

Networked business models: A case study from the wind power industry

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The literature on business models recognizes model development as a networked process involving various actors but providing little empirical evidence on how the process evolves, particularly concerning service-based models. Focusing on a project business setting in the emerging Finnish wind power industry with its various actors, we examine the dynamics of model development and analyze how business models evolve as a networked process between business actors. According to the study findings, the network actors are extensively involved in each other's model development and in particular in defining the contents of the service offering, which also influences each other's strategy.

1. Introduction

The growth of a knowledge-based service economy has led to a situation where innovative efforts in businesses are to a large extent related to the innovation of new service offerings (Howells 2000). At the same time, the deregulation and globalization of service markets as well as the internationalization of service providers have led to increasing competition in services industry (Stevens;Dimitriadis 2005). As a result, service providers and public institutions are putting effort into raising competitiveness through innovations that aim at providing outstanding value to customers (Bougrain;Haudeville 2002; European Commission 2011). Extant research suggests that this necessitates more than only renewal of the contents of services. The change should take place through rethinking of business models (Normann 2001, 81-82; Chesbrough 2006, xiii).

According to extant research, companies developing service-based business models need to design their value propositions around the customers' businesses and processes. This calls for development of a dynamic portfolio of offerings where the content differs according to the customer and changes along with customer needs (Kindström 2010). The studies have generally examined the business model from a single firm perspective where the business model provides a tool to analyze the firm's way of conducting business or business logic (Kindström 2010; Palo;Tähtinen 2013). Several studies have, however, suggested that innovation can succeed only if relevant resources are shared, combined, and developed between actors (Pittaway, et al. 2004; Cassiman;Veugelers 2006; Rusanen, et al. 2014). Resources are typically in the possession of various business units of firms (Swan, et al. 1999; Hansen 2002) and in a variety of firms and other organizations (Oerlemans, et al. 1998; van de Ven 2005). Therefore, actors increasingly lean on networks to access resources (Pittaway, et al. 2004; Lind, et al. 2012; Rusanen, et al. 2014), which increases their dependence on the network partners (Möller, et al. 2005). This holds

especially true with services that support customers' value creation processes and are typically provided by a network of actors (Lusch, et al. 2010).

Apart from some recent studies (e.g., Palo; Tähtinen 2013), the network has not been part of the business model literature. Although extant research posits that the network has a notable influence on the actors involved (Rowley 1997; Zaheer; Bell 2005), academics have paid scarce attention to the influence of the network on the business models of the actors. Similarly, research on service-based business models remains underdeveloped, while the focus has been on product-based technology business (Kindström 2010). Thus, there is a need to incorporate both the network element and the services perspective in the research of business models.

The purpose of this study is to explore the role of the network in business model development at service provider firms. This study adopts a view that emphasizes the role of the business model as a communicator of business logic and as a tool in its management, from design to implementation (Osterwalder 2004). We approach the topic with the following subquestions:

- *What are the drivers of business logic change in service firms?*
- *How do the network actors influence each other's business models?*

This is accomplished by drawing on a longitudinal case study that examines innovation of service offerings together with new business models in three focal business-to-business companies and their networks in the field of wind power services.

This study contributes to the business model literature by demonstrating how the network influences the development of business models in service firms. It broadens existing knowledge especially on the role of networks in business model innovation and in the development of solutions and service portfolios.

The paper is organized as follows. The literature review section provides an overview on the extant value and network-oriented business model literature, on network perspectives in business model innovation, and on business model development in services. The following section describes the empirical research methodology. Then, three cases illustrating innovation of service offerings and business logics in networks are presented. This is followed by the findings. We conclude the paper with implications for research and practice.

2. Literature Review

2.1. Value and network-oriented business models

Interest in studying business models followed the expansion of Internet-based business, which provided a platform for multiple variations in firms' business logic (Pateli; Giaglis 2004; Zott, et al. 2011). Business models have been studied in various fields with different perspectives (see Shafer, et al. 2005; Zott, et al. 2011; Palo; Tähtinen 2013). This study takes the value and customer-oriented approach to business models (Pateli; Giaglis 2004).

Business models are typically seen as a critical link between strategy and operations in the organizational entity (Wikström, et al. 2010). Shafer et al. (2005) define a business model as a representation of a firm's underlying core logic and strategic choices for creating and capturing value within a value network. To a great extent, business model research has adopted the perspective of an individual firm (Wikström, et al. 2010; Palo; Tähtinen 2013). Business models have been described as a tool for individual firms to analyze and develop a way of conducting business, ranging from business model design to its implementation through infrastructure and processes, and simply communicating it to external parties (Osterwalder 2004). The rooting of models in e-business enabled this approach: a company defined its value offering and on the secondary phase, identified the entities and their contribution that would be needed for the total value creating system (Tapscott, et al. 2000, 15).

The extant studies, extensively focusing on business models as a static construct, include detailed reviews of the models and their value-creating elements. Among those elements the most regularly counted are strategic objectives, value proposition, revenue logic, target market, resources and key activities, value chain or net, and partnerships (Osterwalder 2004; Pateli; Giaglis 2004; Morris, et al. 2005; Shafer, et al. 2005; Nenonen; Storbacka 2010; Zott, et al. 2011).

The locus of decision making is in the firm developing the offering, and the assumption is that any component needed is available and can mechanically be added to complement the core offering. The value net consisting of suppliers and partners is viewed as a part of the firm infrastructure or architecture, providing access to external resources that for an individual firm ultimately serve as a source of competence (Osterwalder 2004; Morris, et al. 2005).

On the other hand, individual firms have been seen indirectly influencing each other's business models through market practices. Here the business model serves as a central construct in explaining the formation and evolution of market configurations (Nenonen; Storbacka 2010). According to this view, the market actors negotiate through their business models which aspects of their resource and capability configurations are being used and how they interact for value co-creation. Through their resource and capability configurations, the actors consequently participate in shaping the markets. Even an individual actor can influence other actors' business models if it is able to initiate changes in market practices.

These two perspectives, the wider network of partners as a source of resources or firms influencing networks of the business actors that operate in certain industries, markets, or their intersections, form the dominating views on networks in business model research. Recognizing the significance of networks for business actors in designing and implementing their offerings, we suggest that these limited views can be revised to better correspond to the networked reality of many business sectors. When networks as structures replace part of a firm's internal activities and resources, this releases the firm to focus on its core but also increases its inter-dependence. Consequently, business models are no longer independently manageable by individual firms but require coordination and cooperation.

2.2. Business model innovation with a focus on networks

Business model innovation can be defined as the search for new logics of a firm and new ways to create and capture value within its value network (cf. Shafer, et al. 2005; Zott, et al. 2011; Casadesus-Masanell;Zhu 2013, 464). Business model innovation is increasingly seen as the key factor behind firm performance and takes place when the firm pursues transformation and renewal (Ireland, et al. 2001; Demil;Lecocq 2010; Zott, et al. 2011). Business models may be developed in response to internal or external drivers (Kindström;Kowalkowski 2014), such as technological change, change in customer demand, or change in the social or legal environment (Osterwalder 2004).

Development of a business model requires profound customer, competitor, and supplier information and intelligence that may consist to a significant extent of tacit knowledge (Teece 2010). Some business model studies have responded to this challenge by focusing on business network research, which emphasizes the importance of the resources that the actors combine in order to provide new constellations and create value for the end customer and each network actor (Håkansson;Snehota 1995; Möller, et al. 2005).

