Success Factors in New Service Development: a Literature Review

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New service development (NSD) is a topic of high relevance for decision makers in service firms and manufacturing firms alike. Although there is a substantial amount of literature covering NSD success factors, the numerous publications are fragmented and do not provide a comprehensive overview. This paper identifies the success factors prevalent in literature and classifies them into three categories according to their emergence in the development process: Antecedents, NSD Process Success Factors and Service Success Factors. Furthermore, various influences on success factors are discussed as well as their importance. With this study, we strive to provide a starting point for customization and optimization of NSD in business practice.

1. Introduction

In times of fierce competition, shortening development cycles of new technologies, and more demanding customer expectations, companies are in constant need of new approaches to service design and delivery (Smith et al., 2007). As a result, NSD has not only become an important competitive factor in many industries (Menor et al., 2002), but has also raised the interest of researchers in the fields of innovation management, marketing management and operations management (De Brentani, 1989, Thwaites, 1992, Cooper et al., 1994, Johne and Storey, 1998, Storey and Kelly, 2001, Menor and Roth, 2007). In this paper, the success of NSD is defined by measures which refer to the NSD project itself (for example by measuring its duration or cost), as well as the success of the developed and implemented service, expressed through financial or market factors.

Although the differences among service types are widely recognized (Storey and Hull, 2010), there has been little research concerning the influence of service characteristics on the factors which determine NSD success. The main reason for the difficulties in identifying general principles for managing operations and marketing practices across different service types is the poor knowledge about the diversity of service offerings (Chase and Apte, 2007). It is the objective of this study to provide an overview and categorization of NSD success factors prevalent in previous literature. Since the requirements of service development differ according to various context factors (Storey and Hull, 2010), it is also intended to identify such influential factors. Hereby, we address the following research questions:

- Which success factors were referred to in previous literature for the design and development of services?
- Which influential factors are linked to these success factors?
In this paper, we will first define the service development process and its phases and introduce the categories of success factors which will be used as a framework later on. Subsequently, we will explain our search methodology as well as relevant sample information. Thereafter, we will present the results of the study with the most important success factors and the most frequently mentioned influential factors. In conclusion, our paper finishes by discussing implications for managers, research limitations and suggestions for further research.

2. NSD success factor classification framework

In this section, we present the process of new service development in order to provide a basis for understanding the classification framework for NSD success factors and subsequently introduce the framework itself.

2.1. The NSD process

The process of developing new services can be defined and visualized in process models. These models specify the development phases which have to be completed from the initial idea until the final launch of the service (Bullinger and Schreiner, 2006). Such a NSD process model is shown in Figure 1:

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*Fig. 1: Process Model for the Systematic Development of Services. (Bullinger and Schreiner, 2006)*
In the start phase, new service ideas are generated. These ideas are analyzed in terms of the costs and time required, and the risks involved. The most promising ideas are selected and an assessment of initial business opportunities is performed (Song et al., 2009). Thereafter, the specifications of the new service, i.e. resources required, the service delivery process, market measures, and performance expectations, are defined. After the necessary resources have been allocated to the task, a final test of the service specifications is performed in order to detect possible weaknesses(Bullinger and Schreiner, 2006). If the specifications pass the testing phase, the new service is finally introduced to the marketplace.

### 2.2. Classification framework for NSD success factors

Business processes are defined by the input provided for the process, the process itself, and the output generated from the process. Hence, it seemed appropriate to classify the factors determining the success of the NSD process accordingly.

The impact of a company's strategic measures on its ability to generate new services is not well understood (Froehle et al., 2000). Hence, it was our intent to identify factors which have an effect on NSD, but which originate before the actual start of the development and on a more general, organization-wide basis. We classified such factors as “Antecedents” of service success. The second group, “NSD Process Success Factors”, encompasses all factors which refer to the development process itself, the actions taken, and resources used. These factors are influenced by the antecedents and determine the success of the service being developed. In order to guide actions during the NSD process, it is important to determine which characteristics differentiate a successful service from an unsuccessful one. Hence, our third group of success factors, “Service Success Factors”, is targeted at such characteristics.

Figure 2 provides an overview of the identified categories of NSD success factors and their point of emergence relative to the service development process presented in Section 2.1.

