Service Innovation

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Success is not final; failure is not fatal: it is the courage to continue that counts.
—Winston S. Churchill

Key Takeaways

- A systematic service innovation process increases the success of service offerings.
- A clear focus on the early innovation phase is necessary to identify meaningful service opportunities around traditional product applications.
- Customers have to be involved in the entire innovation process to ensure their satisfaction with the service offering.
- Required resources and capabilities to innovate and deploy new services have to be assessed within the manufacturer's and customer's organization to avoid expensive pitfalls.

Based on our St.Gallen Industrial Service Management Framework (cf. Chap. "Fundamentals of Industrial Service Management"), service innovation is one of the key disciplines manufacturing companies need to master to offer services successfully. Thus, this chapter sheds light on the evolution of service innovation at manufacturing companies. We will describe future pathways for how firms can perform service innovation in line with their corporate or service strategy. Relevant characteristics of a service will guide this chapter before we propose a universal guideline that supports practitioners to innovate fruitful services.

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1 Pitfalls in Service Innovation

Due to the increasing commoditization of a leading firm's products, the top-level management decided to enhance their current service offerings. In parallel to the ongoing digitalization of factories and products, digital technologies can support customers and provide a benefit to future business outcomes. Consequently, customer care, as the department in charge, started to develop a smart service based on digital technologies. In the following, service specialists developed a prototype of a benchmarking service in cooperation with lead customers. The early development of the service progressed very favorably. All processes and technologies worked well together. Therefore, project managers decided to roll out the new service globally. However, this proved to be much more difficult than expected.

During the prototype's development, only resources from headquarters and the selected lead customers had been taken into account. Service developers expected no major differences when rolling it out to other customers and involving their subsidiaries. Nevertheless, reality demonstrated otherwise. The manufacturer's and customer's subsidiaries were not capable of offering and receiving the service, respectively, as their organizations were not prepared to perform the new tasks. Finally, the narrow development environment caused severe financial losses. First, conceptual adaptations had to be made, which delayed the final market launch and therefore were costly. Second, revenues fell short of expectations as sales activities had to be aborted until adaptations were completed.

A systematic service innovation process might have prevented this manufacturing company from experiencing these issues. Such a process guides service developers and considers necessary resources from an early stage. The following chapters elaborate on how this failure could have been prevented through an adequate service innovation approach.

2 Evolution of Service Innovation

In Chap. "Servitization of Manufacturing Companies," we saw that manufacturing companies have been transforming their offerings toward services for decades. Decreasing margins and shrinking differentiation between competing products drive this development. Consequently, it is of particular interest for manufacturing companies to analyze future business opportunities in services.

Manufacturing companies' offerings can be divided into three categories: products, services, and solutions. Products provide customers certain functions and features to run their business. Services add to this basic need as they further support customer operations. Solutions offer an even higher value to customers since they combine the value propositions of products and services. Due to the ongoing commoditization of products, services provide a more significant lever to increase a solution's value proposition compared to products. However, the traditional product business still dominates the business logic of manufacturing companies.

Therefore, a vast continuum of product-service combinations constitutes current offerings.

Today, manufacturing companies move on to develop not only physical but smart services. Traditional after-sales services are still part of the portfolio to support the present business model. Yet, the focus in business development evolved from developing physical toward smart services.

Manufacturing companies started to offer physical services aside from their traditional products to support customers in operating them (cf. Chap. "Servitization of Manufacturing Companies"). In this way, suppliers addressed explicitly articulated customer needs, which are still important during sales negotiations. However, all processes to design new offerings are consistently product-driven. Physical services were developed on an ad hoc basis whenever customer needs should be satisfied. Therefore, specific processes to innovate early physical services have been absent for a long time. However, some companies identified the need for a systematic service innovation process quite early (cf. Chap. "Fundamentals of Industrial Service Management").

The advent of digital technologies and software development initiated a further shift in the process landscape of manufacturing companies. Through this evolution, processes became more customer-centric and agile. In addition, such process designs ease the implementation of new processes to develop service offerings as they fulfill important prerequisites of service innovation. We experience that manufacturing companies are still in their infancy concerning the organizational restructuring that comes along with successful service transformation (cf. Chap. "Organizational Structure").