By eradicating the boundaries between the different groups of external parties, the channels and partners are treated as a wider network element by Nenonen and Storbacka (2010). Taking a value creation perspective on business models, they suggest that there is shift from a business model being a static tool for the firm's internal use toward networks consisting of external actors that participate in creating value. This implies that the model as a construct should be externally orientated, mapping the key relationships and their functions that a firm has in its value network. Also according to Magretta (2002), business models inherently emphasize cooperation, partnerships, and joint value creation.

A pioneering study is an empirical examination of the networked business model development by Palo and Tähtinen (2013) that takes place with a strategic net of actors with the aim of developing, producing, and marketing a technology-based service. The networked business model describes how the strategic net creates value instead of focusing on a single firm. Palo and Tähtinen propose that the business model development is dynamic rather than static, referring to the constant need to adapt the business model according to the environment and changes in the net. The business model is transformed through various encounters between the business network actors involved in the model development.

Focusing on technologies and ideas that are accessed and exploited from outside or given to others to be used, Chesbrough (2006; 2007) introduces the concept of the open business model. The idea is to be able to make effective use of open innovation by extending it to also include business model innovation (Chesbrough 2006). Business model innovation calls for establishing co-development relationships between actors that aim to create and deliver a new product, technology, or service together (Chesbrough;Schwartz 2007). The business models of partners are integrated during co-development, which increases the chances to sustain or even expand the co-development partnership in the future (Chesbrough 2007).

2.3. Business model innovation with a focus on services

Firms inventing themselves and their offerings anew promote addressing the customer needs and capturing the value in competitive markets. The literature on business models has recently recognized the shift from firms that provide services to complement their physical product offerings toward service offerings in the center of the value offering as such an action (Kindström 2010). The framework of Bessant and Davies (2007) includes different types of service innovations that can also be used to analyze the business model when there are changes with regards to (1) the service offering, (2) the service creation and delivery process, (3) the context of the service, or 4) whole paradigm changes.

Palo and Tähtinen (2013) suggest that the service business model evolves through service development, pilot, and market phases intertwined with simultaneous business net development and opportunity recognition. The business model evolves constantly during these phases instead of merely being the end result of the development.

A service business model can be divided into ten fundamental elements, similar to other commonly mentioned model elements: (1) strategic objectives, (2) structure, (3) offering, (4) revenue mechanism, (5) development process, (6) sales process, (7) delivery process, (8) customer relationships, (9) value network, and (10) culture. Strategic decisions set the foundation for service innovation. The organizational structure may either inhibit or promote innovation, and therefore the structure should be organized so that service innovation can take place. Offering refers to services that the firm intends to offer and to the development of a coherent portfolio of services. The revenue model includes pricing strategies and methods. The development process aims at concept development. The sales process includes, e.g., methods to sell services, incentive systems, customer involvement, and ways to communicate with customers. The delivery process consists of service delivery organization and interactions with customers. Customer relationships refer to depth, intensity and duration of customer interaction (Kindström;Kowalkowski 2014). The value network is a network of actors that co-produce and exchange service offerings and co-create value. Typically a value network consists of supply chains, but also customers can be important co-creators of value (Kindström 2010; Lusch, et al. 2010). Culture refers to establishing a service culture inside the organization (Kindström;Kowalkowski 2014).

An integrated perspective on services integrates innovations in various elements of the business model. Firms pursuing service innovation thus need to address the above elements of the business model (Kindström;Kowalkowski 2014).

The need for integrating a network of actors to stimulate service innovation development and adaptation has been long recognized. Services developed to support customers' actions require relationship orientation and from the service provider's perspective, knowing customer processes (Frambach, et al. 1998). The growing tendency of providing solutions and complex systems has further consolidated this need of more tightly integrating the networks of actors (Naude, et al. 2009). Research using a network perspective on development of solutions and services suggests that a process perspective is relevant because it emphasizes customer participation (Tuli, et al. 2007; Naude, et al. 2009).

Going beyond customization and integration, the process steps that can be added are requirements definition, deployment, and post-deployment (Tuli, et al. 2007). Defining requirements in a nascent industry can be particularly challenging; finding an optimal combination of technologies and services and offering them to customers who may not be fully aware of all the options requires multilateral interactions to collect and amalgamate the dispersed views of the actors (Lambe, et al. 2000). In the deployment stage, when delivery and installation take place, the customer requirements are often clarified (Tuli, et al. 2007; Naude, et al. 2009). When services form the business model core offering, deployment and post-deployment can merge; maintenance service is an add-on for products but can represent an offering in its own right.

The earlier view on developing new business emphasizes the formal evaluation of business opportunities through feasibility analysis, due diligence, and by using the stage-gate model. Stage-gate consists of several evaluation phases that the business idea must pass in order to proceed toward the markets (Ardichvili, et al. 2003). The more recent view is that opportunity recognition and business idea refinement for services can be approached by using a networked business model as a dynamic device (Palo; Tähtinen 2013).

Recent research on service innovation points out that the customers participate in developing services (Kindström 2010). The relational orientation and networking practices when designing service offerings are needed because service providers have to know the total operations and profitability of their customers. Service offerings typically penetrate deeper into the customers' operations than product offerings, requiring more extensive coordination. Similarly, the organizational interfaces often entail both operational- and strategic-level interactions (Kindström 2010).

Figure 1 provides a tentative framework of business model innovation in services. It illustrates the connections between the chosen business model elements, strategy, network, and service innovation when developing a business model. The figure has been drawn on the basis of the extant literature.

Business model elements and connections between strategy, network and service innovation

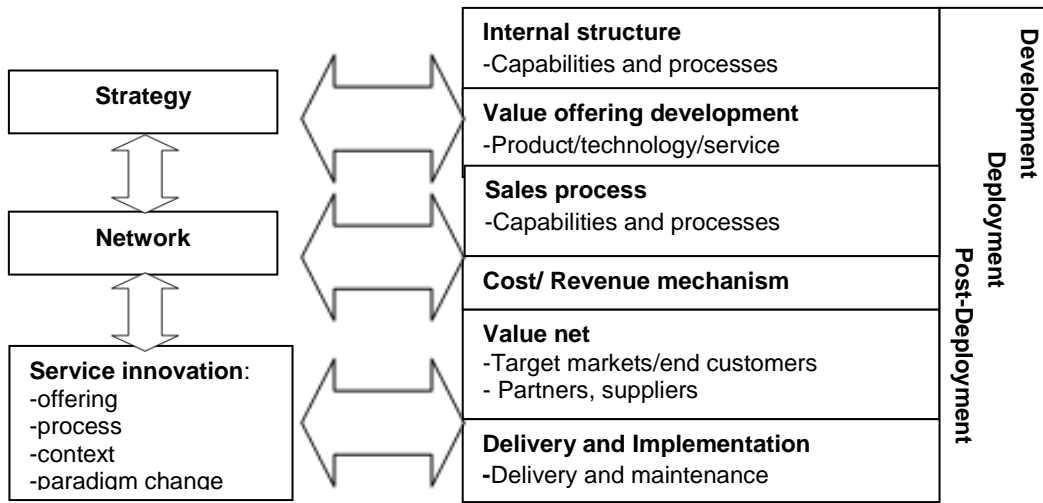


Fig. 1: Framework for business model innovation in services

In the business model, firm strategy is converted into applicable model components. While the network component is part of the business model, network actors at the same time shape the model and its value offering in particular. The strategy of each individual firm is influenced by the network. The phases of development, deployment and post-deployment that are typical to project business are included in the framework as it is suggested that the model can be described from the process perspective and the actor involvement in the model development can be examined in each phase. Certain model components can be associated with the phases, but the linkages are guiding and not definitive because, e.g., the flexibility of the service offering allows modifications on the later phases and the network component can contribute to other parts of the model throughout the project life cycle.

