Exploring Modes of Innovation in Services

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Abstract

Manufacturing companies differentiating their offerings with new services need to combine both product and service innovation. We study how service development is influenced by (a) the choice of separation or integration of service development and (b) the modes of innovation. Our results show that service development often is more structured if services are developed separately. Furthermore, service innovations often follow a sequence of innovation modes different from those of product innovations. Since different innovation modes benefit from varying degree of structure in the development process, many companies find it hard to develop products and services within the same development project.

Keywords

Service development, Service Innovation, Innovation Modes, Multiple Case Study, Manufacturing Firms.

1 INTRODUCTION

Innovation plays a crucial role in competition at a firm level [1]. However, it has become inherently more difficult to compete and to differentiate a company's offerings in the market place using products and technology alone [2,3]. Traditional manufacturers must develop the service business [4] and they can generate new sources of revenues by going downstream the value chain [5].

New types of offerings and innovative services have become essential. The problem is that there are few systematic approaches to new service development and innovation in manufacturing firms and if there are, these are often based on a goods logic and engineering tradition. In the long run - can a manufacturing firm develop its service business without a state-of-the-art service development process?

When an advanced service for the installed base of products is to be developed, it can be developed in a separate development project or in an integrated development project. In theory, it is argued for a separation of services into a separate business unit [2], while others argue for an integration of products and services into one business unit [3]. The advantages developing both a new product and related services within the same development project would be increased collaboration.

The theory of innovation in manufacturing firms is based on the development of new technology. As a consequence, the development process of new products are often designed to improve the technical performance of a product [6]. However, for services it is often the customer experience, the business model or the service system that need to be developed. In addition, new services could differ in their mode of innovation [7] and theories of innovation developed on the basis of observations of products are inadequate to explain the forms of innovation which predominate in services [8]. The question is how to develop services in a manufacturing context where the experience of the service innovation process is limited?

Our paper reports on a two stage research study based on a multiple case study of 17 manufacturing companies and an in-depth study of three service development projects in SKF, Volvo Buses and Volvo Trucks. The purpose of our research is to show how the service development process in manufacturing companies is influenced by (a) the choice of separation or integration of service development and (b) the modes of innovation.

The paper begins with a theoretical framework regarding different modes of innovation and development processes. Then the research method is presented and the two stages of the research study are explained. This is followed by the results of the empirical studies and analyses of the two stages respectively. Finally, a discussion and conclusions part combines the results of the two studies.

2 TRACING SERVICE INNOVATION

2.1 Modes of Service Innovation

Manufacturing firms increase their amount and range of service offerings and the boundaries between goods and services become blurred. Hence, a general description for innovation, applicable both to goods and services, becomes relevant [7]. In a study exploring product and service innovation, the aim was to provide a synthesis of new service and product development research [9]. 217 service-based and 105 product-based companies in the Netherlands were studied. The results indicate a support for an integrated perspective; that is there are many similarities when it comes to success drivers. In their efforts to create a general description of innovation, Gallouj and Weinstein studied innovation processes in services and viewed innovation as any change that affects one or more terms of one or more service characteristics [7]. Based on this view, they identified six modes of

innovation: radical innovation, improvement innovation, incremental innovation, ad hoc innovation, recombinative innovation, and formalization innovation.

The basis for the innovation modes is a characteristics-based representation encompassing four vectors: provider's direct competences (C), client's competences (C'), material and immaterial technical characteristics (T), and final user's value or service characteristics (Y) [7]. Based on this representation the innovation modes can be described as [10]:

- *Radical innovation*: creation of new sets of vectors of C, C',T and Y.
- *Improvement innovation*: the set of vectors of characteristics are unchanged but quality of some of their elements increase, the improvement can be in elements of C, C' or T.
- *Incremental innovation*: addition, elimination or substitution of a new characteristic but the whole set of vectors remain unchanged.
- *Ad hoc innovation*: typically a new solution to a client's problem implying significant change in C and T.
- *Recombination innovation*: various disassociations or associations of service or technical characteristics.
- *Formalization innovation*: one or more characteristics are formalized or standardized.

In a study of innovation modes related to integrated solutions [11], it was found that the recombinative innovation mode captures the innovation processes in their three case studies. In the case descriptions, also traces of the ad hoc and formalisation mode can be found. This shows that the concept of innovation modes can be used to describe the innovation of service in manufacturing firms. In addition it shows that there are several alternatives of innovation modes that can describe service development in manufacturing firms.

