

Taxonomy for Business Service Innovation

Ragnhild Kvalshaugen*

Katja Maria Hydle**

Per-Olof Brehmer***

ABSTRACT

This paper presents a business service innovation taxonomy where we link business service types to sources/drivers of innovation. Business service innovation can occur in the service concept, in the client interface, in the service delivery system and the underlying service technology. The major source of innovation and renewal in business services is regarded to be knowledge/competencies/intangible assets. We identify four competencies in business services firms that potentially can drive innovation; customer competence, organizational competence, market and network competence and ICT competence. In order to align these competencies to business services, we develop a business service typology by arguing that degree of standardization and degree of client interaction in the service delivery process are the major categories for distinguishing business services. Based on a combination of these categories, four generic types of business services are identified: expert business services, client business service, special business services, and standard business services. Informed by the service innovation research and case examples from business service firms, we link the four business service types to innovation drivers (competencies types) and suggest a business service innovation taxonomy. Sources for renewal and creation of expert business services are primarily customer competence and market/network competence; for client business services the most relevant drivers of innovation are customer competence and organizational competence; for special business services drivers of innovation are market and network competence and ICT competence; and finally for standard business services ICT competence and organizational competence are major drivers of innovation

*BI Norwegian School of Management, Norway

Email: ragnhild.kvalshaugen@bi.no

**SINTEF Knowledge and Strategy, Norway

Email: katja.hydle@sintef.no

*** LiU School of Management (EKI), University of Linköping 581 83 Linköping, Sweden

Email: perbr@eki.liu.se

This paper is part of the ServINNo project, Service Innovation in the Nordic Countries: Key Factors for Policy Design. Funding from the Nordic Innovation Centre is gratefully acknowledged.

INTRODUCTION

This paper presents a business service innovation taxonomy where we link business service types to sources of innovation. Business services serve businesses rather than end consumers and is understood as knowledge intensive services and professional services (Løwendahl, 1997). Examples of such services are services provided by accounting firms, consulting firms, law firms, engineering design firms, certification firms and product design departments. The service innovation field has developed rapidly in the beginning of the 21st Century (e.g. Miles, 2004; OECD, 2004; KISA, 2006; Tether, Howells, Bessant, Davies, Voss, Zomerdijk, & Massini, 2007). Services, are however, enormously diverse and a major problem in the service innovation literature is that this diversity to a lesser degree has been taken into account. Our aim is to focus on innovation in business services and develop a business service taxonomy based on a synthesis of previous business service taxonomies (Lovelock, 1983; Schmenner, 1986; Larsson & Bowen, 1989; Maister, 1993; Bitner, Faranda, Hubbert, & Zeithaml, 1997; Løwendahl, 1997; Hansen, Nohria, & Tierney, 1999; Ramírez, 1999; Lovelock & Gummesson, 2004; Schmenner, 2004). This taxonomy will serve as the basis for the development of business service innovation taxonomy which is informed by previous knowledge on innovation in business services (e.g. Hargadon & Sutton, 1997; Den Hertog, 2000; Miles, 2004; Tether, 2005; Anand, Gardner, & Morris, 2007; Skjølvsvik, Løwendahl, Kvålshaugen, & Fosstenløykken, 2007) as well as in-depth knowledge of innovation processes in several business service firms (cases) in Denmark, Norway and Sweden.

A business service innovation taxonomy can serve various purposes such as providing insight into the relatively fragmented field of service innovation by suggesting how business service types are related to sources of innovation. Sources of innovation can occur from the supply-side as well as a result of the articulation of user demands (von Hippel, 1988). However, lately it has been recognized that innovation occurs in complex processes that links many different players together, not only developers and users, but a wide variety of intermediary organizations such as consultancies, standards bodies etc (Fagerberg, Mowery, & Nelson, 2005). These open and networked innovations are of particular importance for knowledge intensive business services (Tether et al., 2007). Additionally, the taxonomy can inform business service organizations which individual and organizational characteristics that are most influential for innovating in various types of business services, and thus provide practical advices for how to enhance, develop and change business services.

Service innovation is related to renewal and creation of services and the underlying value creation system connected to the service delivery process, which means that service innovation can occur in the service concept, in the client interface, in the service delivery system and the underlying service technology (Den Hertog, 2000). The major source of innovation and renewal in business services is regarded to be knowledge/competencies/intangible assets (Starbuck, 1992; Sarvary, 1999; Løwendahl, Revang, & Fosstenløykken, 2001; Greenwood, Li, Prakash, & Deephouse, 2005). The

knowledge of business service firms can reside in many sources such as individual expertise, experience and/or talent, firm-level methodologies or “tool-kits”, ICT-based information and knowledge sharing systems, project management techniques and support systems (e.g. Alvesson, 1995; Løwendahl, 1997; Hansen et al., 1999; Newell, Robertsen, Scarbrough, & Swan, 2002; Werr & Stjernberg, 2003). Our focus is on these knowledge creation sources in the business service organization. We assume that different types of business services will have different sources of innovation since the service concept differ and so do the nature of the client interface, the service delivery process as well as the service delivery technology. We therefore suggest that in connection to some types of services e.g. individual knowledge might be most important while in other service types development of firm level methodologies is the most important to enhance service innovation.

The paper starts by defining business services and discussing different types of business service organized in a business service taxonomy. Next, the focus is sources of innovation and knowledge creation in particular in business service organizations. Based on the business service taxonomy and the understanding of knowledge creation sources, a business service innovation taxonomy is presented. The business service innovation taxonomy is explained by using concrete examples from business service organizations in Denmark, Norway and Sweden. Finally, some implications for theory and practice connected to innovation in business services are addressed.

TYPES OF BUSINESS SERVICES

Services are often understood in contrast to products. Services are immaterial, and therefore hard to store and transport; they are often interactive, which entails communication and cooperation between the service producer and the customer or recipient; and services are often produced and consumed through the interaction (Normann, 1984; Normann, 2001). Salter and Tether (2006) note that many of the problems and challenges faced by their clients are unique, context-specific and highly localized. Moreover, services are often information and communication intensive (Blackler, 1995). Services do things for you; they do not make things (Johns, 1999). This implicates that services are activities not tangible objects. Hence, we focus on how services are delivered with particular emphasis on how the activities are performed, e.g. central characteristics of the activity set (Engeström, 1987). As there might be several types of services within the same organization, we expose activity sets of services having the same characteristics. Even though the activities differ, they tend to have several common features: the services serve businesses rather than end consumers; they are more traded than most other services, and; some are becoming increasingly global in their delivery and production. Therefore the unit of analysis is services and not the organization. By applying this approach we also capture services that are performed in manufacturing companies along with services performed in service organizations.

Service Categories

Several service taxonomies have been developed over the years (e.g. Schmenner, 1986; Larsson & Bowen, 1989; Maister, 1993; Bitner et al., 1997; Løwendahl, 1997; Hansen et al., 1999; Ramírez, 1999; Lovelock & Gummesson, 2004; Schmenner, 2004). We have tried to synthesize previous service taxonomies into one business service taxonomy. The categories that are believed to cause variations among services are degree of standardization/customization (Schmenner, 1986; Reich, 1991; Maister, 1993; Løwendahl, 1997; Hansen et al., 1999), degree of client interaction/client co-production (Larsson & Bowen, 1989; Bitner et al., 1997; Løwendahl, 1997; Ramírez, 1999; Lovelock & Gummesson, 2004), major resource input (labor intensive/capital intensive/knowledge intensive) (Thomas, 1978; Reich, 1991; Løwendahl, 1997; Hansen et al., 1999; Lovelock & Gummesson, 2004; Schmenner, 2004), individual or team service delivery (Løwendahl, 1997), client needs (Lovelock, 1983; Maister, 1993), and degree of perishability (possibilities of storing, reusing, reselling, and returning services) (Lovelock & Gummesson, 2004). However, the two variables that most of the researchers seem to agree on is degree of standardization/customization and degree of client interaction. We have chosen these two categories as the main variables in our business service taxonomy. Degree of standardization/customization is important because it questions to what extent the service can be codified and delivered independent of specific people and locations (Maister, 1993; Løwendahl, 1997; Hansen et al., 1999). This means that degree of standardization/customization influence the nature of the service concept (packaging), the service delivery system (production/consumption and assessment of quality) and service delivery technologies (people versus ICT systems) (Den Hertog, 2000). Degree of client interaction is an important category because this dimension highlights how involved the client is in the production of the service (Larsson & Bowen, 1989). This is believed to be a major characteristic of services as opposed to products (Normann, 1984).