3. Methodology

3.1. Research strategy

Applying qualitative methodology, the study is constructed as a multi-case study (Stake 2008, 123) with three innovation projects in networks as empirical cases: two service portfolio development projects and one solutions development project. The study follows explorative and descriptive strategy (Saunders, et al. 2012, 171). Case studies are typically conducted when exploring networks and relationships as they provide the means with which to develop a multidimensional perspective on the phenomenon in a specific context (Järvensivu;Törnroos 2010). Qualitative case study research is employed in this study as it enables exploration of business model development by building understanding on the innovation processes with various informants involved (Silverman 2006, 349; Pratt 2009).

This study applies process research when studying the cases; that is, three innovation projects in networks. Process research studies how events emerge and evolve over time in a context (Halinen, et al. 2012). Process research enables exploration on the innovation process in networks in this study.

The case companies are Finnish firms operating in the wind power industry. In-depth interviews among firm key decision makers serve as a primary source for the data collection. The link between theory, empirical phenomena, and method is formed by applying an abductive approach (Kovacs;Spens 2005; Dubois;Gibbert 2010). The abductive research process comprises constant iteration among the research steps (Eisenhardt 1989).

3.2. Empirical cases

When choosing the cases for this study, it was important that the phenomenon of interest – simultaneous business model development and service development in networks – clearly existed (Stake 1995, 56; Dubois;Araujo 2007). Therefore, cases were selected by employing purposive sampling. The aim was to find rich cases that would help fulfill the research objectives (Silverman 2006, 306; Dubois;Araujo 2007).

The service was to be designed in a network comprising at least three organizational actors (see Möller, et al. 2005). The cases needed to be such that a pilot version of the service was available to enable a study on the actual innovation and business model development process. It was necessary for the innovation process to still be under way in the chosen cases so that the informants could better remember the innovation process and so the cases could be followed in real time.

A multiple case study creates a more robust theory as it is more deeply grounded in varied empirical evidence. Multiple cases enable broader exploration of research questions and theoretical elaboration. In multiple-case studies, the choice of cases is based more on the contribution to theory development within the set of cases than on the uniqueness of a case (Eisenhardt;Graebner 2007). Table 1 provides an overview of the three focal case companies Alpha, Beta, and Delta, each of which ran one innovation and business model development project.

Firm	Alpha	Beta	Delta
Industry	Design, construction, installation, management, and maintenance services and information system solutions within the energy, telecoms, and manufacturing sectors	Manufacturing of fastening technology for concrete connections and composite beams for slim floor structures	Engineering, design, and consultancy services within the energy industry, traffic infrastructure, manufacturing, civil engineering, and the environment
Number of employees in 2013	2,800	1,100	1,400 (subsidiary)
Turnover in 2013	325 M€	126 M€	105 M€ (subsidiary)
Operating range	North Europe	Global	Finland
Business development projects addressed in this study	Service portfolio for wind power construction and production	Foundation solutions for wind turbine towers	Service portfolio for wind power construction and production

Table 1: Overview of the focal case companies

The two wind power service portfolio cases and solutions for wind turbine foundations represent service innovation in an emergent business field. Only at the end of 2008 did the government of Finland approve the long-term climate and energy strategy, which was based on objectives proposed by the European Commission regarding the reduction of emissions and promoting renewable energy. The directive demanded that Finland had to increase the share of renewable energy to 38 percent of its total energy consumption by 2020. The Finnish government set the objective that six terawatt hours (TWh) of energy would be produced by wind power in 2020. This would mean more than 800 wind power plants with the capacity of 2,500 megawatts (MW) in total (Tarasti 2012).

Alpha's service portfolio for wind power construction and production is developed both inside the firm in various business units and with customers, suppliers, consultants, and university students. The service portfolio can be characterized as an architectural innovation that bundles existing services and also an innovation in processes and organization of existing services (Gadrey, et al. 1995). Inside the portfolio, a radical innovation (de Brentani 2001; Gallouj 2002, 72) also occurs (i.e., the wind power portal).

Foundation solutions for wind turbine towers formed a new field of business for the fastening technology firm Beta, which, together with two consultants, innovated a new kind of on-shore foundation in which Delta is the main consultant with a new relationship to the fastening technology firm. The first foundation prototype was tested and further developed with the new customer Alpha. At the same time, services concerning the foundation were developed so that the foundation could be provided as a total solution. The foundation solution represents a radical technology innovation that opens new business opportunities (de Brentani 2001; Gallouj 2002, 72; Möller, et al. 2005).

Delta's service portfolio for the wind power industry is predominantly developed in various business units within the company but also with foreign sister companies. The aim is to build a total package comprising a variety of existing services for the wind power industry. Delta's service portfolio development represents process excellence and flexibility that calls for a process improvement capability. However, it simultaneously provides a new solution that supports customers' businesses and also necessitates capabilities for incremental innovation (Möller, et al. 2005). The service portfolio can be characterized as an architectural innovation that bundles existing services and also as an innovation in processes and organization of existing services (Gadrey, et al. 1995).

3.3. Data collection

Case study data were collected longitudinally in three service innovation projects between January 2010 and December 2012. As the research included multiple cases and studied a strategic phenomenon (i.e., business model development and innovation), interviews comprised the primary data source (Eisenhardt; Graebner 2007). This study collected data at intervals of approximately a year between 2010 and 2012. For a period, the duration of data gathering was approximately one month in each case. Altogether, 18 interviews were conducted, some of which discussed two different innovation projects. Ten interviews were related to the service portfolio development at Alpha, six interviews discussed foundation solution development at Beta, and eight interviews dealt with service portfolio development at Delta (see Appendix 1).

This study applied qualitative interviewing (Warren 2002, 83). The interviews were conducted in the form of guided conversations (Yin 2009, 106). Similar to a conversation, every interview was newly constructed. Each conversation was unique; the researcher matched the questions to the respondents' experience and expertise (Rubin; Rubin 2005, 4, 12). Qualitative interviewing can be employed to describe various events and processes. The interviewer seeks depth, detail, and richness in interviews, which is also termed "thick description" (Rubin; Rubin 2005, 5, 13). Therefore, interviews were based on three kinds of question: main questions that guided the conversation, probes to clarify answers or request further examples, and follow-up questions that pursued the implications of answers to the main questions (Warren 2002, 86-87).

Most of the interviews were conducted face-to-face at the respective company's premises, and a couple of interviews were conducted by phone. The interviews lasted between 50 and 150 minutes. Interviews were audio recorded and transcribed verbatim.