A historical lack of a manufacturer's capabilities in developing smart services is the basic issue for underperforming smart services. Disparate characteristics of products and services lead to the necessity of creating a new set of capabilities to innovate smart service offerings successfully. Today, manufacturing companies most often try to leverage their existing capabilities of product innovation to develop new smart services. Thus, they miss addressing unique characteristics that have to be taken into account during service development. For that reason, manufacturing companies have to build new capabilities embedded in a new service-specific innovation process. A cultural change would furthermore underpin manufacturers' aspirations to drive their service business. Relevant parts of the organization must foster the service mindset by proceeding from a strong focus on "only" developing high-class products to an organization-wide additional high-quality service culture.

Academia provided first insights on how manufacturing companies could improve their service innovation. For instance, in his seminal work, *The Theory of Economic Development*, Schumpeter (1934) emphasized the importance of gaining competitive advantage through the recombination of productive resources. He proposed five different possibilities for a company to achieve an improved market position: 1) introducing new products to the market, 2) applying new production approaches, 3) identifying new markets, 4) exploring new suppliers, and 5) organizing business activities differently. Those five dimensions refer to either the process to generate innovations or the outcome of potential innovations. In this

sense, two distinct areas of analysis are of particular interest regarding service innovation. First, the transformation of the offering as the innovation outcome forms a major research area, discussing issues along with the specific design of product-service offerings. Second, researchers focus on the organizational transformation of manufacturing companies sparked by the introduction of services.

Against this backdrop, the subsequent paragraphs concentrate on the organizational implications rather than on specific design options for new service offerings. We understand service innovation as the process of how to achieve a new service offering that meets the individual needs of a manufacturing company. Consequently, the following does not indicate what innovative service offerings manufacturing companies should aspire to as future innovation outcomes.

The service as the innovation outcome has to be clearly defined to develop services successfully. We elaborate on the peculiarities of services below before discussing what process should guide future service development.

3 Dimensions of Service Innovation's Outcome

A great variety exists on how to specify services. Initially, services have been considered to be intangible, heterogeneous, inseparable, and perishable (IHIP) (Cusumano, Kahl, & Suarez, 2015). IHIP characterizes basic services like repair or maintenance jobs.

In this case, the service is:

- **Intangible** as it has no physical appearance before the outcome becomes visible
- **Heterogeneous** because frontline employees, who deliver the service, have to adapt the service delivery process according to the unique boundary conditions of every repair or maintenance job
- **Inseparable**, since the provision of services leads to their simultaneous creation and consumption
- **Perishable** as no service can be pre-produced to prepare for future demand

The emerging digitalization of products and services blurs the differences between these categories (cf. Sect. 3). Smart services rely heavily on hardware as a source of data. Digitally enhanced products fuel these services with data from their sensors. Third-party data from other devices can enable valuable service features. For that reason, the software is a major part of smart services to generate value from the underlying data. We also recognize that supporting hardware devices enable smart service delivery, and therefore, smart services are becoming partly tangible, homogeneous, separable, and storable.

Additional classifications of services concentrate on the services' purpose. This mostly includes the relationship between products and services. In this sense, manufacturers can design services to support product operations or focus on improving customer operations through service provision (Mathieu, 2001). This view of services can be translated into three evolution stages. First, base services ensure

product delivery. Second, intermediate services support product operation. Third, advanced services increase the performance of the product or customer operations (Baines & Lightfoot, 2014). All these perspectives emphasize the importance of the service outcome (purpose).

The service outcome can be referred to as the improvement of customer operations as any kind of service (base to advanced) impacts customer operations. For instance, even a simple repair service of a machine tool manufacturer influences the operations of their customers. If the manufacturer has to exchange a worn part of the machine tool, employees from both sides have to interact several times. The first contact might be the customer's notification that the machine tool needs a repair service. From this point on, the manufacturer and the customer will cooperate by clarifying the reason why the machine stopped working until the invoicing at the end of the repair service. Each interaction is part of service delivery and customer operations. If the notification system of the manufacturer is complicated, the customer's employees lose a lot of time to inform the manufacturer that a repair service is needed. For this reason, the better the manufacturer designs each interaction, the better the customer's employees can follow the process. Another option for the customer would have been to execute the repair job on his own. In this case, the repair job relies completely on customer operations as he has to include every single step of the repair job into his own operating model. Consequently, the overarching goal of the service is to optimize customer operations. Nevertheless, the service outcome (e.g., the exchanged worn part) can only be achieved through the manufacturer's service delivery in cooperation with the customer. We, therefore, conclude that both the service outcome and the related service delivery process have to be the result of service innovation.