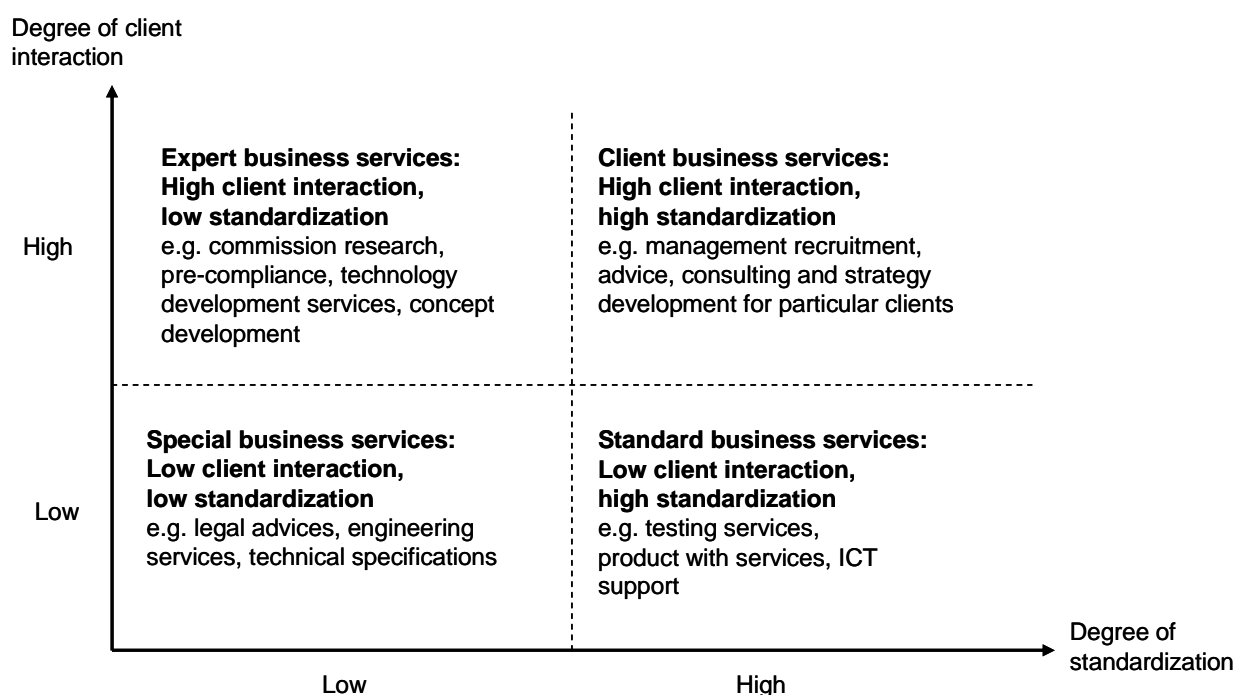
Degree of standardization can be understood as matching of activity patterns with demand patterns over time. Standardization is seen as the methods used to reduce or eliminate custom, one-time and seldom-used processes that introduce variability and potential added costs and quality problems. Standardization techniques include rationalizing service line offerings and performing cost studies to determine the true costs associated with designing, documenting, and performing the service. Codification of knowledge relevant for service deliveries in work procedures, databases, templates, documents and ICT systems is often the major mean to standardize services (e.g. Morris & Empson, 1998; Hansen et al., 1999). The opposite of standardization is customization. Customization means that the creation and delivery of the service meets a customer's specific needs. Hansen et al. (1999) labels this a personalization strategy for handling the knowledge relevant for the service delivery. This means that the knowledge used in creating and delivering the service is closely tied to the persons who have developed the service, and the consumptions process occurs mainly through direct person-to-person contacts (Hansen et al., 1999).

Degree of client interaction is understood as how involved the client/customer is in the service delivery. Normann (1984: 16) describes services as “the result of social acts which takes place in direct contact between the customer and representatives of the service company”. Inspired by Normann, Ramírez (1999) talks about value co-production which can be understood as how the provider and client coordinate their work (co-production) and in the process both create and capture value (transformation). Degree of client interaction has been applied as a variable that explain variation in service delivery by Bitner et al. (1997), Larsson and Bowen (1989), Lovelock & Gummesson (2004), Løwendahl (1997), and Ramírez (1999). Examples of variations caused by degree of client interaction are sequential value creation, sequential value creation with feedback loop (e.g. module based orders – Volvo, measure based orders, tailor made orders), simultaneous presence (e.g. the service is made on/with the customer - hotels; or the customer takes part in the value creation process – course), and intermediary presence (e.g. telecom services, travel agencies) (Ramírez, 1999). Another example is presented by Lovelock and Gummesson (2004) who talks about degree of inseparability of production and consumption. Yet another example is Larsson and Bowen (1989) who describe four types of service interdependence patterns matching input uncertainty - pooled service design, sequential standardized service design, sequential customized service design, and reciprocal service design.

Business Service Taxonomy

Based on the two categories – degree of standardization and degree of client integration, we have developed the following business service taxonomy:

Figure 1: Business service taxonomy



Appendix A consists of a description of characteristics connected to the four generic business service types. These descriptions are partly based on previous research on business services and practical examples from different companies we have conducted research in.

Expert business services are typically highly customized, relying on a personalized knowledge management strategy, and created and delivered in close contact with the client. The clients have complex and unique problems (e.g. Larsson & Bowen, 1989; Maister, 1993; Løwendahl, 1997), and these customers are often motivated to actively participate in the service delivery process in order to obtain intrinsic rewards or to monitor the quality of the service. The service is to understand the problem, to find relevant, different and new solutions, involving people if/when necessary without following a clear method. The employees (the professionals) of the service provider are usually very skillful and have both explicit and tacit knowledge relevant for the problem area. The knowledge resides in the professional and it is difficult to codify the knowledge because of its specialized and complex nature. To identify the problem and ways of solving it is an integrated part of the service delivery process. The output is very often not predefined or known. There is close interaction with the client throughout the entire service delivery, and learning between service supplier and clients may be a two way interaction. Examples of such services are commission research, pre-compliance services, technology development services and concept development.

Client business services involve both high degree of client interaction and high degree of standardization. In the creation and delivery of these kinds of services, the service provider emphasizes understanding and helping particular client groups, and is highly focused on target client groups rather than professional competences and the scope of services offered (Maister, 1993; Løwendahl, 1997). This means that the knowledge used to deliver the service may be quite standard, but the value added for the client is that the service provider knows the company very well and has strong personal relationships to client personnel. The interaction with the client is mostly at the beginning and at the end of the service process. The service performance is following defined processes, the outcome is known and predefined, but the specific problem with each client is different (Appendix A). Examples of client services are management recruitment, advice, consulting and strategy development for particular clients and test by manufacturer services.

Special business services are typically customized, but involve little client interaction in creation and delivery of the service. This means that the problems the service provider solves are likely to be unique and complex. However, the client does not have the time or the competence to participate in the creation and delivery of the service. The service delivery process is typically an answer to question process, and the service provider has high expertise in providing the answer to the question. The type of problems is known, but the specific issue is new and needs customization. Problems could be the application of laws or technical specifications related to a specific task. The service delivery process involves customization to the specific problem, without a lot of customer contact during the process. The form of

delivery is known, but not necessarily the content. Examples of such business services are legal advices, engineering services, technical specifications and research.