Secondary sources included workshops with the case companies, observations in the wind power workshop of the consulting firm Delta, information on websites and in the business press, as well as information on industry in general. Each data source helped make the phenomenon visible in a different way and provided a more in-depth understanding of the focal phenomenon (Denzin; Lincoln 2008, 5, 7).

3.4. Data analysis

Data analysis began with a coding and categorization procedure. The research questions guided coding and creation of categories from the beginning. First, various actors that influenced business model development in each innovation case were sought. Extant literature on business model development in services and networks provided the lenses through which the data were analyzed. Data categorization was first made on the basis of Kindström's and Kowalkowski's (2014) division where a service business model is divided into ten fundamental elements: strategic objectives, structure, offering, revenue mechanism, development process, sales process, delivery process, customer relationships, value network, and culture. Each of the three innovation project cases were separately analyzed, and the possible influence of the found network actors were examined in connection with all ten service model elements. The data were coded employing NVivo10 qualitative data analysis software. On the basis of the analysis, the elements were subtracted to cover the ones where network actors played a visible role. According to the principles of qualitative research analysis, data were then compared with data, with existing theory, and with results from previous research (Marshall;Rossman 2006, 156).

4. Case Study

4.1. Alpha's service portfolio for the wind power industry

4.1.1. Alpha's business model innovation – new business in a new industry

Alpha is a Finnish service integrator specialized in project management in the energy, telecommunications, and manufacturing sectors. The company has capabilities in design, construction, installation, management, and maintenance services as well as IT services in the energy sector. For Alpha, the expansion to wind power was a worthy business option, and Alpha's decision to take it up was partly driven by institutional decision making as the Finnish government had announced its commitment to promote renewable energy production by 2020.

Alpha's experience from setting up and maintaining power plants for the traditional energy companies formed a foundation for extending its service business toward new energy solutions. The environmental goals of Alpha's new and potential customers and their interest to produce energy in a cleaner way in particular encouraged Alpha's move to the wind power business. Service and business model development for wind power was started with a core team consisting of managers from different business units of Alpha and a newly appointed business area director for wind power. The corporate management formed a steering group that commented on the team's proposals. Later, project teams were appointed to manage the capabilities and combine them into new services. The corporate management approved the project plan. In two years Alpha had identified ten different entities that formed its service offering. Internally, the life cycle of the wind power production was a starting point for the project team in garnering the capabilities.

4.1.2. Network actors influencing model development

Alpha's aim to develop an encompassing service portfolio was supported by a cooperative approach, also stated as a leading concept in the firm's strategy. For the firm that was transforming itself into a service integrator, it was critical to involve the customers and the key partners and suppliers in the development. In addition to the service offering, Alpha also asked for their feedback on the internal process and system development. These actors included: 1) investors interested in funding the new opportunities but lacking experience from clean energy business and therefore seeking a comprehensive service covering all the phases of the life cycle; 2) energy companies expanding their business to wind power; and 3) turbine manufacturers. As a result of the internal work and response of the network, the different service modules were further elaborated and modified in terms of their content and processes.

4.1.3. Defining the offering with the customers

A careful market study helped Alpha to define its value offering. The existing and potential customers were asked systematically about their plans for new projects, challenges in wind power, and the services they might need. The view of the customer was emphasized in the new service development. Alpha's business area director for wind power noted: "Our firm does not work in such a way that first we would develop here something and then we would sell it, but the development is always linked in some way to solving the problems of the customer." Alpha's task was to convince the customer to buy the service, as the sales director of Alpha observed: "Our operations are based on outsourcing, which means that we suggest to the customer not to do this by itself but let us do it."

As a service integrator, Alpha took responsibility of the interfaces with other suppliers, thus widening the set of services toward customers. For the customer, the added value was clear as they had only one partner needed for discussions. Alpha's R&D director explained: "Our starting point is that we want to be a service integrator so that the customer can hand over to us a great amount of tasks that we do not deal with internally but we will oversee their integration to the customer operations."

Alpha's advantages included tailoring specific customer solutions and high-level services that overcome in-house production and being able to carry risks and to operate in a cost-effective way. Sharing the risk in terms of costs that might exceed the planned costs was concretely carried out in Alpha's business relationship with one of its customers. Conversely, the company was able to reap bonuses if the costs were lower.

Alpha's customers were positive about the firm's interest to understand their needs. However, many of the customers were at the same time also providing services. Alpha had to consider the customer preferences for in-house service production and to refrain from offering overlapping services. For the customer, defining the offering was about finding an optimal solution. "When one's organization is built and developed, of course it has its price. If we buy from outside, it also has its price. It's about finding a balance and considering the model that fits" (Alpha's energy producer customer). For example, project planning was excluded from Alpha's services because that was defined as the customer's domain.

Meetings with the customers, however, opened avenues for new innovative services. Development of software, a wind power plant portal, was, for example, driven by the customer’s need to receive more information in a centralized way concerning the condition of the wind turbines and actions taking place at the wind power plant.

4.1.4. Defining the offering with strategic suppliers and other partners

Operating as a service integrator required cooperation with group- or country-level strategic suppliers. Each actor had a clearly defined role in providing services. Similarly, the service offerings were formed and delivered in cooperation and were based on each actor’s capabilities. Defining the services with the strategic partners required clarifying their future interests.

It has gone so that we first discuss what each party would like to do. Afterwards, we see how much our suggestions overlap and if the partial services fit to each other. When we have common customers, we also need to decide who is going to give up certain offerings and who is eventually going to provide them to the customer. The basic offering is fit together in this way. (Alpha’s business area director for wind power)

Figure 2 illustrates the network of actors that influenced Alpha’s service portfolio development.

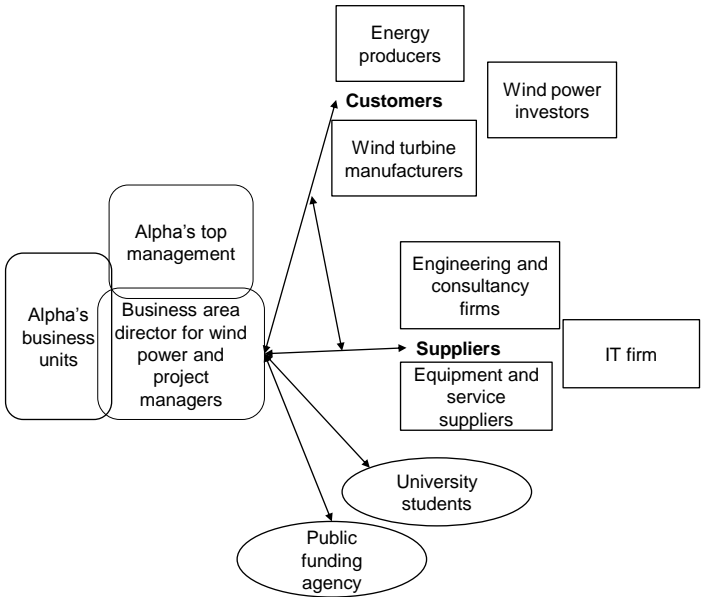


Fig. 2: Network for the wind power service portfolio development project

The nature of the wind power business as a nascent industry impacted the constellation of Alpha’s network; it was under constant change in terms of established relationships. Their formation was dependent on partly unexpected moves of other actors also impacting Alpha’s offering. For example, the ten-year guarantee for wind turbines bound to service agreements excluded Alpha from the

business opportunity as the turbine manufacturer chose to use other service providers for new plant maintenance.