Innovation for services does not often follow a traditional product life-cycle [12]. Instead he suggested a "reverse product cycle" that corresponds to innovation processes in service sectors over the past twenty years. The reverse product cycle consists of three phases. First, new technology is introduced which leads to improved efficiency of the existing service delivery process. Second, the service quality is improved. In the third and last phase the process is no longer in focus but the product itself. Completely new services are created at this stage [12]. Gallouj and Weinstein argue that this innovation process is not universal for services, instead it should be seen as a diffusion process of technology derived from the manufacturing sector into services [7]. They argue that recombinative innovation is the dominant mode of innovation for services but that there are no specific trajectories for service innovations – each individual innovation can follow an individual trajectory.

2.2 The Product Development Process

The need for a systematic way of new product development (NPD) is pointed out in theory [13-15] and there are many propositions regarding the design of a product development process. One early model for product development, named the phase review process, was developed by NASA in the 1960s [16]. The process can be described as a measurement and control methodology, designed to ensure that the project proceeds according to plan [17].

Among the companies that have adopted a formal process, many make use of a stage-gate system [13], which breaks down the process into discrete and identifiable stages. During each stage, a number of parallel activities are carried out by different functions and cross-functional teams [13,18]. The stage gate system is a holistic cross-functional process, which covers every activity from idea to market launch, whereas the phase review process is a functional process restricted to engineering [17].

Concurrent engineering and integrated product development build on cross-functional cooperation in order to create products that are better, cheaper and more quickly brought to the market [19-20]. The fundamentals of concurrent engineering are an increased role of manufacturing process design in product design decisions, the formation of cross-functional teams, customer focus and lead-times as a competitive advantage [21].

2.3 The Service Development Process

It is well established that there is considerable diversity in NPD processes among firms, ranging from highly formal phase-gate processes to none at all [16,22,23]. Gustafsson and Johnson argue that the NPD process has many proven tools, methods and phase-gate processes, whereas the new service development (NSD) process tends to be a relatively arbitrary and unstructured process [24].

In general, when a process is used in service development, it consists of fewer steps than those used to develop manufactured goods [16]. However, service processes are nearly two steps less than the average goods-developing process. Which specific step is eliminated depends upon the firm, however, focus is on steps in the front end of the process rather than the later stages [16].

Edvardsson and Olsson argue that the main emphasis in service development needs to be placed on service concept development, service system development and service process development [25]. In this context, service concept development deals with examining customers' needs and wants and moreover with adequate ways how to satisfy these requirements. Service system development contains all the resources (human, technical, financial resources, etc.) needed to run the service that is to be developed. Finally, the service process development is about all the activities which have to take place to deliver the "new" service.

The existing frameworks and models that have been adopted by service companies originate mainly from product development. These product development models do not consider important aspects of the service logic such as its intangibility, customer heterogeneity, customers as co-producers of services, and that services are impossible to keep in stock. Services, however, have a tendency toward the previous four characteristics. When they are typified by intangibility and simultaneity, the process of evaluation, purchase, and consumption are critically important characteristics [26]. The quality of virtually any service depends on how well myriad elements function together in the same service process to meet customers´ expectations. These elements include people who perform various services that relate to the overall service, equipment that supports these performances, and the physical environment in which the services are performed." [27].

2.4 Service Development in Manufacturing Firms

Manufacturing companies that develop services have to combine both product and service innovation [28]. Hence, simply applying development processes developed for either products or services might not be a successful strategy. Furthermore, services might be developed at the same time as a related product, i.e. integrated service

development, or independently after the product is already developed, i.e. separated service development [28].

A study of companies in the German and Swiss machinery and equipment manufacturing industry shows that the development of product-related services were often integrated in the development of a product, whereas customer services were often developed separately [28]. The customer services were often a solution to a customer request and the development process unsystematic. Hence, none of the service types were developed in systematic processes.

This is in line with research that identified new service development as a strategic hurdle for manufacturing companies looking to increase their service orientation [29]. They found that service innovation 'just happens'. Many manufacturing companies are striving towards increased focus on services and their service offerings are becoming even more advanced [2,30]. Despite the increased number of service offerings in many manufacturing companies the service development processes seem to remain unsystematic [31].