To accomplish this goal, the manufacturers have to design six dimensions during the development of a new industrial service illustrated in Fig. 1. We indicate that the configuration of each service depends on the specification of every single dimension.

In general, service offerings are defined through their value proposition and enablers. As discussed above, the optimization of customer operations is the main objective of the service. Figure 1 refers to this as Dimension 1. At the same time, the optimized customer operation is not the only part of a service's value proposition, albeit the most important one. The customer interface defines how the supplier interacts with its customers. In this dimension, it is key for suppliers to focus on designing a great customer experience. Regardless of how sophisticated and supportive a service might be, if the interface to the customer is not designed sufficiently, customers will refrain from using the service. On the one hand, the interaction could be in the digital space (e.g., through GUIs [Graphical User Interface]) of mobile apps or browser-based applications. On the other hand, there is a physical interface to customers in most cases as well. Every frontline employee deals with the customer in a certain way. Therefore, frontline employees should be trained to always strive for customer satisfaction. This goes beyond purely delivering the exchange of a worn part. It is more about the frontline employee interacting as a comprehensive service provider. Inter-firm processes build the foundation of the customer interface as the underlying dimension of the value proposition. The service

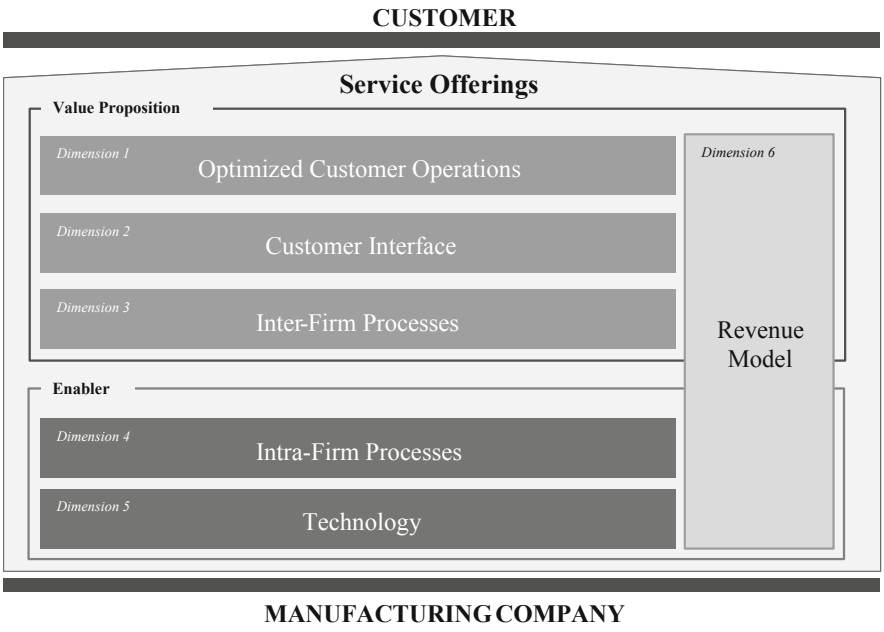

Fig. 1 Dimensions of a service. Own research

delivery process was considered as one single process. However, the aforementioned service delivery process is, by definition, split into two characteristics. Inter-firm processes define what is delivered from the supplier at the customer site. According to the example of exchanging the worn part, all activities of the frontline employee to execute this job at the customer site are part of inter-firm processes. In contrast, all opposing customer activities are designed in Dimension 1 (Optimized Customer Operations).