The Finnish Funding Agency for Innovation, Tekes, provided funding for the development projects, and therefore Alpha was able to allocate funds for the smaller actors to support their service development. Those firms played the role of suppliers and consultants in the development project.

4.2. Beta's foundation solution for wind turbine towers

4.2.1. Beta's business model innovation – new solution for new markets

Beta is a Finnish provider of fastening technology for concrete constructions and composite beams for slim floor structures. The firm had earlier experience from supplying traditional energy companies and in 2009 made a strategic decision to expand its business to wind power. The study of the existing foundations for wind turbines revealed an underdeveloped space of more sophisticated foundations. Beta realized that it could best serve customers by developing a service, a turnkey solution with the design and components that Beta manufactured for the foundation of wind power turbines, as well as offering construction services. The innovative solution opened an avenue for providing remarkable added value, but at the same time it required managing the value chain and its links to a greater extent. "As a starting point, we realized that we are not able to provide added value if we do not manage all the areas in the value chain and provide with each link some added value" (technology director, Beta).

For Beta, the conversion into a service company implied increasing the number of interfaces on the customer side and in the partner companies. Internally, the shift from product orientation toward service orientation created its challenges in terms of a greater focus on customers and the corresponding resources. Beta's customers included those energy companies that had chosen to manage their own projects, as well as turbine manufacturers, construction companies, and engineering consultants that provided planning and design services. The service integrator Alpha had a dual role as a partner and customer of Beta. The firm approached Beta when they encountered a need to modernize foundation technology as part of their service offering. The technology director of Beta stated: "Our collaboration started because Alpha had a need for a technology partner, and we provided the possibility for that."

For Beta, defining the business model for the nascent industry of wind power required analyzing the firm's earlier experience that could contribute to the new business and cooperating with partners that were able to provide expertise in design and understanding the customer needs. With this knowledge Beta was able to evaluate the feasibility of the business and proceed to developing a business model. The original business model developed remained mostly the same with a few modifications over the years.

4.2.2. The network in the development and implementation of the offering

Beta's network was vital for defining the features of its offering and contributing to its development and implementation as the technology director of Beta described: "[The

partners] are so important. We could not do without them. It is impossible to develop this kind of multidimensional solution on our own.”

Defining the solution was thus based on the interplay between Beta, engineering consultant Delta, the system configurator, service integrator Alpha, and turbine manufacturer Epsilon. The discussions with them defined the path taken by Beta. For the sales and implementation of the wind turbine foundation, Beta cooperated with the engineering consultant Delta in two ways: First, Delta studied if there were business opportunities when new bids were announced. Together the firms then submitted their proposals. Second, Delta provided R&D, planning, and configuration of Beta’s offering based on Beta’s idea generation; their role was making sure that Beta’s ideas could be technically implemented.

Beta’s offering, however, had to be modified to fulfill the requirements set by the cooperation between turbine manufacturer Epsilon and the service integrator Alpha. The turbine manufacturer was considered the strongest influencer when the type of foundation was selected and its requirements defined. Alpha’s well-functioning relationship to the turbine manufacturer Epsilon also served Beta’s purposes as the firm was interested in receiving feedback from this market actor.

Beta’s goal was widening the customer base with a mass-tailored solution. For this, it aimed at establishing partnerships and supplier relationships with the turbine manufacturers. The contacts with the new actors were also expected to boost the development of innovative solutions as the talks were likely to enrich the view on the current business. Figure 3 illustrates the network of actors that had influence on the foundation solution development for wind power turbines.

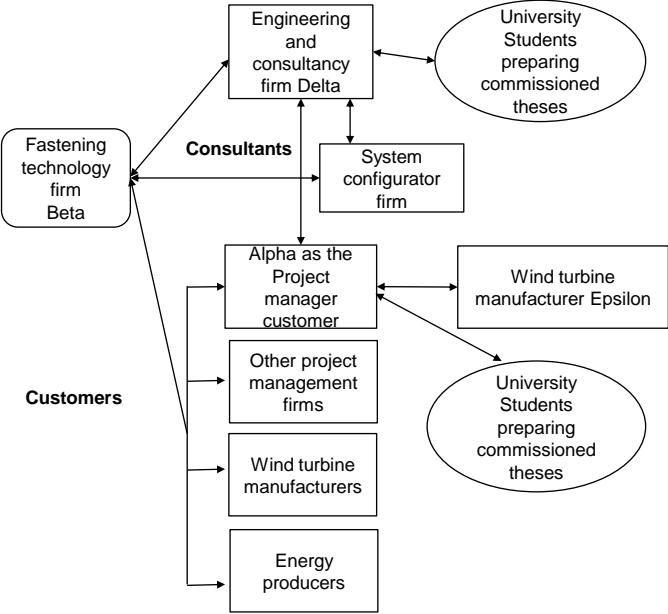


Fig. 3: Network for the innovation of the business model for wind turbine foundation solutions

Involving the customer as a partner to define the offering was different from a passive buyer role. The active joint development of solutions was expected to improve them, but it also increased the risk on each side: “In the development project each actor

carries much risk, and this makes the ability to bear and manage that risk perhaps the most important thing. Another side is that the target is seen in the long term, even in years” (technology director, Beta). Accordingly, the time perspective in the relationship was expected to be longer than just the one project in order to pay back the investment in the development.

4.3. Delta’s service portfolio for the wind power industry

4.3.1. Delta’s business model innovation – total service package

Delta is an engineering company providing design and consultancy services for the energy and manufacturing industries and traffic infrastructure projects. Their business in the wind power industry started when they acquired an engineering firm that had carried out the first environmental impact assessments in Finland and laid the foundations for the field. When the wind turbine projects started to increase, customers increasingly demanded engineering and consultancy services from Delta. Soon Delta became the largest expert in the field in Finland.

In their strategic wind power projects, Delta aimed at combining existing capabilities from different technical fields and business units to provide total service offerings to their customers. In 2010, it established a wind power management group for coordinating the dispersed capabilities between five different technical fields. The company welcomed the new wind power business since one of its main businesses, transportation infrastructure projects, was impacted by the cuts in government budgets.

4.3.2. Model and service offering innovation as a response to customer needs

Delta’s goal was to sell a full set of services to energy companies. Services needed to be modularized for this purpose. The wind power management group then planned a service package from the various modules, which was used for marketing purposes. This also required acquiring new capabilities associated with the new business: “The new wind power expert complements our set in such a way that now we can purchase turbines, too. We have knowledge on how to write quotes to foreign companies, to different turbine manufacturers” (regional unit manager, Delta).

Including new capabilities through recruitment and service innovation in expert groups inside Delta and designing a total service package was a response to customer needs. The energy firms had expressed their interest in wider service entities instead of buying services separately from different consultants. The shift from the latter choice could be traced back to the nature of the wind power business; while it demanded use of different experts, their large number would simultaneously complicate project management. Delta’s customers felt that a large firm was a secure partner. Very small wind power actors did not always have sufficient resources for maintaining and managing several consultant relationships.

Governmental ministries and regional councils seeking environmental impact assessments and urban planning for wind power projects formed another customer group. Simultaneously, Delta provided R&D for infrastructure companies that were suppliers of wind power service integrators and energy companies. When the

projects demanded, the company used subcontractors to provide planning services for electrical grids. Delta had given up on this business because their customers mostly performed their own electrical services.