![NSD Success Factor Categories](image-url)
3. Methodology

We conduct a structured literature review of articles covering NSD success factors based on the methodology by David and Han (2004) and modified by Newbert (2007). In order to find a representative sample of studies in an objective way, the search for literature was performed in the SciVerse Science Direct database via the following set of criteria:

- In order to achieve substantive relevance of the search results, it was decided that the title, abstract, or keywords of the article had to contain the term “service development”, or one of the terms which are frequently used as synonyms for NSD: “service innovation” and “service engineering”.

- In order to eliminate substantially irrelevant articles and assure proximity of research subjects the title, abstract or keywords of the articles had to contain phrases which included the term “success”.

- The title, abstract, or keywords of the articles had to contain phrases enacting an influence on success.

- A fourth group of methodological search terms was included in order to ensure the occurrence of empirical data.

- These results were refined to include only published journal articles.

- All results providing the full text of the articles were extracted.

- Unsuitable articles were excluded after screening of titles, abstracts, and full articles.

- Additional studies from the reference lists of the reviewed articles were included if deemed appropriate.

Table 1 provides a list of the keywords used in the search:

<table>
<thead>
<tr>
<th>1\textsuperscript{st} set: Subject-Related Keywords</th>
<th>Service Development</th>
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<tbody>
<tr>
<td></td>
<td>Service Engineering</td>
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<tr>
<td></td>
<td>Service Innovation</td>
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</table>

<table>
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<tr>
<th>2\textsuperscript{nd} set: Success-Related Keywords</th>
<th>Performance</th>
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<td></td>
<td>Efficiency</td>
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<td></td>
<td>Efficacy</td>
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<tr>
<td></td>
<td>Quality</td>
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<td></td>
<td>Result*</td>
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<td></td>
<td>Excellence</td>
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<td></td>
<td>Success</td>
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<tr>
<td></td>
<td>Outcome*</td>
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<td></td>
<td>Output</td>
</tr>
</tbody>
</table>
The search resulted in a total of 48 articles. Table 2 shows the total number of remaining articles after every step:

<table>
<thead>
<tr>
<th>STEP</th>
<th>CRITERION</th>
<th>NUMBER OF RESULTS</th>
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<tbody>
<tr>
<td>1</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; set of keywords</td>
<td>4,213</td>
</tr>
<tr>
<td>2</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; set of keywords</td>
<td>2,128</td>
</tr>
<tr>
<td>3</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; set of keywords</td>
<td>906</td>
</tr>
<tr>
<td>4</td>
<td>4&lt;sup&gt;th&lt;/sup&gt; set of keywords</td>
<td>697</td>
</tr>
<tr>
<td>5</td>
<td>Only journal articles</td>
<td>455</td>
</tr>
<tr>
<td>6</td>
<td>Full article available</td>
<td>297</td>
</tr>
<tr>
<td>7</td>
<td>Titles screened</td>
<td>140</td>
</tr>
<tr>
<td>8</td>
<td>Abstracts screened</td>
<td>57</td>
</tr>
<tr>
<td>9</td>
<td>Full articles screened</td>
<td>40</td>
</tr>
<tr>
<td>10</td>
<td>Relevant articles added</td>
<td>48</td>
</tr>
</tbody>
</table>

The remaining sample of articles was analyzed according to information regarding the origin and focus of literature on NSD success factors.
Figure 3 illustrates the number of articles published per specific journal. A broad range of journals have published articles on the topic of NSD success factors. The journal which published the most articles on this topic is the Journal of Product Innovation Management. We will therefore assess the influence of articles from this journal on the overall results of this study in the discussion of every success factor category.

As previously explained, we ensured that all success factors were empirically confirmed in their respective articles. Hence, qualitative and quantitative studies were considered. Figure 4 presents the respective amount of studies which use qualitative, quantitative or both methods in order to find relevant success factors. Overall, this review contains 8 qualitative and 37 quantitative studies, as well as 3 studies which applied both methods.
Previous literature reviews have mentioned a bias of NSD literature towards the financial services industry (e.g. Johne and Storey, 1998). If one industry played a dominant role in this study it might have a negative influence on the generalization of this reviews’ results. Figure 5 illustrates the industries researched:
Figure 4 demonstrates that the focus is indeed on the financial services industry, which was reviewed in 11 studies. However, we generated a sample covering multiple sectors of the economy, including a block of 15 studies which also reviewed multiple sectors themselves. Hence, we do not expect the industry focus to bias our results.