To offer the value proposition to customers, a great number of preparatory steps have to be accomplished before the actual service can be carried out. The two enablers, intra-firm processes and technology, facilitate a suitable value proposition to customers. Intra-firm processes include all activities suppliers have to perform with no visibility to their customers. In the example of repairing the machine tool, such activities would be preparing the van of the frontline employee with required tools and materials, as well as driving to the customer site. Finally, technology is a more complex dimension. Although the software is the core technology of smart services, hardware plays an important role as well. For physical services, the technological dimension is grounded in the installed base. The ongoing digitalization enhanced the installed base by software components and connectivity. Smart services build on these prerequisites as they apply software to leverage generated data of the installed base. Successful service suppliers include third-party hardware that delivers valuable data to create new or enhance existing service offerings. They also use additional hardware devices to support service delivery and its customers.

Finally, the revenue model completes the service, which cannot be unambiguously assigned to the value proposition or the enablers. It all depends on the receiving customer and the related market environment of the service. Even if the manufacturer designs the revenue model as part of the value proposition, customers could perceive it just as an enabler and vice versa. Nevertheless, the revenue model is a mission-critical part of the service offering that is mainly covered in the next chapter, focusing on service sales.

4 Dimensions of the Service Innovation Process

Continuing from the basic characteristics of a service, it is important to define the service innovation process that leads to a new service offering. Generally, a service development process ensures the successful composition of all treated dimensions. Manufacturing companies approach service development in various ways. Three different streams to design the service development process can be distinguished. All three approaches are grounded in the manufacturer's expertise in developing new products. In comparison to product development, service developers and researchers advocated for either the assimilation, demarcation, or synthesis perspective on service innovation (Witell, Snyder, Gustafsson, Fombelle, & Kristensson, 2016).

The assimilation approach postulates that services can be equally developed to products. For this reason, no adaptions to service innovation would be required to develop new services. This perspective focuses on the introduction of new technologies to the service business. Accordingly, new technologies should be the main impetus to innovate new services. Contrarily, the demarcation perspective calls for a completely new approach to innovating services. Representatives of the demarcation perspective argue that differing peculiarities of services compared to products have to be addressed through a unique development process. Finally, the synthesis perspective identifies the need for a unified innovation framework of services and products. As the continuum of product-service offerings is getting more and more interrelated, the development process of such offerings should address this trend in the same way.

Each of the three perspectives comes with advantages and disadvantages in innovating new services. The differences between services and products are crucial to answer the question of which perspective manufacturing companies should adopt. The comparison of services and products along the introduced dimensions of services exemplifies the different characteristics of both.

Overall, the innovation outcome of service innovation differs significantly from product innovation. While services highly depend on the interplay between the execution of processes and supporting technology, products mainly represent technology customers can apply to their business (cf. Fig. 2). Nevertheless, three dimensions complement a product: the customer interface, technology, and revenue model. At the same time, the characteristics of each dimension differ from the related service characteristics. From a product point of view, the customer interface is again split into a digital and physical component. Those two components are directly

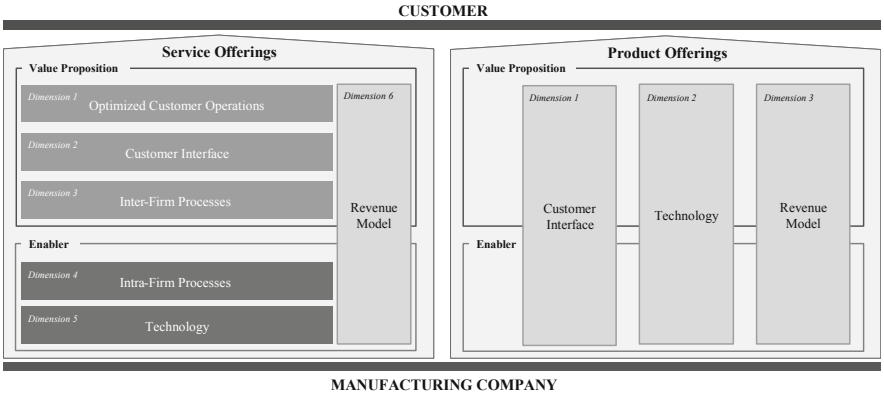

Fig. 2 Differences between services and products. Own research

linked to the technology dimension, in turn, also consisting of the software, as the digital component, and hardware, as the physical component. The design of a product's software and hardware primarily serves to enable the required product features. Product design (within Dimension 2) mostly defines how the customer interface is constructed. Therefore, the main objective of the product's customer interface is not to delight customers but to enable the usage of all relevant product features. The revenue model complements the product in the same way as it does with the service. Nevertheless, the revenue model of products acts as an enabler and as part of the value proposition.

