–37.
- Day, G. 1999. Creating a market-driven organization, *Sloan Management Review*, Vol. 41 No 1, pp. 11-22.
- de Brentani, U., 1989. Success and Failure in new Industrial Services. *Journal of Product Innovation Management*, Vol. 6, 239-258.
- de Vries, E., 2006. Innovation in services in networks of organizations and in the distribution of services. *Research Policy*, Vol. 35, pp.1037–1051
- Dewar, R.D. and Dutton, J.E., 1986. The adoption of radical and incremental innovations: An empirical analysis. *Management Science*, Vol. 32, 1422-1423.
- Djellal, F., & Gallouj, F., 2001. Patterns of innovation organization in service firms: Portal survey results and theoretical models. *Science and Public Policy*. Vol. 28. No.1, 57–67.
- Drejer, I., 2004. Identifying innovation in surveys of services: A Schumpeterian perspective. *Research Policy*. Vol. 33. No. 3, 551–562.
- Droege, H., Hildebrand, D. and Heras Forcada, M., 2009. Innovation in services: present findings, and future pathways. *Journal of Service Management*, Vol. 20 No. 2, pp. 131-155
- Ehrnberg, E., 1995. On the definition and measurement of technological discontinuities. *Technovation*, Vol. 15, 437-452.
- Eisenhardt, K. M. 1989. Building Theories from Case Study Research, *Academy of Management Review*. Vol. 14, 532-550.
- Ettlie, J.E., Bridges, W.P. and O’Keefe, R.D., 1984. Organization strategy and structural differences for radical versus incremental innovation. *Management Science*, Vol. 30, 682-895.
- Fitzsimmons, A.J., Noh, J. & Thies, E. 1998. Purchasing business services. *Journal of Business & Industrial Marketing*. Vol. 13. Nos 4/5, 370-80.
- Ford, D. 2009. IMP and service dominant logic: divergence, convergence and development. Proceedings of the 25th IMP-conference in Marseille, France.
- Froehle, Craig M., Roth, Aleda V., Chase, Richard B. and Voss, Christopher A., 2000. Antecedents of New Service Development Effectiveness: An Exploratory Examination of Strategic Operations Choices. *Journal of Service Research*. Vol. 3. No. 1, 3–17.
- Gadrey, J., Gallouj, F., Weinstein, O., 1995. New modes of innovation. Howservices benefit industry. *International Journal of Service Industry Management* 6 (3), 4–16.
- Gallouj, F. and Weinstein, O., 1997. Innovation in services. *Research Policy*, Vol. 26, pp. 537–556.
- Green, S., Gavin, M. and Aiman-Smith, L., 1995. Assessing a multidimensional measure of radical technological innovation. *IEEE Transactions on Engineer Management*, Vol. 42, 203-214.
- Griffin, A., 1997. PDMA research on new product development practices: updating trends and benchmarking best practices. *Journal of Product Innovation Management*. Vol. 14. No.

- 6, 429–458.
- Gummesson, E. 2001. Are current research approaches in marketing leading us astray? *Marketing Theory*. Vol.1. No. 1, 27-48.
- Hauknes, J., 1998. Services in innovation—innovation in services. SI4S Final Report, STEP Group, Oslo.
- Hughes, A., & Wood, E., 2000. Rethinking innovation comparisons between manufacturing and services: The experience of CBR SME surveys in the UK. In J. S.Metcalf,& I. Miles (Eds.), *Innovation systems in the service economy; Measurement and case study analysis* (pp. 105–124). Boston: Kluwer.
- Håkansson, H. (ed.) 1982. International Marketing and Purchasing of Industrial Goods: An Interaction Approach. New York: John Wiley & Sons, Inc.
- Håkansson, H. & Prenkert, F .2004. Exploring the exchange concept in marketing. In Håkansson, H., Harrison, D. & Waluszewski, A. (Eds.), *Rethinking marketing: developing a new understanding of markets*. Chichester, England: Wiley.
- Håkansson, H. & Snehota, I. 1995. *Developing relationships in business networks*. London: Routledge.
- Jackson, R.W. & Cooper, P.D. 1988. Unique aspect of marketing industrial services. *Industrial Marketing Management*. Vol. 24, 111-18.