4. Results

The most frequently mentioned factors will be explained in this section. In order to be able to explain causalities connecting different categories of success factors, they will be presented in reversed order. The success factors which emerged from the study were categorized into three factor families according to their point of occurrence during the process of developing new services. The first category, Antecedents of NSD Success, contains all factors describing pre-conditions in an organization which contribute to a supportive environment for developing services. These factors cannot be influenced during the development process. The second category, NSD Process Success Factors, includes factors which have a positive influence and can be applied and controlled during the process of developing the new service. The third category, Service Success Factors, covers attributes describing a successful service. Due to the fact that these aspects have to be considered and implemented during the development process, they were included in the comprehensive overview of NSD success factors.

4.1. Service Success Factors

A service entails a unique experience between the service provider and service customer. The constellation of features and characteristics inherent in a service offering takes place during its development. Hence, it is important to be aware of certain elements which contribute to the success of a service while designing it. In total, 13 studies identified Service Success Factors. Figure 6 presents an overview of these factors and the number of studies which identified each factor. The most frequently mentioned Service Success Factors are presented in this section.
According to our review, one main contributor to success is a *unique or superior service*. Providing a better or distinctive product can be achieved in various ways such as making it adaptable and updatable to specific and changing customer needs, using innovative technology (Cooper et al., 1994), providing superior quality (Easingwood and Storey, 1993), or offering superior core attributes and supporting services (Melton and Hartline, 2010).

In addition to project synergy, ensuring *product synergy* is another crucial factor for the success of NSD. Successful services fit their designated markets (De Brentani, 1991, De Brentani, 1989) and customers (Cooper and de Brentani, 1991, De Brentani, 2001) and are compatible with the organization’s other products, marketing strategy (Easingwood and Storey, 1993), resources (De Brentani, 1989) and capabilities (Ottenbacher and Harrington, 2010).

*Employee expertise* has been identified as another important factor impacting NSD performance. Service personnel should demonstrate strong behavioral competencies in order to gain the trust of customers (Neu and Brown, 2005). Employees are able to make a difference whenever they are in direct contact with the customer by exuding motivation (Neu and Brown, 2005), friendliness, courtesy, and efficiency (Cooper et al., 1994). Moreover, the ability to understand the customer’s problems and needs is essential in fulfilling their expectations of the service offering. Extensive technological knowledge (Neu and Brown, 2005) might also be required with certain types of services.

*Tangible evidence* was identified as a success factor in two studies. Both of these were published in the Journal of Product Innovation Management (Cooper and de Brentani, 1991, De Brentani, 2001). Tangible evidence is the only factor in this study which is reviewed in detail although it was only addressed in one journal. Since services are intangible, generating tangible cues and a clear product identity to help the customer visualize the offering and thus evaluate its benefits, are crucial for the success of service offerings (De Brentani, 2001).
Service Success Factors may be understood as characteristics of a successful service. The basis for these characteristics is set during the NSD process, where the service system is designed, target markets are determined, and employees are trained.

4.2. NSD Process Success Factors

NSD process success factors influence the effectiveness and efficiency with which the service success factors are implemented. These factors have to be influenced during the development of the service. NSD Process Success Factors are the largest group of success factors and are addressed in 40 of the 48 papers. Figure 7 illustrates the number of studies in which each factor has been mentioned:

Fig. 7: NSD Process Success Factors

Two factors represent the role of employees in NSD, *employee involvement* and *employee expertise*. Employee involvement refers to the participation of front-line employees in the development process. In addition to motivating front-line personnel, it is also crucial to ensure a high level of expertise among the employees conducting the development activities (Blindenbach-Driessen and van den Ende, 2006, Neu and Brown, 2005, Leiponen, 2006, De Brentani, 2001). To foster employee expertise, training measures are conducted to inform employees about the service product and influence their delivery of the new service offering. Moreover, extensive internal marketing is conducted to raise support and enthusiasm for the product (Cooper et al., 1994, De Brentani, 1989, Lievens et al., 1997, Melton and Hartline, 2010, Ordanini and Parasuraman, 2011, Ottenbacher and Harrington, 2010, Song et al., 2009).
Furthermore, the process of NSD needs to have an appropriate level of formalization. While there is evidence that highly formalized development processes make a positive contribution to the speed of a firm’s NSD efforts (Froehle et al., 2000, Buganza and Verganti, 2006, De Brentani, 2001), this does not apply to all development projects. Especially in turbulent environments and for more radical innovations it seems to be advantageous to implement non-formalized approaches, for example by adopting a new process setup for every project and setting less rigid timelines (Storey and Hull, 2010, Blindenbach-Driessen and van den Ende, 2006).