However, research has shown that a structured development process is preferable. Gebauer et al. found that manufacturing companies that successfully achieved high service revenues conducted market-oriented service development and had a clearly defined new service development process [32]. Three phases were identified; (a) identification of market needs, (b) development of new services, and (c) market introduction. Furthermore, the study of German and Swiss machinery and the equipment manufacturing industry investigated antecedents for the development of customer support services. It revealed the importance of organizing development activities, providing service manager decision-making authority at development gates, and creating an innovation culture in the service organization [31]. The two antecedents related to the development process affect overall profitability to a greater extent than the creation of an innovation culture does. In a further study, Gebauer and his co-authors argue that to succeed with service innovation a manufacturing company needs to align their way to develop service innovations with the existing product-service systems and the service strategy. Dependent on the service strategy, a company needs to develop their services accordingly [33].

3 RESEARCH METHOD

3.1 A two-stage multiple case study

To study how the service development process in manufacturing companies is influenced by the separation or integration of service development and the modes of innovation, a two stage multiple case study approach was used [34,35]. The research subject is well suited for case study research since it is a contemporary phenomenon for which scant academic research has been published [3]. Case study research is also a research strategy that is suitable for understanding the dynamics present within a single company [34]. The first stage of the study covered 17 organizations from the machine industry. In the second stage an in-depth study of three specific service innovation projects was conducted.

3.2 Stage 1: The Machine Industry

The sample for the first stage of our study was companies that belongs to the machine industry and that are employing 500-1000 people. Altogether 17 organizations participated in our empirical investigation. The main data collection method has been interviews with managers. The interviews followed a semi-structured interview protocol, where the protocol had been designed to better understand service development in manufacturing firms. In total, 17 interviews that lasted between 45 and 150 minutes were tape-recorded and transcribed by the authors, resulting in approximately 500 pages of text.

The data from the interviews were analyzed in two steps. First, a naïve reading of the interviews was conducted in order to get a sense of the text as a whole. Through this analysis we extracted important concepts from each interview that were not explicitly guided by theory. Second, an analysis of each case was performed regarding how service development was conducted. The classifications of companies into categories were performed independently by two of the authors. The inter-coder reliability was calculated resulting in a mean value between the two independent judges of 82%.

3.3 Stage 2: An In-depth study of Service Development

In the second stage an in-depth multiple case study was conducted in order to study specific service innovations. The case studies are based on studies of archival records and interviews with originators of innovations, service development personnel, sales managers, service managers, and customers. A total of 16 interviews were conducted, each of which lasted approximately one to two hours.

Seven interviews were conducted at SKF, six at Volvo Buses, and three at Volvo Trucks. The interviews were conducted with the assistance of an interview guide, and were tape-recorded and transcribed. Information was sought in the following areas: service innovation, service development, the service's relationship to the product, sale and delivery of the service, and reasons for the service innovation's success or failure.

Data collection and data analysis was carried out in a research team in order to achieve complementary insights and enhanced confidence in the findings [34]. The data analysis was based on detailed case study write-ups for each company followed by a thematic analysis.

4 EMPIRICAL INVESTIGATION

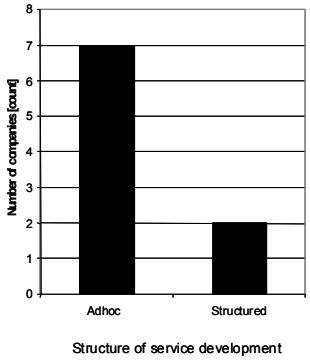
4.1 Stage 1: Separation or Integration of Service Development

The first stage of the empirical investigation focused specifically on the separation or integration of service development. Many of the organizations studied view services as a part of the augmented product and use them as a strategy to sell more goods. For instance, maintenance of the goods is often viewed as free add-on services and can be manifested by technical support or call centers. More advanced contract management programs, such as proactive maintenance programs or rental services, are chargeable services where customers decide on what service level they want to buy. In a full contract program, the supplier offers complete service accessibility. An example may be that a company sells "a number of fastened screws" instead of assembly tools, or a "transport solution" instead of transport vehicles.

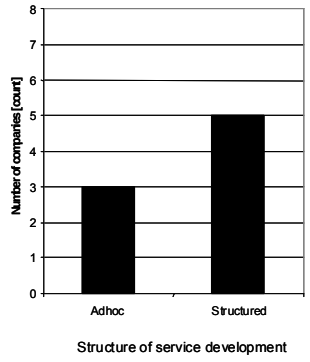
One specific example of service development concerns the development of services related to fork-lifts. They argue that when service development was introduced, much of the development work was centralized and often conducted to support the sales organization or service personnel. In addition, many services come from discussions with customers where the organization has had a long-term business relationship. One deliberate strategy used by many organizations is to transform intra-organizational services to end-user services. Support systems are often developed to help the service personnel to provide better services to end-users. After they have

been tested, implemented and used by the service personnel, they can be improved to aid the end-user directly. In one example concerning updates of software, non-sophisticated interfaces for service personnel are improved by developing a user-friendly interface making the service available to customers.