- Johne, A., & Storey, C., 1998. New service development: A review of the literature and annotated bibliography. *European Journal of Marketing*. Vol. 32. No. 3/4, 184–251.
- Johnson, M., Christensen, C and Kagermann, H., 2008. Reinvent Your Business Model. *Harvard Business Review*, Vol. 86, December, pp. 50-61.
- Joshi, A.W. and Sharma, S. 2004. Customer Knowledge Development: Antecedents and Impact on New Product Performance. *Journal of Marketing*. Oct. 2004, pp. 47-59.
- Kahn, K.B. 2001. Market Orientation, Interdepartmental Integration, and Product Development Performance. *Journal of Product Innovation Management*, Vol. 18, pp. 314-323.
- Kandampully, J. 2002. Innovation as core competency of a service organization: the role of technology, knowledge and networks. *European Journal of Innovation Management*. Vol. 5. No. 1, 18-26.
- Kumar, R. & Markeset, T. 2007. Development of performance-based service strategies for the oil and gas industry: a case study. *Journal of Business & Industrial Marketing*, Vol. 22. No. 4.
- Kuusisto, J. & Meyer, M. 2003. Insights into services and innovation in the knowledge intensive economy. *Technology Review*. Vol. 134.
- Lagrosen , S. 2005. Customer Involvement in New Product Development: A Relationship Marketing Perspective. *European Journal of Innovation Management*, Vol. 8, pp. 424-435.
- Leifer, R. 2000. *Radical innovation: how mature companies can outsmart upstarts*, Harvard Business School Press, Boston.
- Leonard, D. 2002. Tacit Knowledge, Unarticulated Needs, and Emphatic Design in New Product Development. In Morey, M., Maybury, M. and Thuraisingham, B. (eds.) 2002. *Knowledge management. Classic and Contemporary Works*. The MIT Press.
- Lovelock, C., & Gummesson, E., 2004. Whither services marketing? In search of a new paradigm and fresh perspectives. *Journal of Service Research*, Vol. 7. No. 1, 20–41.
- Markeset, T. & Kumar, U. 2003. Design and development of product support and maintenance concepts for industrial systems. *Journal for Quality in Maintenance*

- Engineering*, Vol. 9. No. 4, 376-392.
- Mathieu, V. 1999 Product Services Portfolio: Strategic and Marketing Insights. Paper presented at the 15th IMP Conference, Sept, Dublin, Ireland
- McDermott, C.M. and O'Connor G.C., 2002. Managing radical innovation: an overview of emergent strategy issues. *The Journal of Product Innovation Management*, Vol. 19, 424-438.
- Menor, Larry J., Tatikonda, Mohan V. and Sampson, Scott E., 2002. New Service Development: Areas for Exploitation and Exploration. *Journal of Operations Management*. Vol. 20. No. 2, 135–157.
- Mittilä, T. (2008). The Role of Sales and Marketing Function in Industrial Service Innovation and Development. Proceedings of EBRF 2008 Conference.
- Morone, J., 1993. Winning in high-tech markets. Harvard Business School Press, Boston.
- Narver, J.C. and Slater, S.F. 1990. The effect of market orientation on business profitability. *Journal of Marketing*, Vol 54, No 4, pp. 20-35.
- Nijssen, E.J., Hillebrand, B., Vermeulen, P. A.M. and Kemp, R. G.M., 2006. Exploring product and service innovation similarities and differences. *International Journal of Research in Marketing*, Vol. 23, 241–251.
- Nordin, F. 2006. Outsourcing services in turbulent contexts: lessons from a multinational systems provider. *Leadership & Organization Development Journal* Vol. 27. No. 4, 296-315.
- O'Connor, G.C., 1998. Market learning and radical innovation: a cross-case comparison of eight radical innovation projects. *Journal of Product Innovation Management*, Vol.19 (march), 151-166.
- Paloheimo, K.S., Miettinen, I. & Brax, S. 2004. Customer Oriented Industrial Services, BIT Research Centre, Helsinki University of Technology, Helsinki.
- Preissl, B., 2000. Service innovation: What makes it different? In J. S. Metcalfe, & I. Miles (Eds.), *Innovation systems in the service economy; Measurement and case study analysis* (pp. 125–148). Boston: Kluwer.