Given that the characteristics of products and services differ strongly, it indicates that processes of product and service development have to differ as well. Therefore, the fundamental definition of processes provides further information on which process model fits best to service development. Generally, a process is defined as the transformation of input into a valued output (Hammer & Champy, 1993). Based on this definition, three different applications of service innovation would be possible. First, the same process could be applied to develop products and services as proposed by the assimilation perspective. Thus, each process could consider different inputs to suit the specific application. Since the characteristics of the output are significantly different, this approach is not expedient because the definition of intra- and inter-firm processes is not part of product development. For this reason, a major aspect of the service would not be developed. Second, the input could be the same for both product and service development. Then, the subsequent process would digest general input in a service- and product-specific way. This approach could lead to successful products and services as for each output, the specific characteristics are considered during the development process. According to the three types of designing service innovation (assimilation, demarcation, and synthesis), the second approach represents a fusion of the demarcation and synthesis perspective. The synthesis calls for the combination of service and product development. Using the same input for service and product development is the first step of

synthesizing both development approaches. Nevertheless, the entire process design is adapted to the peculiarities of the specific innovation outcome. Third, the demarcation perspective corresponds to the adaptation of the input, as well as the development process, to the specifics of the respective innovation outcome. However, product-service bundles are becoming more and more important. Therefore, the identification of customer needs as the development processes' input should be performed comprehensively. This procedure ensures that all customer needs are covered by the manufacturer's portfolio.

The overarching input of both development processes should be the same in the first place. Later on, managers should decide what customer needs will be addressed by services and products. Based on our industry projects, a synthesis perspective in the early innovation phase and a demarcation perspective in the subsequent innovation phase seem to be the most promising approaches to innovate new services successfully. The different characteristics between products and services and the absence of a sound service innovation approach call for further clarification on how to innovate new services. The following chapter describes in more detail how to proceed from identifying customer needs until the market launch of new services.

5 Applying Service Innovation Successfully

While academia tried to offer solutions in reorganizing the service innovation process, we experienced in practice that many manufacturers still struggle to innovate services successfully. Several try ad hoc approaches or strive to use product-driven innovation methods. But the results are often less satisfying. As a result, we developed a comprehensive service innovation process, together with manufacturing companies, based on recent insights from academia (Blum, Budde, & Friedli, 2019). Therefore, to overcome current product-driven innovation approaches, we propose three iterative cycles guiding manufacturing companies to innovate services successfully (cf. Fig. 3). The identification, conceptualization, and implementation

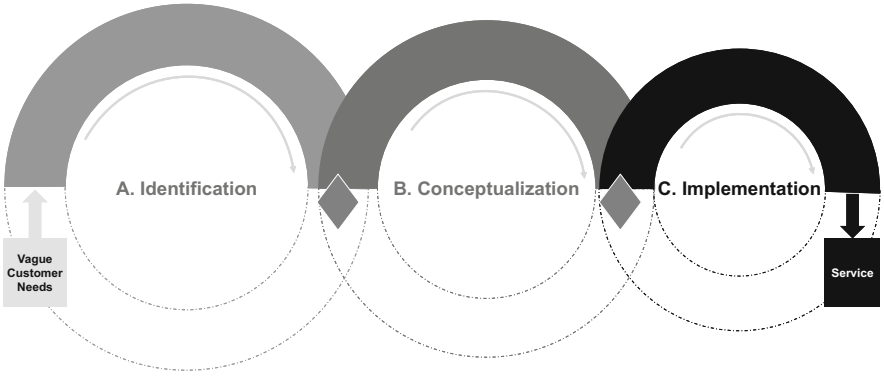

Fig. 3 Smart service innovation process. Own research

phases ensure the comprehensive development of all service dimensions. Using the proposed service innovation guideline to optimize existing service offerings leads to slightly different interpretations of the three cycles. Nevertheless, the three cycles are equally important for service optimization as it is for new service development.