Standard business services are standardized and involve little client interaction. Such business services are adaptations of ready solutions to client specifications. Much of the content and sequence of the work activities are predetermined. The degree of explication of methods and processes is high. Coordination may nevertheless be substantial due to dependencies between sets of standardized activities, for example between various forms of projecting in construction. The source of competitive advantage lies in the ability to reap margins from mass customization of high quality services to low cost. Standard services correspond to Maister's (1993) 'procedure projects' and Løwendahl's (1997) 'adaptation of ready solutions'. These kinds of business services are the ones most alike traditional manufacturing with well known problems and programmatic approaches. The service delivery process may look more like a value chain than a value shop (Stabell & Fjeldstad, 1998). The types of problem or challenge, and methods to solve the problems are clear. The service delivery process is standardized and the delivery and outcome is known and defined on beforehand. Examples of standard business services are testing services, product with services and ICT support.

The aim with the identification of a business service taxonomy is to understand how innovation takes place in relation to the different service types, i.e. how organizations renew and create different types of business services. The next part of the paper addresses the relationship between sources of innovation and business service types. Previous research suggest that most of the knowledge creation in services happens in the practice, namely in relation to the development of the service concept, in the client interface, in the service delivery and connected to the underlying service delivery technologies (e.g. Sarvary, 1999; Den Hertog, 2000; Ofek & Sarvary, 2001; Fosstenløykken, Løwendahl, & Revang, 2003; Robertson, Scarbrough, & Swan, 2003; Fosstenløykken, 2007; Skjølsvik et al., 2007). In addition, previous research have shown that knowledge/competencies/intangible assets are major sources of learning, renewal and creation of new services in business service firms (e.g. Starbuck, 1992; Løwendahl et al., 2001; Scarbrough, Swan, Laurent, Bresnen, Edelman, & Newell, 2004; Hitt, Bierman, Uhlenbruck, & Shimizu, 2006). In the following section our focus is on identifying characteristics of these knowledge/competencies/intangible assets that enable and enhance innovation in business services.

INNOVATION IN BUSINESS SERVICES

Innovation in services can be understood in terms of (i) change or renewal of service concepts which the service organization offers, (ii) change and development of the client interface, (iii) change or renewal of the service delivery, and finally (iv) change or renewal of service delivery technologies (Den Hertog, 2000). The business service firms' abilities to manage knowledge are believed to be critical for their success (e.g. Hansen et al., 1999; Werr

& Stjernberg, 2003; Greenwood et al., 2005). The professional workforce ‘... constitutes the critical assets of the business service firms because it embodies, operates, and translates the knowledge inherent in the firm’s output, and, it is the basis of the firm’s relationships with clients ...’ (Greenwood et al., 2005: 663). This suggests that regardless of business service type, the professionals’ knowledge and their abilities to learn and renew this knowledge are relevant for innovation in business service firms. The professionals’ knowledge can be enhanced by learning-by-doing (Skjølsvik et al., 2007) or the business service firm can recruit professionals from the outside (Starbuck, 1992; Løwendahl, 1997). A service can be seen from an individual, project/client or organizational level each contributing with specific competence and knowledge in the service innovation. This multidimensional view on service innovations reflects that a service innovation is based on as well as supporting development of knowledge and competence in different forms. However, in the development of the business service innovation taxonomy, we focus on the sources of innovation which can enhance the currently employed professionals’ knowledge that can lead to development or changes in the service concepts as well as develop and change the client interface. In addition, these sources can also influence organizational routines and lead to change and development in the service delivery process and service delivery technologies.

Several researchers have addressed innovation in services and developed various typologies/taxonomies for understanding innovation in services (e.g. Den Hertog, 2000; De Jong, Bruins, Dolfsma, & Meijgaard, 2003; van Ark, Broersma, & Den Hertog, 2003; Miles, 2004; Hipp & Grupp, 2005; KISA, 2006; Salter & Tether, 2006; Anand et al., 2007; Tether et al., 2007). These studies show that some service innovations are driven by (i) the firm (supply driven), i.e. service innovations, work process innovations, organizational innovations, innovations in value configurations, while other service innovations are driven by (ii) external stakeholders such as customers and other experts, customer led innovations, ICT driven innovations and development of new business models in interaction with partners and suppliers. Internal and/or external driven innovations will be the main category to distinguish innovation sources.

Examples of Innovations in Business Services

In order to highlight whether service innovations are driven by the firm or by external stakeholders, we will explore how change and renewal of the different service types are taking place in our case examples.

Nemko

Requests from customers to come up with tailor-made advices have been one of the drivers for new service development in Nemko. Expert service innovation is related to new customer segments and different customer contacts in order to reach decision makers of a manufacturing firm at the planning stage of a product. Nemko provides global market access for products worldwide by applying official standards (e.g. safety). Pre-compliance services consist of advice about product compliance before the product development - when the product is at the drawing desk before the prototype is produced. Any electrical product entering a national or regional market has to comply with the official standards for safety and EMC (electro magnetic compatibility). However, new products might cross several official standards, or the product itself may be so innovative that it is not really covered within existing standards, hence the expert service of pre-compliance. The service involves close customer contact, and the service is tailor-made to the needs of the client and the product involved. Furthermore, the use of experienced colleagues and innovative team performance to render the expert service is helpful. Another way to obtain expert service innovation is to focus on training, developing and even recruiting the highly experienced engineers to become even more knowledgeable.

Rambøll Construction

Much of Rambøll Construction's innovation and creation of new knowledge takes place in the course of production processes, where new methods or new solutions are needed to complete project tasks. Consultancy services of Rambøll involve close cooperation with partners and clients throughout a building project and to a much lesser degree specific solutions and calculations. Rambøll Construction is a division of Rambøll, and engineering consultancy company. Rambøll Construction provides engineering consulting services over the many phases of building projects, which will typically involve a number of other actors, such as: the client/owner, architects, builders, other suppliers, and the authorities. Much of learning and knowledge creation is thus on an individual level through experience. This presents challenges in spreading new knowledge and competencies throughout the business.

ITT Flygt (Flygt)

Flygt is part of the ITT Group and the world-leading supplier of submersible drainage, sewage, and propeller pumps and sewage mixers. Development of expert services is usually driven by Flygt themselves since customer, consultants and other actors have little knowledge about the technical systems which the services support. Traditionally, service development has been a local matter; e.g. service templates have been developed locally and the prices for overhaul and other fixed-price services are also set locally. However, a central service organization has been set up that is working with e.g. development and implementation of new and/or standardized routines and formalization and recombinative innovations.

From these case examples, expert service innovation are related to learning with and from customers, knowing the market and customer segments and using internal and external networks. Learning, knowledge development, experience exchange and recruitment of experienced individuals are further important drivers for innovation. The change and renewal

are often immediate stemming from the problem at hand and from the activity and the interaction with the client and the team trying to solve the problem (Appendix A).

Client Business Service Innovation

Nemko

Client service innovation in Nemko is about how the Test by Manufacturer (TBM) services is changed. The service consists of contracts made with individual clients, where the client performs the test of the product themselves. Clients have contact with specific testers going through client testing. Changes consist of new ways of managing the Customer Relationship (CRM). Examples of such innovations are yearly customer seminars going through the most important changes in the standards to comply with, or global key account representatives from Nemko changing their processes. Other ways would be to improve the methods of verifying the testing results with standardizing the services.

New Insight

Client service innovation in New Insight is related to the development of a number of analysis tools and methods that can be applied to a variety of tasks within labor market analysis and human resource development. New Insight is a research based analysis and consulting firm specializing in labor market analysis and human resource development. Even though, the services are structured around individual needs, the tools and methods used are rather standardized.