An overview of the organization of service development in the 17 companies is presented in Figure 1. About half of the companies claim that they have integrated service development with the development of goods. When it comes to the description of service development, though, the practices and methods used are mostly performed ad hoc. One possible explanation is that when services are introduced into the setting of the product development process, the traditional engineering work does not allow services to get enough attention. The reason for the problems can be related to the different modes of innovation for goods and services.



a) Integration of product and service development.



b) Separation of product and service development.

Figure 1: Integration and separation of service development.

Within the companies that develop services separately from the development of goods, the services are to a greater extent developed in a development process tailored to services only. One of our case companies describes service development as "more *business oriented and graphical… it includes more models to build up the service … instead of just text"*. The service development model is also described as less linear, it is iterative so the development model should reflect this.

This development can be organized in different ways, however; either it occurs in a central development unit, or it is placed in the various local service units. Organizations with a centralized service-development unit strive to make service offerings available globally, while local service-development units provide services to their specific marketplace only. In our empirical investigation, it seems that the most successful strategy for initiating a structured way of developing services is to incorporate a separate unit for service development and to use multiple organizational competencies. As a step towards better integration of service and product development, a number of companies arrange yearly conventions for product developers and service personnel. One purpose of these conventions is to generate new features and services for the installed base of goods.

Analysis

The first stage in our empirical investigation shows that the service development process is often more structured if the service is developed separately, compared to if it is integrated in the product development process. The activity, interactional and relational nature of services is focused on. The reverse product cycle [12] might help us explain why it is harder for manufacturing companies to structure the development of services within the product development process. The development process is designed to support a specific mode of innovation for the products while the services might follow a different trajectory of innovation modes and integrate customers more directly in the development process. As a consequence, the activities in the product development process will not support the development of the service – and the development process will be perceived as unstructured. The empirical observation that the development process is more often structured when service development is conducted separately support this argument. When service development is conducted separately, the development process can be designed to support the mode of innovation for services. The better fit between the mode of innovation and development process should result in a higher success rate for services developed separately from the product.

4.2 Stage 2: Modes of Innovation and Service Development

Building on our results from stage 1 of our research, we focused specifically on the service development process and the modes of innovation in the second stage. Three service innovations were studied; Asset Efficiency Optimization (AEO) at SKF, Parts-on-Line at Volvo Buses, and Fuelwatch at Volvo Trucks.

Development of Asset Efficiency Optimization

In the late 80's SKF's interest in conditioning monitoring started to grow and was connected to a maintenance system. The interest in condition monitoring and a decision to have deep knowledge of this within SKF lead to the acquisition of a number of companies specialized in this area.

Towards the end of the 90's Sune Karlsson was appointed CEO of SKF, he earlier started ABB services and with that background the interviewees feel that he strongly contributed to the development of the service area in SKF. For a service person in a product dominated company such a service oriented CEO was of help: "you didn't have to explain to the CEO 'you're stupid and don't understand this', rather he pushed this forward 'why don't you do this?' This was very helpful in the organization as it made it difficult for middle management to say that this wasn't good." During this period a separate division for the service business of the firm was created.

With Sune Karlsson as CEO a number of service companies were bought and the entering of those new employees affected the way SKF worked as well: "they were a bit wild and we learned from that, they were more of entrepreneurs". Together with those service specialists the AEO-concept was created. One driver was that "we understood that those black boxes with condition

monitoring and our excellent bearings and all that, it had no effect out there if you didn't educate the customer in understanding this, and that is one part of the AEO-concept." As concisely stated by another interviewee: "we didn't get our fantastic systems to the market."

With the integration of a number of newly bought companies with competencies in the consultancy area the AEO concept was further broadened with focus on maintenance strategy. Another contributor to the creation of a more visible service offer was when charges for products and services were separated. From the customer side it seems as the personal relation to an account salesman at the separate service division and is experienced as a key for long term cooperation.