A. Identification

The identification phase is about deriving new opportunities in the service business and to provide promising ideas of potential service offerings. The foundation of the smart service innovation process is vague customer needs. In the beginning, manufacturers typically have only rough insights on how they could support their customers better. The depth of information is often not sufficient due to misunderstandings and lack of cooperation on both sides (manufacturer and customer). Therefore, it is of great relevance to specify customer needs as early as possible throughout the innovation process. A long-term relationship between manufacturers and their customers, resulting in trust between both parties, eases information retrieval and increases the depth of information.

Generally, manufacturing companies have to consider four areas for new smart service impetuses. First, manufacturers should gain knowledge from their customers to identify their needs. Joint workshops, questionnaires, interviews, or focus groups support the identification of not prior articulated and latent customer needs. Through these methods, manufacturers may capture insights about, for example, improvement suggestions, problems with current products and services, or new industry requirements. Second, it is key for manufacturers to gain not only knowledge from customers but also about customers. Insights about customer operations on a process level are critical to assess and identify new industrial service opportunities. In the same way, the physical and virtual environment of the installed base is an appropriate starting point for this analysis. Third, market-wide technology scouting is important to support new service concepts with the best technological solution. Especially in this discipline, seeking cooperation with, for instance, other incumbent companies or start-ups could drive the technological development of the service business. Fourth, internal analyses concerning information about customers or internal improvements complement the quest for new business opportunities in services.

Once all information has been converged to derive new services, the knowledge should be stored to share within the manufacturer's organization. Often, knowledge exists within one's organization but is not accessible throughout it. Overall, an internal feedback and communication system eases the consolidation of knowledge about innovation impetuses. Therefore, manufacturing companies have to assess whether their internal feedback and communication system works properly. On the one hand, manufacturers can ensure information transfer via an open-minded personnel culture and close interactions between their employees. On the other hand, technology can support the internal feedback and communication process to assure that relevant stakeholders are using crucial and valuable information. Nevertheless, it depends on the characteristics of the manufacturer's organization which approach might be the most appropriate. In every scenario, gathered knowledge needs to be

tangible so that others can process it. Formal documentation, like reports, transcripts, or recordings, besides visualization techniques, support knowledge storage, transfer, and the interpretation of gathered insights. Nevertheless, knowledge sharing comes with the risk of overloading colleagues with too much input at this stage. Therefore, aggregating the relevant information is important to prepare the next innovation steps.

Based on the captured knowledge, business developers can derive initial ideas on how to improve existing services or which new service offerings might be promising. Sketches, storyboards, or rough prototypes enable the communication of those ideas. It is essential to build a basic prototype of every valuable idea. Otherwise, the characteristics of each idea cannot be communicated among relevant stakeholders. Peer feedback or a cognitive walkthrough challenges these ideas internally or with the customer. Drafting a business model complements the initial idea generation and prototypes. At this point, the evaluation of the fit with the current business model of the manufacturer is crucial to ensure the viability of future services. Nevertheless, subsequent feasibility studies are a precondition to ensure technical, financial, and legal realizability.

Within the early innovation phase, the most important challenge is to prove an added value of the derived service ideas for the manufacturer and its customers. Top management of the manufacturer mostly claims for tangible evidence that a promoted idea is worth pursuing. Project applications are a common tool to comply with top management's request to demonstrate added value during the product development process. Since the characteristics of services differ significantly from those of products, existing project application forms are typically not suited to assess the potential value of future services. For this reason, manufacturing companies have to apply new assessment procedures within service innovation. However, universally valid methods to assess the value of service ideas do not yet exist. Thus, every manufacturer has to develop its own approach to cope with this issue. A good strategy to address this challenge is to evaluate early prototypes in terms of expected business outcome and development costs. Virtual or physical tests at the customer site and internal cost estimations of all stakeholders shed light on the cost-benefit ratio. Those estimates have to be sufficient to decide the development of new services. The procedures illustrate that traditional governance systems are no longer applicable to manage service innovation. Decision-making in service innovation is rather a continuous evaluation of the project than applying predefined assessments. Nevertheless, managers have to limit the number of initiatives to allocate the firm's resources purposefully. A first gate at the end of the identification phase ensures that only the most promising ideas will be developed further.