BT Industries (BTI)

BTI is a worldwide supplier of warehouse trucks, counterbalanced trucks, manual trucks, and material-handling services. Ideas for new service offerings at BTI are generally created in the dialogue between the customer and the front office, driven with a focus on reaching a high level of standardization in service delivery. The development often has its base in specialized business services that are formalized and offered to other customers. A technical reliability service developed for cold storage operations which through the use of telecommunication monitors and give direct feedback to BTI on failures was developed for a specific customer. The benefits for BTI were significant because the feedback provided an opportunity to refine and develop the service further by the use of a standardized ICT solution installed in every new truck. Thus, creating a service platform on which a similar standardized business service was offered. Thus, most new services are negotiated and co-produced/co-created between BTI and customer.

The cases illustrate how client business service innovations occur in interaction with the client and through the introduction, development and changes of tools and methods used in the service delivery. Changes related to client interaction and management are often quickly corrected whenever clients provide feedback, while changes and renewal of organizational methods, tools and processes take a lot longer time to implement (Appendix A).

Special Business Service Innovation

Nemko

Innovation related to special services in Nemko consists of using experiences from existing projects in new projects. Nemko Direct is the terminology of these services in Nemko. In Nemko Direct the entire service delivery process of obtaining certificates in different countries having country specific standards such as in Eastern Europe, Russia, Asia, Middle East and Latin America, is conducted on the ICT platform. The special service is to know which standards to apply to specific products for different regional markets. The customer contact is limited to initial talks. The main challenge with this service is to assess which standards a brand new product should comply to and how the product meets all the different requirements within the different standards for the different markets. As more products need to comply with different standards within the same markets because products cross various disciplines, the service is hard to standardize. The engineers need to know the markets and have a network of contacts in order to provide and renew the services. One way of experience exchange is to provide better ICT support for the engineers in order for them to find relevant former projects. Another way is to alter the organizational structures so that the different engineers at various locations providing Nemko Direct services are reporting to the same organizational unit or performing as a global team.

Sukker

Innovation in services of brand completion at Sukker.com is based on recruitment of highly experienced technical personnel, new or altered processes, and tailor-made software packages to the service. Sukker is a small consulting and design firm which builds strong and unique brands through graphic, packaging and interior expressions. Sukker has graphic designers, product designers, animators, interior architects copy writers and category, space-management specialists working together. The service of brand completion consists of preparing the technical specifications of a design before production, which entails sound technical knowledge related to production techniques and software. Furthermore, the service is coordination intensive to a network of partners or subcontractors such as architects, furniture makers, packaging manufacturer, printing offices and the like. The service is highly tailor-made. Personal relationships to the subcontractors, the market in general and specific external firms that can be involved in the service process is important in order to be able to deliver the service. Involving the right subcontractors or innovative external firms are thus important for service innovation for brand completion.

Through these cases, special business service innovations occur through ICT, support systems, organizational processes and knowledge of the market and participating in the right networks. Change and renewal has a short time perspective related to market and network understanding, and a long time perspective for renewal related to formal processes, the methods, the ICT, tools and templates relevant for the service delivery process.

Standard Business Service Innovation

Nemko

The service delivery connected to testing and certifying in Nemko follows the same procedures worldwide. When the product to be tested reaches the lab, the test engineers start. Testing is based on estimated time and follows official standards for safety and electro magnetic compatibility that the products need to comply with. Engineers have in-depth understanding, knowledge and expertise related to the different standards. Testing services are rather standardized. The testing procedures differ depending on which official standard that is applicable, but the main principles remain the same. When the testing is finalized, another engineer is verifying the results of the testing, making sure that the testing proceeded correctly. The standard services in Nemko have changed through different innovative initiatives. The implementation of the tailor-made ICT system for testing, verifying and certifying, NEX, has provided the testers with the same ICT tool globally. New efficient processes introduced in all labs have altered the way of testing. New incentive systems have put focus on billable hours used on projects. Best practice transfers between offices have shown how different practices of how to do are more effective than others. One example of best practice transfer is the practice of using two monitors while testing – one monitor where the standard is visible, and the test documentation is completed on the other monitor. Furthermore, changes in the organizational structure directly affect the testers' ability to better concentrate on the testing instead of using time on sales and billing.

BDO

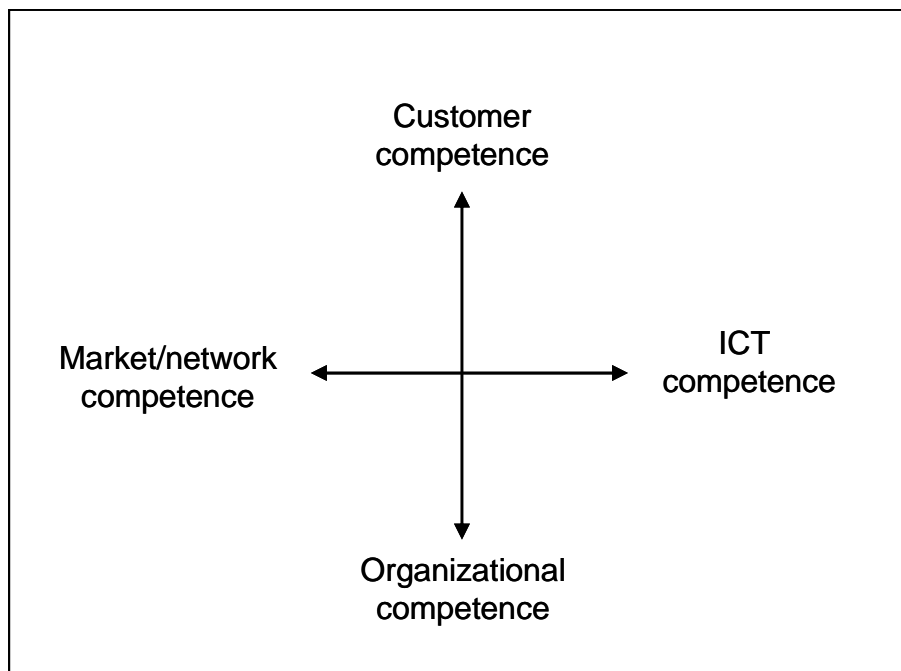
BDO's accounting system and methods are central for its business, and a key focus of its development activities is on advancing this system. BDO ScanRevision is a business service firm whose core business area is accounting services. The accounting services are performed by using standardized accounting methods, and the services must follow accounting rules and guidelines. Hence, the methods used to solve problems, or provide the services are fairly standardized. Development work consists of continual development of standards and guidelines, development of new products and processes and involvement in larger collaborative projects. As part of the continual improvement of accounting methods, a committee identifies topics or issues that are then investigated in detail by firm employees. A written report is produced on the issues, which then forms the basis for any changes in current accounting practices. As part of these activities, BDO follows closely discussion on accounting rules and guidelines, are participates actively in their development. This indicates that, due to the fact that competencies and accounting methods are fairly standardized, new knowledge and methods can be more easily transferred among employees. ICT is an important driver of innovation in terms of developing new systems for the reporting of accounting data. BDO cooperates with IT businesses to develop new reporting systems.

The cases illustrate that standard business service innovation is mainly about process renewal, organizational structures and incentive systems, firm-level methodologies or “tool-kits”, ICT-based information and knowledge sharing systems, and support systems. Renewal and change follow a long time perspective since the renewals occur in the formal processes, the methods, the ICT, tools and templates used (Appendix A).