4.3.3. The internal challenge of defining and implementing the offering

Although the new business was based largely on Delta’s existing capabilities, internal coordination of the wide range of different technical fields was challenging. “Wind power is not that complicated. But the whole process has so many different pieces. It reaches from environmental impact assessment to planning the foundations and performing stability analysis for the turbines, and so on” (regional unit manager, Delta).

For Delta, serving the customers with wider service entities required seamless and efficient cooperation between the units. Furthermore, in Finland the firm had offices in several locations, each specializing in a specific technical field. This also challenged coordination of the service offering as each internal unit that in the past had been regarded as a separate “locker” now had to play together in order to combine their know-know. Figure 4 illustrates the network of actors that influenced the service portfolio development at Delta.

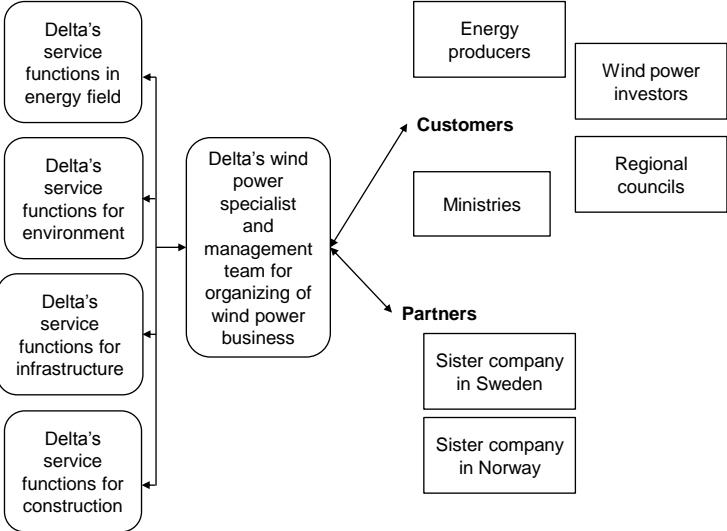


Fig. 4: Network for the innovation of the business model for Delta’s wind power service portfolio

Also, the capabilities of the group’s other Nordic firms were examined. The Swedish sister company could contribute to evaluations and Norway to wind turbine acquisitions. The firm in Denmark had a long history of experience in off-shore wind power projects. This knowledge needed to be better utilized in wind power projects, and the sister companies took steps toward closer cooperation.

5. Analysis

The case descriptions show how the business models of the selected case companies evolved in a networked and intertwined manner when new services were developed and how network actors influenced and directed other actors' choices concerning the model elements in each project phase. The following tables contain the key findings regarding each company with the respective business model element and actors influencing its contents. The tables 2, 3 and 4 also show the drivers behind development of the business model element and actions taken in this respect.

Business model element	Actors influencing element	Drivers for developing the element	Actions taken
Internal structure	Customers	Demand for large service entities because of new customers' small organizations	For the first time, different business units combine their capabilities as they respond to customer feedback
	Business units	Possibility to make use of firm-internal capabilities broadly and grow the business of various business units	Joining the forces for service portfolio development.
	Suppliers	Establishing new relationships to partners with broad capabilities	The service integrator no longer needs certain in-house experts as the suppliers have developed their capabilities in performing the services.
Offering and development process	Customers	Customer requirement	Avoiding overlapping offerings with customers.
		Customer need	Service entities modified in cooperation with customers. Developing flexibility in module composition through ten entities. Creation of innovative services that customers need.
	Business units	Offering together a service package	Developing the services modules in different business units under management team supervision.
	Suppliers	Objective between the partners cooperation instead of competition	Partners provide complimentary service/technology for Alpha.
	Universities	Good match between partners' resources	Students conducting research projects.
The funding agency for innovation	Broadening knowledge and understanding	Funding provided for R&D projects in wind power networks.	
Revenue and cost mechanism	Government	Project feasibility	Government decisions on the tariffs ensuring project feasibility

	Customers	Customer requirements	Risk of exceeding/ the planned costs is shared with the customer. Pressure from the customers for more service and lower price leads to looking for cost reductions, e.g., through a resource management system innovation. New revenue models tested among customers, e.g., dependability.
	Suppliers/ Partners	Sharing between the partners	Partners receive a share of the margin in proportion to their added value.
Sales process	Customers	Existing customer-supplier relationships	Actor that has an existing relationship with the customer takes primarily care of the sales process when making joint bids.
	Suppliers	Project "ownership"	Actor that has initiated the project takes primarily care of the sales process when making joint bids.
Value network and channels	Suppliers	Partners jointly forming the network Definition of network roles and positions – Balancing between cooperation and competition	Partners create relationships to third parties. Carefully considering with which actors to act and how.
	Customers	Efficient and effective delivery of services	Building a network that provides possibly much value to the customer.
Delivery and implementation	Suppliers	Separate capabilities	Each actor delivers its services separately in the project but toward the customer as only one entity.
	Business units	Ensuring smooth implementation of projects	Planning jointly delivery processes of various services.

Table 2: Network actors participating in defining the business model elements of the Alpha case

For the service integrator Alpha, the network was crucial in defining the service offering. The needs of Alpha's customers directed the contents of the service modules, which further influenced the formation of the value network in terms of supplier partners. Alpha's customer orientation highly contributed to an innovative IT-based service.

The customer preference of receiving comprehensive service from one service provider required Alpha to establish and maintain a network with the needed resources. With the supplier capabilities, cooperation widened to new areas and markets, e.g., through joint bids. Coordination between the parties shaped the offering and necessitated constant decisions on each actor's role toward the end customer. The relationships with some of the customers and suppliers were characterized with competitive elements as well.

The revenue and cost model was also influenced by the signals received from the network. The customers needed cost effectiveness but also understood the value added in the offering of the specialized service provider. Alpha also participated in sharing the risk and benefits with the customer.

Business model element	Actors influencing element	Drivers for developing the element	Actions taken
Internal structure	Customers	Match to customer needs	Providing service entities requires more internal interfaces.
Offering and development process	Customer/ Partner Engineering and system consultants	Match to the needs Technical feasibility of the offering	Customer/partner (service integrator) participates in defining the contents of the offering and contributes to the development of the foundation. Contributing to the design and technical feasibility.
Revenue and cost mechanism	Customer/Partner	Sharing the cost	Partner is expected to contribute financially in the development of the solution.
Sales process	Customer/Partner	Customer mediation Considerable input of the customer/partner in offering development Various ways to acquire foundations for wind turbines and various actors influencing the acquisition decision	Sales contacts subjected to the customer's contacts Making an agreement on joint bids. Customizing the sales process. Need to consider several actors in a wind turbine project.
Value network and channels	Customer/Partner	Balancing with competition Variation in wind power project organizations	Agreeing in acting together in specific future projects. Building the network and channels to respond to various project organization models.
Delivery and implementation	Customer/Partner Other customers	Beta's solution was part of Alpha's service offering Customer's own scope of services	Service integrator implemented Beta's solution Erection of the foundation an option and implemented by partners.