B. Conceptualization

Service ideas will reach the conceptualization phase after they have initially proven potential value for the customer and the manufacturer. Early prototypes indicate how service developers could define the six dimensions of a service. However, each of the six dimensions subsequently has to be clearly defined as the early prototypes only roughly considers these dimensions. First of all, the value proposition has to be

precisely defined for every stakeholder. In particular, the optimized customer operation has to be established before all subsequent dimensions can be described. The optimized customer operation leads directly to a new process the customers have to follow. The process can be modeled using the business process modeling (BPM) technique to define the actions of all involved stakeholders on a technical level (Lindsay, Downs, & Lunn, 2003). Based on the BPM model, customer operations can be further detailed and designed. At the same time, this model acts as the core element to derive all underlying dimensions of the service and to continuously update the service prototype. The prototype acts as a constant means to communicate the service idea. Therefore, it displays all the relevant features of the service without being too specific.

To design the processes of the service, developers have to derive the touchpoints between the manufacturer and the customer from the BPM model. Based on these touchpoints, the *service blueprint* combines all process steps that have to be executed by the manufacturer during service delivery, including inter-firm and intra-firm processes (Bitner, Ostrom, & Morgan, 2008). Within one process flowchart, all process steps are integrated, following almost the same logic as our definition of a service. The service blueprint distinguishes between the manufacturer's process steps that are visible to the customer and those that are invisible to customers. Additionally, the service blueprint classifies supporting process steps of the manufacturer as a third category. This tool is well suited to define the process steps of a service in detail. Developers can map not only physical actions but also digital interactions and process steps. However, the service blueprint only contains activities that have to be executed, not the exact interfaces between the manufacturer and customer. We propose that customer experience designers have to add to the service blueprint the detailed design of digital and physical interfaces. By doing so, developers should cater for the four key values of successful customer experience design (Hollyoake, 2009). First, integrity is about a strong relationship between the manufacturer and its customers. Customers should hardly find this relationship anywhere else. Second, customers have to trust their manufacturers to support them as much as possible, rather than putting profit first. Third, manufacturers and customers should be aware of their interdependence as their business success is directly interrelated. Fourth, customers and manufacturers should freely share their needs and insights instead of hiding relevant information from one another.

Finally, the technology development addresses all requirements the process models and the customer experience design determined. Often, this phase is all about software and, to a lesser extent, hardware development. As manufacturing companies are more experienced in developing software and hardware, this phase does not strongly differ from product development, besides the emphasis on agile working techniques (Evangelista, 2000). After most of the development work, a proof of concept confirms the technical feasibility of the service. Once the technical feasibility is proven, the customer value assessment builds the foundation for the next major decision. Manufacturers have to involve their customers in both the proof of concept and proof of customer value. Their feedback on the prototype is essential

for the manufacturer's decision to proceed with the developed service or to abort it before market introduction. At this point, customer involvement is much more intensive compared to product development, as only customers themselves can confirm their satisfaction with the intangible service.

C. Implementation

Service prototypes that have proven their value to all stakeholders are almost ready for the market launch. However, they still have to meet some preconditions. After the proof of customer value, manufacturers know which part of the service is most valuable for their customers. Therefore, the service prototype can be divided into a minimum viable service (MVS) and a holistic service offering. The MVS is defined as a reduced set of service features based on the holistic service offering. Nevertheless, this reduced set of service features needs to satisfy the customer with its basic performance. The MVS is the starting point to launch the new service to the market. Before the manufacturer introduces the service to a broader customer base, the viability according to the required resources has to be proven once again. So far, the feasibility studies were conducted within the manufacturer's development environment or in close cooperation with individual customers. Therefore, the developers cannot guarantee that the whole organization of the manufacturer and all targeted customers can deliver and receive the service. For that reason, technical feasibility and required human resources capabilities have to be assessed globally. The market launch can only begin thereafter.