Innovation Competencies

The cases point to a number of competencies that enable an organization to deploy resources and routines, usually in combination, to achieve a desired service innovation. Competencies, which are the knowledge that resides in the organization, are the portfolio of skills and resources of the organization that are used to deliver the desired outcome (Barney, 1991; Peteraf, 1993; Løwendahl, 1997; Teece, Pisano, & Shuen, 1997). Van de Ven (1986) notes that the interdependence and management of ideas, people, transactions, and context are critical to the management of successful innovation. Menor and Roth (2007) identify five

Figure 2: Conceptual model of innovation competencies in business services



general competencies that influence the organization's expertise in deploying resources and routines to innovate in services; process focus, market acuity, new service strategy, development culture, and information technology experience. The importance of complementarities among innovation elements is in line with recent innovation strategy study of Cassiman and Veuglers (2006) that point at complementarities as critical for consistent and replicable development of new services. Combining the insights from Tether et al. (2007), Kuusisto (2005), Menor and Roth (2007) and the case examples, we identify various types of competencies that are important for innovation in business services. Service innovations are typically development of new services offered to various clients and launching of existing services to new markets. Apart from refinement and development of services based on knowledge and learning which is a fundamental part of innovation in any business services, we have identified: (i) renewal based on client demands or insightful understanding of customer problems (customer competence), (ii) development of new delivery channels (base on market and network competence); (iii) organizational abilities to change (organizational

competence), as well as; (iv) employment of information and communication technology in order to alter the way of how the services are managed/delivered/fulfilled (ICT competence). The four different types of competence that enable innovation in business services are shown in figure 2.

Customer competence

The successful service provider aims to minimize the gap between the desired and delivered services. In long-term business-to-business service relationships there is often demand for application of improved or new technology, new and effective ways to organizing the agreed scope of work, and responding to new knowledge generated while working together. The identification of how technology and knowledge gaps links to customer preferences can provide opportunities for the business service firm to improve services, and thus drive innovation in the organization. Often the customers' service requirements are so complex that in providing a solution to the problem, the service provider needs to develop new knowledge, thus, providing innovation opportunities in business services. Customer competence is important in order to understand how the client interface can be altered and developed. Successful cooperation in business services builds on trust and the abilities to cooperate between the service provider and the client (Boström, 1995; Karantinou & Hogg, 2001; Bettencourt, Ostrom, Brown, & Roundtree, 2002; Fosstenlökken, 2007). Boström (1995) argues that the two most important characteristics of the cooperation are the relationship with the client and the knowledge or expertise of the client. Others have emphasized that in order to achieve complex forms of knowledge, face-to-face interaction is needed between partners and associates thus making the frequency of meeting points in the relationship important (Lane & Lubatkin, 1998; Hitt, Bierman, Shimizu, & Kochhar, 2001). Fosstenlökken et al. (2003) also found that access to the clients, face-to-face, is important for the professionals' competence development. Other researchers have identified the importance of openness in the relation for a successful client relationship (e.g. Hansen, 1999; Cross & Cummings, 2004; Hansen, Mors, & Løvås, 2005; McEvily & Marcus, 2005). As the previous studies show, client related innovations typically emerge from the interaction with the client in concrete projects or because the client calls for new types of services (Maister, 1993; Løwendahl, 1997; Karantinou & Hogg, 2001). These types of innovations can both be incremental and radical.

Market and network competence

Innovation through services typically emerge because the service provider personnel act as knowledge brokers in a larger market (Hargadon, 1998; Kipping & Engwall, 2003; Werr & Stjernberg, 2003) where they span multiple markets and technology domains and innovate by brokering knowledge from where it is known to where it is not. The service provider applies the gained knowledge in one industry to achieve a competitive advantage relative to other clients within other industries. To be able to function as a knowledge broker, the service provider has to have access to a wide range of knowledge, including knowledge that resides within client firms and other relevant organizations. In addition, it must be able to link this knowledge to implementable solutions. Thus, viewing service providers as knowledge

brokers suggests that the ability to learn in interaction with outsiders provides them with an inventory of potentially valuable ideas that can help define and solve the client problems. In turn, this inventory is likely to help the firm develop a competitive advantage.

Creating a position for the company in the market by creating value added services, developing new business models and value configurations is a base for earning a reputation of a reliable service provider (Greenwood et al., 2005). The market position are related to development of networks and alliances with external partners as well as changes in the value configuration (Stabell & Fjeldstad, 1998) to increase effectiveness and efficiency in the creation and delivery of the services. Menor and Roth (2006) identify that to be innovative the ability to clearly assess the competitive environment and create services that perform better than competitors in the market is needed. Ewing, Caruana and Loy (1999) assert that firms that have earned a well respected reputation over the years are getting much larger in size, while new companies entering the markets often struggle to get awareness on the market. Several studies have identified that the reputation of the service buyer is equal important for the ability to innovate, since it reduce the risks related to return on investments and encourage investments in the creation of relationships. Additional value for the customer and the service supplier is created through relationships which often are the base for upgrading, increasing and expanding the services, as well as creating new services (Grönroos, 2004).

Organizational competence

Service provider dominated innovations typically come from learning-by-doing in projects and in interaction with clients (Fosstenløyken et al., 2003; Skjølsvik et al., 2007). These innovations are often incremental in nature and can lead to changes in the service concept as well as changes in the client interface. Scarbrough et al. (2004) suggest that the practice-based nature of learning, project autonomy, and knowledge integration are three important dimensions connected to project-based learning. Skjølsvik et al. (2007) identify that novel project tasks, time pressure, diversity in the composition of the project team, large projects, competent clients, and high degree of interaction with the client enhance individual knowledge development in professional service firms. This individual knowledge development is used to produce new services, developing the client interface, developing the service delivery system, and finally developing and renewing service delivery technologies. Additionally, the organizational structure, management style, risk management and motivation of the employees are some of the elements that determine the willingness and desire of employees to innovate (Menor & Roth, 2007). Formalization can help streamlining the innovation process as well as overcome customers' barriers to participate with their knowledge. Too rigid formalization and structures, however, can hinder creativity, motivation and innovation. Generally, organizational competencies are used to change organizational structure, HRM policies (recruitment, incentive systems, formal and informal learning requirements), management system, work procedures and ownership structures which can lead to innovations in service delivery systems and service technologies.

ICT competence

A central theme in research on information systems has been the role of information technology for creating and sustaining competitive advantage (Price, 1998; Ross, Beath, & Goodhue, 1998). Quinn and Paquette (1990) identified that technology deployment can facilitate innovation, especially when systems are synergetic and supportive. The ICT competence concerns knowledge as well as utilization within firm and services to facilitate or improve inter- and intraorganizational coordination of activities, information processing and service delivery. Hereby it enables the creation of services that are more responsive to customer needs, which is in line with Heskett, Sasser and Hart (1990) arguing that most successful service organizations are information-centered largely through the adoption of ICT systems. The scope and intensity of ICT is an essential competence through which support the creation and delivery of service as well as service innovations. Such innovations can include introduction or update of tailor-made ICT systems, and new software packages which is to be based on ICT experience and competence, and thus be important for innovation in service technologies.