The key to the accomplishments through AEO also falls back to the culture of SKF: "I think the key is that our base is not bearings but to solve problems, and how you do it – that is not so [important]"; the main thing is to solve the customer's problem in some way, not necessarily with a bearing.

Development of Parts-on-Line

The development process at Volvo Buses was originally introduced to develop new vehicles. Due to the rigidities of this model, later a development process for software was introduced. This is the model that has been used to develop new soft products or services. The process used for service development consists of prestudy, concept study, development, final development, industrialization and deployment. About 2 percent of the development budget is used for development of service. Altogether about 10 persons are involved in development of service.

The idea with Parts-on-Line is that customers have direct access, through an Internet portal, to Volvo's parts supply system. This means that customers can order parts at any time without having to consider workshop opening hours. Volvo Buses initially targeted large customers for this service, since this was for whom the system had primarily been developed. The idea was as follows:Volvo Buses maintains a certain degree of scepticism about intangible services. Parts-on-Line, however, is a service based on hard issues like spare parts, and the likelihood that the system will increase the sale of spare parts has led to greater acceptance of the service.

The technical solution within Parts-on-Line has its origin in a large-scale project at Volvo that aimed to create an e-business system. Following the completion of this project, certain personnel at Volvo Buses felt that this knowledge could be leveraged and used as the basis for developing a new service. "In the e-business project, Volvo wanted to learn and a consulting firm wanted to educate about the web so it was a giant project. I believe we were 90 persons and half of them from the consulting firm so we spent a lot of money… it was a fun time."

The necessary resources were not available at Volvo Buses at the time, so funding was obtained from other Volvo companies. Once the system was in place, the solution was tested with a key customer, whose solution has been used as a reference.

Although a formal development project was formed during the development of Parts-on-Line, it did not follow the suggested development process. Despite a business case being documented, the process was mainly continued on an ad hoc basis. In practice, most projects are conducted with the involvement of a limited number of people. The development team in the Parts-on-Line project consisted of six members.

After the first cases, this service has been developed further. Especially, the customer interface and databases have been upgraded. "Afterwards, Volvo Parts is now the owner of the application – and they have done two upgrades…it now is the third generation of the system." This service has now entered a new phase of development, where a bundling strategy is used to develop the service further. "In the project, we have to create a dialogue and make something good out of it using intelligent bundling of a business concept – so we get better payed for the [free] system… then we can assure loyalty so it does not become an ad hoc thing."

Development of Fuelwatch

The idea of Fuelwatch is to reduce the customers' fuel consumption and consequently cut fuel costs. This is done through the combination of six individual services that are packaged and sold under the designation of Fuelwatch. All services included already existed although they were offered by different units within Volvo Trucks. Furthermore, they were delivered differently at different locations, e.g. different countries. As Fuelwatch was developed the quality of the services was secured by educating the staff to offer the same service. It also facilitated the marketing of the services. "Fuelwatch is an umbrella term […] used to market the services with only one denomination and to have a clear structure in what is offered to the customer."

As the project started there were a few enthusiastic people getting a small amount of money to develop the idea of Fuelwatch. After some months though, the work was accepted and it developed into a project with a budget and a steering committee consisting of managers from different organisations. The development of Fuelwatch was performed within the business unit "Business solutions", working with sales and support. The development process was performed in this business unit because that was where the people getting the idea were working at the moment, and they were the ones enthusiastic to develop it. One of them explains the development process like this; "Some of our engineers got ideas that they thought were fun, then there were people like me who thought it could be useful and salable, and later on it was the customer needs that set the direction for the development."

Although the development of Fuelwatch was performed as a project it did not follow any structured development process. Since new ideas for services are more ad hoc and has a shorter development time than products, the existing development process, originally developed for products, was not considered suitable. "It cannot be done the normal way [i.e. follow the product development process] because it will take years from that you get the idea until you have the service on the market, it simply doesn't work."

Analysis

The three services and development projects investigated in our case studies share a number of characteristics. First, the services were developed separately from the goods. Second, the three services are driven by technology and based on this a service has been developed for the customer. Third, all three case companies have structured development processes for services, but neither of the three development projects have used it. Furthermore, the empirical investigation showed that different modes of innovation [10] have been observed throughout the development of the three services (Table 1).

The development of AEO has taken place during a long period of time. In a first phase condition monitoring was developed within SKF, having high priority. In parallel, services within maintainability were developed. The connection between the two was made in a second stage, maintainability services and condition monitoring was combined, or bundled, as a means of getting "the fantastic

systems to the market". However, the AEO concept has been refined and repackaged in what can be defined as a formalization innovation mode.