Along with the conceptualization phase comes the definition of the revenue model, which has been introduced before. The revenue model, among other essential topics to sell the final service, is presented in the upcoming chapter. However, we want to note at this point that market introduction, including the first learnings, has at least to be in parallel with the definition of the sales strategy. Even though the book at hand covers these two topics sequentially, realistically, it would be inefficient and ineffective to do so. Instead, both teams have to collaborate and design the service characteristics and the way to sell it.

Manufacturing companies can leverage their experience in introducing new products for the market launch of new services. However, they have to emphasize the comprehensive knowledge transfer within their organization. All involved employees need intensive training on what the value of the new service is and how the new service will be delivered to customers. Manufacturers should allow sufficient time for this training as it is crucial for the success of the service. Additionally, manufacturers need to decide whether their new service should be introduced to the market together with new products or independently; the bundling and portfolio discussion is not yet part of the service innovation process. Once all preparations are finished, manufacturers should conduct a limited market launch first before they introduce the new service to the whole market. By doing so, they have again the chance to learn more about the best configuration of the service. The characteristics of the service enable manufacturers to adapt even core processes at such a late stage of the development process without losing too much time and resources. Nevertheless, software or hardware adaptations should not occur at this

stage. Finally, the service should be rolled out to the entire market. From this stage on, the implementation phase of service innovation merges with the identification phase of future services and therefore provides future improvements of the current service offerings or the development of entirely new services.

6 Managerial Implications

The introduced guideline represents a general approach to innovate services successfully. However, the three cycles of identification, conceptualization, and implementation mainly provide a theoretical framework of service innovation. Practitioners have to adapt all tasks and activities described above to their specific business context. By doing so, the current configuration of one's organization has a major influence on how service innovation should be performed most effectively and efficiently.

Practitioners should consider four realms in particular when implementing a formalized service innovation process. First, manufacturers should design their own content of all process steps based on the three cycles. Defining specific tasks within each process step contributes to a suitable adaptation to the unique business context. Furthermore, the definition of process interfaces to the surrounding process landscape drives the specific determination of service innovation. Moreover, applying interfaces between service innovation and product innovation is key to the success of new services. Not only should individual process steps be defined according to the manufacturer's needs but also their composition to process sections that end with a decision point. Depending on the corporate culture of the firm, managers might want to be involved to a greater or lesser extent in decision-making along the service innovation process. Second, suitable tools and methods ease the execution of each process step as conceptional definitions of process steps are hard to follow for employees. Thus, tools (e.g., manuals, forms, templates, software, etc.) guide employees through each step and therefore enable the sufficient implementation of the defined process. Third, the purpose of the service innovation process and their related tools and methods is to serve people to organize their work. Therefore, managers have to assign employees, respectively, role profiles to each process step. Fourth, creating an organizational structure in which the role profiles are properly allocated enables successful service innovation (cf. Chap. "Organizational Structure").

Although we proposed the positive effects of formalizing service innovation comprehensively, manufacturers should strive for continuous adaptation of their innovation activities. The ongoing evolution of market requirements calls for dynamic adjustments of the manufacturer's organization.

Finally, formalization ensures the successful execution of service innovation on the one hand. On the other hand, formalized processes should allow for constant process advancement to meet future market needs as well as today's requirements.

7 Summary

The long history of manufacturing companies in innovating hardware products shapes their business logic until today. Changing market requirements and the rise of digital technologies urge the need for new service offerings along with their traditional product portfolio. To adapt to these changes, successful service innovation becomes vital for future business success. However, service innovation requires a new skill set compared to product innovation. As the manufacturer's business logic remains product-driven, their capabilities to innovate new services are still insufficient. For this reason, we provided insights into how practitioners could approach service innovation successfully. We, therefore, discussed the service innovation outcome based on six constituting dimensions. The initial focus on service innovation's result enables the efficient development of new services via three iterative cycles. Each cycle ends with a decision point to ensure sufficient allocation of the firm's resources. Finally, practitioners should identify which factors influence service innovation based on their specific business context to implement a formalized service innovation process tailored to their needs.

Formalizing service innovation is a good starting point to increase the success of future services. This chapter introduced the importance of the service's revenue model in general. The following chapter dives into specific revenue model characteristics and its fruitful design as it is another crucial element of successful service offers.

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