Business Service Innovation Taxonomy

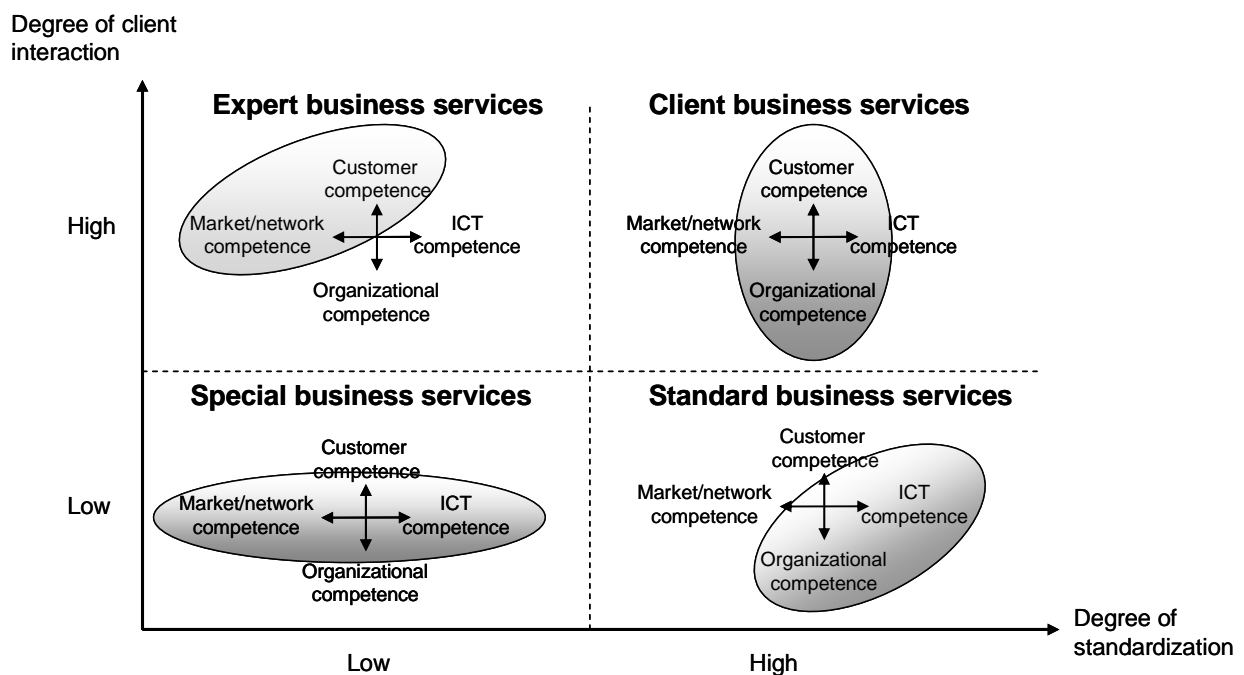
Service innovations are based on more than one of these competencies and over time is it likely that all, to some extent, are present. Competencies complement each other and are difficult to identify in total isolation from each other. Service innovations in each of the four business service types which are based on complementarities between the competencies will be more difficult for competitors to copy (Barney, 1991). Such an approach broadens the focus and emphasizes the importance of innovation in a specific service. Within the firm each service innovation is a source to strengthen the competencies that is of importance for future service innovations as well as for the firm's total competence 'profile'. In the following, we apply the business service taxonomy, previous literature on service innovation and the case examples to identify innovative competencies particularly relevant for innovation in each service type. This leads to the following business service innovation taxonomy.

Expert business service innovations

Since novelty in problem solving is an important characteristic of expert business services, development of new service concepts is the major innovation area in these services. Thus, learning-by-doing when solving complex and unique problems, and communities-of-practice involving representatives from the service provider, client and other external partners are the two most important arenas for knowledge renewal and creation in business service firms. "Service innovation is not just happening in dialogue with customers, but in the interpretation of the problem and challenge. This trigs innovation in the dialogue internally in the service firm, and within specialist communities" tells a CEO of a consulting firm. Sources for expert business service innovations are mainly based on market/network competence and customer competence. Ideas to new service concepts are created in interaction with external partners. In addition, the professionals' individual knowledge

development can also lead to development of new service concepts. The people working with innovations can be characterized as explorers, since they combine skills developed from previous innovations with a strong focus on understanding the specific customer needs. *“I have to be open in relation to problems, see the possibilities that are challenging the ordinary and known. This is the challenge. The approach cannot be described, but the solution can. I have to look for creative solutions, and I cannot be too detail-oriented”* explains an expert consultant.

Figure 3: **Business service innovation taxonomy**



Client business service innovation

Client business services are designed to serve particular customers. The service provider’s role in the client firm is like an in-house consultant who delivers a variety of services to the same client. The service provider typically knows the client’s business very well and is often called for when the client needs good advises. Innovations in these organizations are most often connected to the client interface, the service delivery process, and the service delivery technologies. This means that customer competence and organizational competence are the two most important sources for innovations in these types of services. *“Customer innovation happens when the customer knows their requirements and what they want. Often the customer knows the end delivery, but without knowing how to get there and what kind of resources that are needed. Then, we alter the processes and methods to meet their demands which in turn influence the services and the service deliveries. Such innovation happens with*

knowledgeable customers” explains a CEO from a business consulting firm. Thus, suggesting that the interaction with the client and reflections on organizational practices for delivering client business services are the two most important arenas for knowledge renewal and creation in these types of services.

Special business service innovation

Special business services are services where the service provider has specialist knowledge in a particular area, and the client needs this expertise in solving a problem but the client does not have the knowledge or the time to participate in the problem solving process. Innovations in special business services normally take place in the service concept, the service delivery process and the service delivery technologies. Market and network competence as well as ICT competence are important sources of innovation in special business services. Market and network competence enables the service provider to continuously be in the forefront of the expertise area by engaging in knowledge communities with external actors. In addition, the client effectiveness and efficiency in the service delivery is often of major importance for the client. Thus, developing advanced ICT systems that enhance the communication with the client and partners is an often seen innovation in these services. *“New ICT tools changes the speed of work, providing new ways of working with partners and subcontractors. ICT also introduces new methods for working”* explains a CEO of a business consulting firm. Learning-by-doing in solving complex and unique problems and reflecting on effective and efficient ways of delivering the service are the two important arenas for knowledge renewal and creation in business services. In addition, be part of professional communities-of-practices where people share experiences across organizations is also another important knowledge renewal and creation arena.

Standard business service innovation

In standard business services the service provider’s internal organization is the driving force in the knowledge renewal and creation process. *“For our processes to function optimally, we go through all the processes once every year with all the employees. In such a way, there are yearly changes and innovations in the working processes”* explains a CEO of a business service firm. This means that innovations in these types of services often are seen in the service delivery process and the service delivery technologies. Thus, leading to that ICT competence and organizational competence are the two most important sources of innovation in standard business services. *“New software provides different and new support to working processes, which in turn has effects on process innovation or service innovation. New software and new PCs give new opportunities for innovative services”* tells the same CEO. Very often large investments in advanced ICT systems are needed, coordination across organizational units is of major importance, and attention to aggregate clients needs are important, but not on the person-to-person relationship as in client business services. This means that the service provider organization is the most important arena for knowledge renewal and creation by identifying and sharing good practices across the organization. In

addition, contact with other similar service providers may help to disseminate good practices from other companies as well as to create effective and efficient service delivery systems.

Expert business services are both high on client interaction and high on customization. Expert services can spin off understandings of both (i) types of client needs to initiate or change special services, and (ii) methods developed over time to initiate or renew client services. Special business services being high on customization, but low on client interaction may (iii) develop processes, tools and templates which in turn changes the service from being customized to standardized and can be developed into a standard business service. Client business services being high on standardization and high on client interactions may (iv) develop tools automating the customer contact through new interfaces such as extranets, special software packages etc. which make the service change into a standard business service. Standard business service is however not the end station for service development; (v) the knowledge, learning and experience gained while performing standard services are the basis of professional expertise for providing all the other three services, apart from knowledge and experience about customer management. Without the professional expertise within a specific field, the specialized business services can not be performed. Hence, hosting standard services in a firm is an excellent way to train people to perform other types of services, even though standard service performance demand a lot of organizational and ICT support. Hosting expert services is a fruitful way for further standardize service offerings or further minimize client interactions.

CONCLUSION AND IMPLICATIONS

The paper started by presenting a business service taxonomy acknowledging variations in business services by identifying the diversifying characteristics. Degree of standardization and degree of client interaction were chosen in order to provide develop a taxonomy of business services identifying four different types of business services: expert, client, special and standard. Next, informed by research on service innovation, case examples and the business service taxonomy, we identify innovation drivers relevant for business services. Generally innovation can be internally driven by the firm (ICT and/or organizational changes), and externally driven by stakeholders such as customers, markets and networks. Knowledge is believed to be the driving force in business service innovation which led to the identification of four competencies that contribute to innovation in business services; customer competence, market and network competence, organizational competence and finally ICT competence. The combination of innovation driving competencies and business service types was merged into the business service innovation taxonomy where (i) expert business service innovation first and foremost are driven by customer competence and market and network competence, (ii) client business service innovation is driven by customer competence and organizational competence, (iii) special business service innovation are driven by market and network competence and ICT competence, while finally (iv) standard business service innovation is driven by organizational competence and ICT competence.