Mode of Innovation	SKF	Volvo Buses	Volvo Trucks
Radical Innovation	1. Condition Monitoring	1. An e-business system	1. Online program for surveillance of truck efficiency
Improvement innovation		3. Parts-on-Line	2. Improving existing services
Incremental Innovation			
Ad Hoc Innovation	1.Maintaina-bility services	2. Parts-on-Line	
Re-combinative Innovation	2. AEO	4. Parts-on-Line	2. Fuelwatch
Formalization Innovation	3. AEO		3. Fuelwatch

Table 1: Modes of innovation (numbers indicating an approximate time sequence of when the services were developed within the companies)

Considering the case of Volvo Buses and their service Parts-on-Line, the service has gone through a number of innovation modes. The first development of an e-business system can be seen as a radical innovation in this context, since it made a new technology available. Then a phase building on ad hoc innovation took place including the first implementation at a customer. Then the service followed an improvement innovation mode covering a large number of installations of the service. Recently, the service has entered a recombinative innovation mode where the service provider looks for possibilities to combine different service modules.

The development of Fuelwatch within Volvo Trucks started with technology driven services that were new to both the company and most of their customers. The online program for surveillance of truck efficiency; Dynafleet, is an example of a radical innovation that forms the basis of Fuelwatch. At a second stage a number of services that were already offered by the company were improved and bundled and sold under the name of Fuelwatch. Finally, the service is continuously improved through standardization and modification, which could be seen as a formalization mode of innovation.

The development of ad hoc innovations seems to be dependent mainly on factors other than structured development processes; foremost a service orientation in the company seems to be a prerequisite for the development of services. Ad hoc innovations take departure from a specific client problem, and in a separate service division close relations to clients are probably established through which client problems are easily identified and addressed. As in the case of SKF the attitude of the personnel at the service division is focused on solving a client's problem - either through goods or services.

5 DISCUSSION AND CONCLUSIONS

The product development processes has their origin in the development processes from NASA and the innovation modes of technical products. In addition, the service development processes build on translations of product development processes into the service sector. This means that phases, methods and gate criteria in models for service development initially have been constructed for developing goods. Service developers often perceive the development process as an obstacle instead of a supporting factor. This is one of the explanations for the lower use of development processes for services.

When manufacturing companies start developing services, they seem to adopt one of two strategies (a) they use the product development process for service development; or (b) they develop services without any support of a development process. In either case, the company experience service development as difficult. By using innovation modes to investigate service innovation in manufacturing companies, we can better understand failures of either of these two strategies.

Service innovation often follows a sequence of innovation modes that is different from the sequence of innovation modes of products [12]. This makes it hard to develop products and services within the same development project. As an example, the product could be a case of a radical innovation while the service might be in a formalization mode. These two innovation modes need different kinds of support and it might be difficult to design one development process and co-ordinate the work related to both the product and service. Different innovation modes benefit from varying degrees of structure and support in the development process. As a consequence, integration of product and service development within one project is difficult.

We argue that to develop and manage processes that support service innovations we need to understand the innovation mode of specific services. This means that rather than having common support for service innovations in general, there is a need to have several development processes for services. For ad hoc innovation that often originates from an ongoing customer relationship, a basic support structure is needed. Such a support structure might include a service culture, formulas for developing a business case and slack time for development personnel.

For other innovation modes such as improvement and incremental innovation a more traditional development process can be used. Here, development methods and tools such as service blueprinting, QFD, customer surveys and building a more detailed business case can be used. For re-combinative innovation and formalization innovation, issues like business model, service modules, standardization and bundling strategies becomes central in the development process.

Our research shows that Gebauer's identification of the structured development processes as a prerequisite for successful service development is not valid for all innovation modes [31]. As an example our in-depth cases illustrate that ad hoc innovation modes are better supported by factors such as a service-oriented culture than a structured service development process. With a better alignment of the characteristics of the development processes and innovation modes the success rate of development projects will increase. As a consequence, we argue that the success factor for service innovation in manufacturing companies is the fit between the innovation mode and the development process and not the development process as such. An ability to innovate provides a strong basis for organisations to obtain and sustain superior performance and competitive advantage [36]. We have in this article argued that service innovation success in manufacturing companies is linked to selecting and managing the proper mode of service innovation fitting the company's development process.

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