Table 3: Network actors participating in defining the business model elements of the Beta case

As with Alpha, the network notably participated in the business model development of Beta when the combination of product and service was defined. The involvement of Beta's customer, the service integrator Alpha, and the turbine supplier influenced Beta's product and service design, which was carried out in cooperation with the engineering consultant. The service integrator also moderated Beta's sales processes and target market selection because of its dual role as a customer and competitor. Delivery and implementation took place by the integrator Alpha, which also facilitated Beta's access to another important value network actor, the turbine manufacturer Epsilon. Epsilon, in turn, can express its possible requirements concerning the offering and willingness to apply it later on.

Business model element	Actors influencing element	Drivers developing for the element	Actions taken
Internal structure	Customers	Increasing demand for large service entities.	Starting cooperation between business units and technical areas.
	Business units	Internal coordination needed to provide turn-key service and increase sales	Different technical areas and business units in different locations coordinated in a new way in order to maintain the customer relationship throughout the project
	Sister companies	Existing capabilities inside the group	Deciding which capabilities needed in-house and which acquired from sister companies.
Offering and development process	Customers	Match to customer needs Small customer organizations preferring one supplier	Designing an optimized combination of services for customers Turn-key service and service package development
	Business units	Offering together a service package	Joint development of the service package.
Sales process	Customers	Match to customer needs Need to keep the customer and grow sales	Coordinated sales processes between the different units according to customer needs Selling services of other business units as well
Value network and channels	Customers	Customer preferences	The partner selection according to the customer budget
	Suppliers	Outsourcing decisions at Delta because of customers' own service organizations.	Sub-contracting of electrical grid planning and design
Delivery and implementation	Business units and sister companies	One entity toward the customer	Coordinating the delivery of each module or service

Table 4: Network actors participating in defining the business model elements of the Delta case

For Delta, the company's internal network in terms of its various business units and sister companies was extensively used for coordinating the know-how when compiling the wind power services. In line with that, understanding and forming a match to the customer needs directed the compilation of the firm offering. Integration of the internal units is crucial in order to provide a consistent wind power profile for the customers. The customer preference for a comprehensive service package and turn-key service also required turning to the value network, thus outsourcing certain capabilities.

In spite of the slight differences in the way the network influenced business model development and implementation at Alpha, Beta, and Delta, all in all the network actors were involved to a great extent in defining each other's business model

elements. These three firms were part of each other's networks. In addition, they were actors that had significantly included end customers, other suppliers, and partners and public institutions in their service portfolio and solutions development. Table 5 below sums up the results of the Alpha, Beta and Delta cases.

Business model element	Actors influencing element	Drivers for developing the element	Actions taken
Internal structure	Customers Business units Suppliers Sister companies	Size of customer organization More efficient use of in-house capabilities and resources Suppliers' and sister companies' capabilities and resources	Combining the capabilities and resources of different actors in-house Co-development in-house Outsourcing of expertise or hiring new expertise Adding interfaces between actors in-house Starting new kind of project cooperation in-house Learning new ways to coordinate actors and projects in-house
Offering and development process	Customers Business units Suppliers Consultants Universities Government/ The funding agency for innovation	Customer needs and requirements New joint offerings Enhancing cooperation and avoiding competition Matching resources Increase in knowledge New service innovations	Co-development with various actors Modularizing of services Developing service packages and portfolios in cooperation Organizing research projects Applying funding from the agency
Revenue and cost mechanism	Customers Government/ The funding agency Suppliers/Partners	Customer requirements Enabling wind power development High development costs Enabling win-win situation	Sharing risk and costs in new ways Increasing efficiency in performing work, e.g., through process development Added value as the basis for sharing margins
Sales process	Customers Customer/Partner Suppliers	Existing customer-supplier relationships Input in development process Different ways to acquire solutions Project "ownership"	In joint bids, sales process taken care by the actor with existing customer relationship Customization of sales process Making agreements on joint bids to provide compensation for input in development Actor initiating the project takes care of sales process Coordinating sales in-house Cross-selling of services
Value network and channels	Customers Customer/Partner Suppliers	Need for efficient and effective service channel Need to balance with cooperation and competition Structures of wind power project organizations Need to include other actors in network formation	Building a network on the basis of amount of value to the customer and/or different project organization models Carefully considering with which actor to cooperate and how Joint establishment of relationships to third parties Deciding on sub-contracting instead of in-house service production
Delivery and implementation	Business units and sister companies Suppliers Customers Customer/Partner	Smooth implementation of joint projects One entity toward customers Separate capabilities Solution of one actor	Joint planning of delivery and implementation processes Coordinating the delivery of each service and service module Separate service deliveries by actors

		embedded in the offering of another actor Customer's own scope of services differs	Actor implementing the solution varies depending on project organization Erection provided as option performed by partners
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Table 5: Summary of network influence on business model development in service firms

Table 5 demonstrates that the network actors influenced on development of various business model elements: (1) internal structure of the focal firm, (2) service development process and offering development, (3) revenue and cost mechanism, (4) sales process, (5) value network and channels, and (6) delivery and implementation of services. *Customers* and *suppliers* had influence on each element. *Business units* had a strong influence when developing the firm's internal structure. They similarly contributed to the service development process and offering development. Delivery and implementation elements of the business model were also influenced by business units. The influence of the case firm's foreign *sister companies* was remarkable especially on the firms' internal structure, as well as the delivery and implementation of services.

The funding agency for innovation contributed especially to the service development process and offering development. *Government* was involved in defining the revenue and cost mechanism through their decisions on the tariffs ensuring project feasibility. Also Finnish *universities* had a role in the service development process through students, who conducted research as part of the development.

The drivers for the development of the internal structure in the focal firms included customers' internal structure, as well as the capabilities and resources of the various network actors. Customer needs and requirements, increased knowledge, initiation of joint offerings, and the funding provided by the network actors formed the drivers behind the service and offering development. The revenue and cost mechanism development was driven by the customer requirements, high development costs, and a need to share the margins in a fair way with the supply partners.

The sales processes were influenced by the network actor relationships: in each case they were led by those actors with an existing relationship to the customer and in new projects one actor was in charge. Furthermore, sales process of the focal firm was influenced by the partner involvement as the new customers had to be jointly approached. Who actually was the customer or the final decision maker was not always straightforward and created a need for adaptations in the sales process. Value network and channels were developed in response to the customer needs and to balance between cooperation and competition. The need for smooth joint project implementation and separate capabilities of service providers and capabilities of customers affected the service delivery.

The internal structure of the focal firm was developed through a novel type of cooperation and coordination in the network and by creating new combinations of capabilities and resources. Service and offering development was enabled by co-development between network actors, modularizing of services and building packages of them. Revenue and cost mechanism development required sharing of risk and costs as well as margins in new ways between the parties. Similarly, the new means to increase work performance were important. The sales process was

developed through joint bids, project customization, coordination of sales between network actors, and cross-selling of services. The value network formed a basis for the value it provided to the customer. Actors carefully considered with whom to cooperate and how to avoid unnecessary competition. The decisions between in-house service production and sub-contracting led to changes in the value network. The service delivery and implementation was planned and managed through joint coordination.

6. Conclusions

This study focused on examining how business models with new services in their core are developed by business-to-business market actors in a networked manner and how these actors influence each other's business logic. Our findings based on wind power industry cases corroborated the view by Palo and Tähtinen (2013) that innovative models develop dynamically as a result of an intensive cooperation between the network actors. This provides grounds to extend the view on business models commonly examined from an individual firm's standpoint and suggests that, due to the high interconnectedness between the firms' models and network actors' mutual influence to the models, the use of a networked business model concept is appropriate.