By focusing on innovation in types of business services, we acknowledge their distinctive characteristics and inherent activity sets. The strength of using services as entity and not the firm enable us to identify innovative drivers of different types of business services. Traditionally, the innovation-in-services literature (e.g. Miles, 2004; OECD, 2004; KISA, 2006; Tether et al., 2007) has not focused particularly on service types, but rather taken a macro perspective on innovation in services. We believe however, that organizations need more fine-grained analysis of innovation drivers connected to service types in order to promote service innovation. The business service innovation taxonomy provides a suggestion for a leap of departure to link actual service types with innovation drivers. From the cases it is clear that firms very often host several types of services. However, when it comes to innovation in services, they often neglect the opportunities of innovation because they do not understand the innovation drivers inherent in each service type. Several business service firms have a tendency to treat all their different services equal, which in turn strengthen one type and undermine the other types when it comes to innovative abilities. The business service innovation taxonomy shows that instead of underemphasizing certain services on behalf of the others, it is possible to strengthen the service types in parallel, by different means. An obvious way to strengthen certain services is to focus on the areas where the innovations occur. Another way is to examine how one type of business service can strengthen another and how to cross fertilize several services simultaneously. All the different services may lead to change and renewal within other service types, and being mutually reinforcing. The challenge is to be aware of the differences of the service types and the inherent innovation in order to support the competences for each type, while identifying reinforcing elements from one service type to another.

For practitioners, this entails that identifying the different types of services is necessary in order to be able to enhance and support the inherent innovation arenas and competencies in the organization. For academics, we wish that our paper shows how important it is to view the specific characteristics and differences between services in order to identify innovation competencies. For future research, we would welcome studies related to different types of management practice, enactment and support for the different types of services, as well as studies related to clients' use of and perceived customer satisfaction of two or more services provided by the same service provider.

REFERENCES

- Alvesson, M. (1995). *Management of knowledge-intensive companies*. Berlin: Walter de Gruyter.
- Anand, N., Gardner, H. K., & Morris, T. I. M. (2007). Knowledge-based innovation: Emergence and embedding of new practice areas in management consulting firms. *Academy of Management Journal*, 50(2), 406-428.
- Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120.
- Bettencourt, L. A., Ostrom, A. L., Brown, S. W., & Roundtree, R. I. (2002). Client co-production in knowledge-intensive business services. *California Management Review*, 44(4), 100-128.
- Bitner, M. J., Faranda, W. T., Hubbert, A. R., & Zeithaml, V. A. (1997). Customer contributions and roles in service delivery. *International Journal of Service Industry Management*, 8(3), 193-205.
- Blackler, F. (1995). Knowledge, knowledge work and organisations: An overview and interpretation. *Organization Studies*, 16(6), 1021-1046.
- Boström, G. (1995). Successful cooperation in professional services: What characteristics should the customer have? *Industrial Marketing Management*, 24(3), 151-151.
- Cassiman, B., & Veugelers, R. (2006). In search of complementarity in innovation strategy: Internal R&D and external knowledge acquisition. *Management Science*, 52(1), 68-82.
- Cross, R., & Cummings, J. N. (2004). Tie and network correlates of individual performance in knowledge-intensive work. *Academy of Management Journal*, 47(6), 928-937.
- De Jong, J. P., Bruins, J. A., Dolfma, W., & Meijgaard, J. (2003). Innovation in service firms explored: What, how and why? . Zoetermeer, Holland: EIM Business & Policy Research.
- Den Hertog, P. (2000). Knowledge-intensive business services as co-producers of innovation. *International Journal of Innovation Management*, 4(4), 491-528.
- Engeström, Y. (1987). Learning by expanding: An activity theoretical approach to developmental research. Helsinki: Orienta Konsultit.
- Ewing, M. T., Caruana, A., & Loy, E. R. (1999). Corporate reputation and perceived risk in professional engineering services. *Corporate Communications: An International Journal*, 4(3), 121-128.
- Fagerberg, J., Mowery, D. C., & Nelson, R. R. (Eds.). (2005). *The Oxford handbook of innovation*. Oxford: Oxford University Press.
- Fosstenløyken, S. M. (2007). *Enhancing intangible resources in professional service firms: A comparative study of how competence development takes place in four firms*. Unpublished Doctoral dissertation BI Norwegian School of Management, Oslo.
- Fosstenløyken, S. M., Løwendahl, B. R., & Revang, Ø. (2003). Knowledge development through client interaction: A comparative study. *Organization Studies*, 24(6), 859-879.
- Greenwood, R., Li, S. X., Prakash, R., & Deephouse, D. L. (2005). Reputation, diversification, and organizational explanations of performance in professional service firms *Organization Science*, 16(6), 661-673.
- Grönroos, C. (2004). The relationship marketing process: Communication, interaction, dialogue, value. *Journal of Business and Industrial Marketing*, 19(2), 99-113.
- Hansen, M. T. (1999). The search-transfer problem: The role of weak ties in sharing knowledge across organization subunits. *Administrative Science Quarterly*, 44(1), 82-111.
- Hansen, M. T., Mors, M. L., & Løvås, B. (2005). Knowledge sharing in organizations: Multiple networks, multiple phases. *Academy of Management Journal*, 48(5), 776-793.

- Hansen, M. T., Nohria, N., & Tierney, T. (1999). What's your strategy for managing knowledge? *Harvard Business Review*, 77(2), 106-116.
- Hargadon, A., & Sutton, R. I. (1997). Technology brokering and innovation in a product development firm. *Administrative Science Quarterly*, 42(4), 716-749.
- Hargadon, A. B. (1998). Firms as knowledge brokers: Lesson in pursuing continuous innovation. *California Management Review*, 40(3), 209-227.
- Heskett, J. L., Sasser, W. E., & Hart, C. W. L. (1990). *Service breakthroughs: Breakthroughs changing the rules of the game*. New York: The Free Press.
- Hipp, C., & Grupp, H. (2005). Innovation in the service sector: The demand for service-specific innovation measurement concepts and typologies. *Research Policy*, 34(4), 517-535.
- Hitt, M. A., Bierman, L., Shimizu, K., & Kochhar, R. (2001). Direct and moderating effects of human capital on strategy and performance in professional service firms: A resource-based perspective. *Academy of Management Journal*, 44(1), 13-28.
- Hitt, M. A., Bierman, L., Uhlenbruck, K., & Shimizu, K. (2006). The importance of resources in the internationalization of professional service firms: The good, the bad, and the ugly. *Academy of Management Journal*, 49(6), 1137-1157.
- Johns, N. (1999). What is this thing called service? *European Journal of Marketing*, 13(9/10), 958-973.
- Karantinou, K. M., & Hogg, M. K. (2001). Exploring relationship management in professional services: A study of management consultancy. *Journal of Marketing Management*, 17(3/4), 263-286.
- Kipping, M., & Engwall, L. (Eds.). (2003). *Management consulting: Emergence and dynamics of a knowledge industry*. Oxford: Oxford University Press.
- KISA, (2006). Innovation and knowledge-intensive service activities. Paris: OECD.
- Kuusisto, J. (2005). Multidimensional nature of innovation. Helsinki: SC-Research.
- Lane, P. J., & Lubatkin, M. (1998). Relative absorptive capacity and interorganizational learning. *Strategic Management Journal*, 19(5), 461-477.
- Larsson, R., & Bowen, D. E. (1989). Organization and customer: Managing design and coordination of services. *Academy of Management Review*, 14(2), 213-233.
- Lovelock, C., & Gummesson, E. (2004). Whither services marketing. In search of a new paradigm and fresh perspectives. *Journal of Service Research*, 7(1), 20-41.
- Lovelock, C. H. (1983). Classifying services to gain strategic marketing insights. *Journal of Marketing*, 47(3), 9-20.
- Løwendahl, B., Revang, Ø., & Fosstenløkken, S. M. (2001). Knowledge and value creation in professional service firms: A framework for analysis. *Human Relations*, 54(7), 911-931.
- Løwendahl, B. R. (1997). *Strategic management of professional service firms*. Copenhagen: Copenhagen Business School Press.
- Maister, D. H. (1993). *Managing the professional service firm*. New York: The Free Press.
- McEvily, B., & Marcus, A. (2005). The embedded ties and the acquisition of competitive capabilities. *Strategic Management Journal*, 26(11), 1033-1055.
- Menor, L. J., & Roth, A. V. (2007). New service development competence in retail banking: Construct development and measurement validation. *Journal of Operations Management*, 25(4), 825-846.
- Miles, I. (2004). Innovation in services. In J. Fagerberg, D. C. Mowery, & R. R. Nelson (Eds.), *The Oxford handbook of innovation*. Oxford, UK: Oxford University Press: 433-458.