- Rice, M.P., O'Connor, G.C., Peters, L.S. and Morone, J.G., 1998 Managing discontinuous innovation. *Research-Technology Management*, (May-June), 52-58.
- Salle, R., Cova, B. and Dontenwill, E. 2000. A Network Approach to the Broadening of The Offering: Beyond Added Services. Proceedings of the 16th IMP-conference in Bath, U.K.
- Salomo, S., Steinhoff, F. and Trommsdorff, V. 2003. Customer Orientation in Innovation Projects and New Product development Success - The Moderating Effect of Product Innovativeness. *International Journal of Technology Management*, Vol. 26, No. 5,6, p. 442.
- Sirilli, G., & Evangelista, R., 1998. Technological innovation in services and manufacturing: Results from Italian surveys. *Research Policy*, Vol. 27. No. 9, 881–899.
- Skyrme, D.J. 2002. Developing a Knowledge Strategy: From Management to Leadership. In Morey, M., Maybury, M. and Thuraingham, B. (eds.) 2002. Knowledge Management. Classic and Contemporary Works. The MIT Press.
- Stevens, E. & Dimitriadis, S. 2005. Managing the new service development process: towards a systemic model. *European Journal of Marketing*. Vol. 39 No. 1/2, 175-198.
- Storey, C. and Easingwood, C., 1998. The Augmented Service Offering: A Conceptualization and Study of Its Impact on New Service Success. *Journal of Product Innovation Management*. Vol. 15. No. 4, 335–351.

- Sundbo, J., 1998. *The Organization of Innovation in Services*. Frederiksberg, Denmark: Roskilde University Press.
- Sundbo, J., 1997. Management of innovation in services. *The Service Industries Journal* 17 (3), 432–455
- Sundbo, J., Gallouj, F., 1998. Innovation in services. SI4S Synthesis Papers S2. STEP, Oslo.
- Tax, S. S. and Stuart, I. F., 1997. Designing and Implementing New Services: The Challenges of Integrating Service Systems. *Journal of Retailing*. Vol. 73. No. 1, 105–134.
- Tidd, J. & Hull, F.M. 2005. *Service Innovation: Organizational Responses to Technological Opportunities & Market Imperatives*. Imperial College Press, London.
- Tushman, M. L. and O'Reilly, C. A. III., 1996. Ambidextrous Organizations: Managing Evolutionary and Revolutionary Change. *California Management Review*. Vol. 38. No. 4, 8–30.
- Tuschman, M. and Anderson, P., 1986. Technological discontinuities and organization environments. *Administrative Science Quarterly*, Vol. 31, 439-465.
- van der Aa, W., Elfring, T., 2002. Realizing innovation in services. *Scandinavian Journal of Management* 18, 155–171.
- van Riel, A.C.R, Lemmink, J. and Ouwersloot, H., 2004. High-Technology Service Innovation Success: A Decision-Making Perspective. *Journal of Product Innovation Management*. Vol. 21, 348-359.
- van Riel, A.C.R. & Lievens, A. 2004. New service development in high tech sectors: a decision-making perspective. *International Journal of Service Industry Management*. Vol. 15. No. 1, 72-101.
- Vargo, S. L., & Lusch, R. F., 2004. The four service marketing myths; Remnants of a goods-based, manufacturing model. *Journal of Service Research*. Vol. 6. No. 4, 324–335.
- Vargo, S. L. & Lusch, R. F. 2008. From goods to service(s): Divergences and convergences of logics. *Industrial Marketing Management* Vol. 37. (2008), 254-259.
- Windahl, C., Andersson, P., Berggren, C. & Nehler, C. 2004. Manufacturing firms and integrated solutions: characteristics and implications. *European Journal of Innovation Management*. Vol. 7. No. 3, 218-28.
- Zeithaml, V. A., Parasuraman, A., & Berry, L. L., 1985. Problems and strategies in services marketing. *Journal of Marketing*, Vol. 49. No. 2, 33–46.
- Zolkiewski, J. and Lewis, B., 2003. An Assessment of Customer Service in Business-to-Business Relationships, a Literature Review and Methodological Issues. Paper presented at The 19th IMP-conference. Lugano, Switzerland.