The case findings also demonstrated that although network involvement was emphasized in the beginning, when the offering was defined the actors also participated in the business model development in other phases of the project (Tuli, et al. 2007). In addition, their contribution also went beyond the focal projects as the firms sought to understand better customers' and partners' future needs and capabilities and to look for new business opportunities.

Network participation was the most intensive in defining the service offering. It was guided by the end customers and suppliers and the customers' and partners' needs, requirements, and preferences. Together with the firms' internal orientation, they formed a main driver for the business logic change that took place when there was a shift from separate product/service offering to comprehensive service entity offerings. This implies that the logic change is not one-sided and evolves as interplay between the supply and the customer sides. This change, which is likely to bring resistance from the traditional industries (Morris, et al. 2005), has on the contrary been embraced by the customers in the nascent industry. It is also suggested that the extensive network involvement in service offering development can be traced back to the new industry, the network characteristics, and actor positions as well as to the nature of the offering.

In the networked environment the boundaries between the different actor roles were partially blurred, and therefore value chain thinking, where one actor would provide a clearly defined product to another actor and add further value, was challenged. As a consequence, a supplier was able to choose, at least in principle, between serving the end customer or the service integrator, who also was its direct competitor. The cooperation with the latter required precise coordination when the offering was developed, highlighting the customer role as a partner (Kindström 2010). On the other hand, the end customer's in-house service production had the power to make the supplier relationship redundant. Therefore, we argue that a firm, regardless of its

position in the network, has to consider the business logic of other actors in order to continue operating as part of the network and in relationship with each actor. This requires balancing between the firm offerings and defining clear roles as pre-emption for rivalry.

Service innovation as a core offering was another factor driving network involvement. Creation of service modules and packaging offered flexibility, and the customer/partner could choose a fitting combination. In addition to the existing ones, the actors created new services and bundled them according to the market needs. In addition to the existing offerings, service innovations in the case companies varied from services that were new to the companies and the markets to service process innovations and even to the paradigm change as the services and technologies that were previously offered separately were now combined into one turn-key service (Bessant; Davies 2007).

Furthermore, the flexibility concerning the service offering responded proactively to the need for modifications in new projects. In contrast to developing new models each time (Kujala, et al. 2010), the model components could be modified “on-demand.” Furthermore, it is suggested that the traditional models of service/product development (e.g., stage-gate) (Ardichvili, et al. 2003) should be complemented with a notion to the dynamic influence of the network actors when the opportunities are evaluated.

The new industry impact was associated with the service offering; the undefined or developing needs of the nascent industry actors required their presence and interaction between them when the offerings were defined. The other model components and their development – internal structure, revenue and cost mechanism, constellation of the value net for the delivery and implementation – were also shaped in cooperation with the network actors and impacted by the new industry. The study findings also suggest that firms’ internal networks involving business units or sister companies based in other countries had much influence on what was offered and how capabilities were leveraged in the wind power industry. Furthermore, new revenue models and cost- and risk-sharing mechanisms were tested and discussed by the network actors. By participating in defining the value offering, the network actors defined their own position and other actors’ positions in the value net.

We also argue that the business model innovation (e.g., change and extension on value creation and/or capture) is driven and preceded by changes in the business logic that the firm adopts and continuously revises. A central area, especially regarding knowledge-intensive professional services, is the creation of new capabilities – here, a firm relying on a networked business model is more likely to combine its capabilities with firms in the same network rather than hiring in-house expertise in each specialized area. When the network is missing a particular capability, inviting new members to join enlarges the network. Altogether, this enables a quick response to changes in market needs; without resorting to networks, firms in knowledge-intensive industries would easily be hindered by excessive learning curves.

The structure of the network determines what new opportunities emerge and are identified. We propose that this leads to a form of path dependence in which networked business models develop through joint iterations by member firms;

however, as long as the system remains closed, the development of the networked business model is tied to the capabilities and resources of the members and its boundaries are therefore a result of these capabilities and resources. However, when new firms join, the opportunity space of the networked business model is expanded (given that it introduces new capabilities or resources). The efficient use of this expansion, nevertheless, depends on the firms' abilities to comprehend the network as a whole and contrast it with external demand stimuli. This highlights the role of the resource integrator.

6.1. Managerial implications

From a practitioner's perspective, a networked business model becomes particularly relevant when there are many contingencies between the offerings and other model components of firms operating in a certain industry or a nexus of industries. For the managers, recognizing and analyzing the business logic of other firms provides a point of reflection concerning the decisions on the business model.

First, the business models of actors who have or aim at establishing a business relationship can be examined from the standpoint of their model synchronization; are the components compatible in all their parts in an optimal way or can the partner suggest improvements that can benefit the relationship? The same applies to business model innovation; changing one component of the model can bring about changes in others, and the results with regards to other actors and their business logic should always be evaluated. This does not imply that a business should remain static, but an early assessment of the model can reveal the feasibility of the model and assist in finding its deficiencies in time. The assessment is especially important if the model realization is dependent on the critical network resources.

Second, in order to gain an understanding regarding the models and develop them further, firms should continuously seek feedback from their partners and customers. This requires maintaining active communication with customers and partners and to map previously unforeseen business opportunities, such as service expansions and networked offerings. The potential is easily overlooked without periodical status checks focusing on the opportunity horizon.

Above all, managers should consider the network's value in a strategic sense – a source of resources, ideas, and new business opportunities (but also tension, competition, and complexity). The reconciliation of alternative business logic of different firms in the same networked business model requires care and attention, but the outcome is determined by strategic vigilance and the ability to coordinate the business model in the direction of market needs while maintaining a competitive advantage over rival networks.

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APPENDIX 1 Interviews conducted in the companies participating in service innovation projects

Innovation project	Company	Interviewee position	Date of interview	Total amount of interviews per project
Service portfolio for the wind power industry at Alpha	Construction, maintenance, and professional services provider (Alpha)	Business area director, wind power	2/19/2010* 11/25/2011* 12/11/2012*	10
	Alpha	Country manager	2/9/2010	
	Alpha	Business development director	2/15/2010	
	Alpha	Business unit director	2/15/2010	
	Alpha	R&D director	2/19/2010	
	Alpha	Sales director	9/4/2012	
	Engineering firm B	Divisional director	1/24/2012	
	Wind power producer	CEO	1/24/2012*	
Foundation solutions for wind turbine towers at Beta	Engineering firm A (Delta)	Project manager	9/26/2010* 12/12/2011*	6
	Technology firm (Beta)	Technology director	1/30/2012	
	Construction, maintenance, and professional services provider (Alpha)	Business area director, wind power	2/19/2010* 11/25/2011* 12/11/2012*	
Service portfolio for the wind power industry at Delta	Engineering firm (Delta)	R&D coordinator	1/28/2010	8
	Delta	R&D director	3/10/2010	
	Delta	Project manager	9/26/2010* 12/12/2011*	
	Delta	Divisional director	1/30/2012	
	Delta	Regional unit manager	2/1/2012	
	Delta	Wind power specialist	9/3/2012	
	Wind power producer	CEO	1/24/2012*	

* Same person interviewed for two projects in a single interview

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