- Morris, T., & Empson, L. (1998). Organisation and expertise: An exploration of knowledge bases and the management of accounting and consulting firms. *Accounting Organizations and Society*, 23(5-6), 609-624.
- Newell, S., Robertsen, M., Scarbrough, H., & Swan, J. (2002). *Managing knowledge work*. Hampshire: Palgrave.
- Normann, R. (1984). *Service management*. Chichester: Wiley.
- Normann, R. (2001). *Reframing business*. Chichester: Wiley.
- OECD. (2004). Promoting innovation in services, *DSTI/STP/TIP*.
- Ofek, E., & Sarvary, M. (2001). Leveraging the customer base: Creating competitive advantage through knowledge management. *Management Science*, 47(11), 1441-1456.
- Peteraf, M. A. (1993). The cornerstones of competitive advantage: A resource-based view. *Strategic Management Journal*, 14(3), 179-191.
- Price, R. M. (1998). Technology and strategic advantage. *IEEE Engineering Management Review*, 26(2), 26-36.
- Quinn, J. B., & Paquette, P. C. (1990). Technology in services: Creating organizational revolutions. *Sloan Management Review*, 31(2), 67-87.
- Ramírez, R. (1999). Value co-production: Intellectual origins and implications for practice and research. *Strategic Management Journal*, 20(1), 49-65.
- Reich, R. B. (1991). *The work of nations: Preparing ourselves for the 21st century capitalism*. New York: Knopf.
- Robertson, M., Scarbrough, H., & Swan, J. (2003). Knowledge creation in professional service firms: Institutional effects. *Organization Studies*, 24(6), 831-857.
- Ross, J. W., Beath, C. M., & Goodhue, D. L. (1998). Develop long-term competitiveness through it assets. *IEEE Engineering Management Review*, 26(2), 37-47.
- Salter, A., & Tether, B. S. (2006). Innovation in services. Through the looking glass of innovation studies. London: Tanaka Business School, Imperial College.
- Sarvary, M. (1999). Knowledge management and competition in the consulting industry. *California Management Review*, 41(2), 95-107.
- Scarbrough, H., Swan, J., Laurent, S., Bresnen, M., Edelman, L., & Newell, S. (2004). Project-based learning and the role of learning boundaries. *Organization Studies*, 25(9), 1579-1600.
- Schmenger, R. W. (1986). How can service businesses survive and prosper? *Sloan Management Review*, 27(3), 21-32.
- Schmenger, R. W. (2004). Service businesses and productivity. *Decision Sciences*, 35(3), 333-347.
- Skjølsvik, T., Løwendahl, B. R., Kvålshaugen, R., & Fosstenløyken, S. M. (2007). Choosing to learn and learning to choose: Strategies for client co-production and knowledge development. *California Management Review*, 49 (3), 110-128.
- Stabell, C. B., & Fjeldstad, Ø. D. (1998). Configuring value for competitive advantage: On chains, shops, and networks. *Strategic Management Journal*, 19(5), 413-437.
- Starbuck, W. (1992). Learning by knowledge intensive firms. *Journal of Management Studies*, 29(6), 713-740.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509-533.
- Tether, B. S. (2005). Do services innovate (differently)? Insights from the European innovometer survey. *Industry & Innovation*, 12(2), 153-184.
- Tether, B. S., Howells, J., Bessant, J., Davies, A., Voss, C., Zomerdijk, L., & Massini, S. (2007). Innovation in services, *DTI Occasional paper*: Director General, Economics Department of Trade and Industry.

- Thomas, D. R. E. (1978). Strategy is different in service businesses. *Harvard Business Review*, 56(4), 158-165.
- van Ark, B., Broersma, L., & Den Hertog, P. (2003). Services innovation, performance and policy: A review. University of Gröningen.
- van de Ven, A. H. (1986). Central problems in the management of innovation. *Management Science*, 32(5), 590-607.
- von Hippel, E. (1988). *The sources of innovation*. Oxford: Oxford University Press.
- Werr, A., & Stjernberg, T. (2003). Exploring management consulting firms as knowledge systems. *Organization Studies*, 26(6), 881-908.

APPENDIX A: CHARACTERISTICS OF BUSINESS SERVICES

CHARACTERISTICS	TYPE OF SERVICE			
	Special business services	Expert business services	Standard business services	Client business services
Services	Special business services	Expert business services	Standard business services	Client business services
Examples of services	Legal advice, engineering services, technical specifications.	Commission research, pre-compliance services, technology development, concept development.	Testing services, product with services, ICT support.	Management recruitment services, advice, consulting and strategy development for particular clients, test by manufacturer.
Types of problems to be solved	The type of problems is known, but the specific issue is new and needs customization. Problems could be the application of laws or technical specifications related to a specific task. The outcome is tailor made to each client.	Identifying the problem and ways to solve it is part of the service performance. The service is to understand the problem, to find relevant, different and new solutions, involving people if/when necessary without following a clear method. The output and delivery is not necessarily known and predefined.	The type of problem/challenge and methods to solve the problem is clear. Methods and outputs are known.	The type of problems is predefined, but the specific problem with each client is different. Methods, processes and outcome are known.
Characteristics of the service delivery process	The service delivery process involves customization to the specific problem, without a lot of customer contact during the process. The delivery is often performed by using ICT.	Close interaction with the customer throughout the entire service performance.	The service delivery process is standardized and the delivery is mainly conducted through ICT without interactions with the client.	Interaction and exchange with the customer is important at the beginning and at the end of the service process.
Types of resources	Junior/senior individual expertise, professional experience, firm-level methodologies or “tool-kits”, ICT-based information and knowledge sharing systems.	Senior individual expertise and professional experience.	Junior individual expertise, professional experience, firm-level methodologies or “tool-kits”, ICT-based information and knowledge sharing systems, and support systems.	Senior individual expertise, experience with client, firm-level methodologies or “tool-kits”, CRM, and project management techniques.
The role of ICT	Use of tailor-made ICT for the service delivery.	General use of ICT.	Use of tailor-made ICT for the service delivery.	General use of ICT
Value drivers	Reputation (external) Service quality	Reputation (external) Learning as a value driver is related to increased experience is likely to add value to the customers.	Reputation (external) Service quality	Reputation (internal) Learning in relation to client
Time perspective for change and renewal	Short time perspective for renewal related to market and network understanding. Long time perspective for renewal related to formal processes, the methods, the ICT, tools and templates used.	Immediate change and renewal stemming from the problem at hand and from the activity and service performance interaction with the client and the team performing it.	Long time perspective for renewal and change. The renewals occur in the formal processes, the methods, the ICT, tools and templates used.	Short time perspective for renewal related to customer treatment; long time perspective related to change in methods and processes.