Management measures which promote the success of development projects range from behavioral issues, such as the strong and visible support of innovation (Edgett and Parkinson, 1994) or the display of a risk-taking and innovation friendly attitude (Ko and Lu, 2010), to more concrete measures such as implementing a development committee and a project champion (Blindenbach-Driessen and van den Ende, 2006) or staff evaluation from a customer’s point of view (Ottenbacher and Gnoth, 2005).

Several authors have found a positive impact of customer involvement in various stages of the development process (Cooper and de Brentani, 1991, Magnusson, 2009, Melton and Hartline, 2010, Lin et al., 2010). Especially in the stage of idea generation and screening customer involvement seems to make a significant contribution (Melton and Hartline, 2010, Magnusson, 2009, De Brentani, 1991). Moreover, the participation of customers in the development process seems to have a significant impact on service marketability (De Brentani, 1991), launch preparation (Melton and Hartline, 2010), operational outcomes and innovation volume, but no impact on competitive superiority and sales performance and even a negative impact on the radicalness of innovations (Carbonell et al., 2009).

Market orientation concerns understanding consumer-requirements and desires, as well as taking competitors into account (Cooper et al., 1994, Ottenbacher and Harrington, 2010). Market orientation is especially important for the identification of market opportunities in the process of idea evaluation and the test of already developed concepts (Song et al., 2009). Planning proactively and foreseeing market trends gives companies the ability to act as a first mover, thereby giving them an advantage in market entry (Limpibunterng and Johri, 2009). The processes of information acquisition, diffusion, and utilization associated with market orientation either directly or indirectly influences the likelihood of success for a new service (Van Riel et al., 2004).

The synergy between the development project and its environment also determines the success of NSD. As our review indicates, it is important to ensure a general fit which includes both external (market) and internal (organizational) dimensions. The project should respond to the demands of the marketplace, constituting a response to understanding and operationalizing actual changes in consumer needs (Ottenbacher and Gnoth, 2005, Ottenbacher et al., 2006). Internal synergy entails aligning the various resources of a company (De Brentani, 1991, Cooper et al., 1994, Cooper and de Brentani, 1991) and at the same time, the project must take into account corporate-internal organizational aspects, such as the service delivery system (Cooper and de Brentani, 1991), the marketing mix (Ottenbacher and Gnoth, 2005, Ottenbacher et al., 2006) or the IT system (Bardhan et al., 2007).

Cross-functional involvement is a success factor which has an impact during all stages of the development process: from idea generation to service launch (Avlonitis et
Development teams should consist of members of different functional areas in order to identify potentials and problems as early as possible, thereby avoiding costly and time intensive rework. Although there might be time delays to the project because the entire process becomes more complex, cross-functional work appears to be more efficient and is more likely to achieve customer satisfaction (Froehle et al., 2000). Cross-functional involvement seems to be important in companies which rely heavily on tacit knowledge, where the codification of information is difficult (Storey and Hull, 2010).

The process quality is determined by the emphasis put on the development phases and the assiduousness with which actions within these phases are carried out. This factor is important in all phases from idea generation and analysis to concept development, testing, and launch (Avlonitis et al., 2001).

4.3. Antecedents of NSD success

These success factors refer to general organizational aspects such as corporate culture, structure, and organizational capabilities. A total number of 23 studies mentioned factors which were classified as Antecedents. Figure 8 depicts the number of articles which identified the respective Antecedent as a success factor:

![Fig. 8: Antecedents of NSD Success](image)

*Market orientation* seems to be the most prominent Antecedent of successful NSD. Atuahene-Gima (1996) defines market orientation as the organization-wide collection and dissemination of market information, as well as the organizational responsiveness to that information. Aspects of market orientation include a strong commitment to market research (Easingwood and Storey, 1993), the ability of the service organization to correctly evaluate the competitive environment, and the capacity to anticipate and respond to changing expectations of customers (Menor and Roth, 2008). A high degree of market orientation was stated to have a positive effect on various measures of success, such as the internal innovation-marketing-fit, customer perfor-
mance and the overall project impact (Atuahene-Gima, 1996), as well as the alignment of strategy with a complex market (Neu and Brown, 2005) and financial performance (Lonial et al., 2008). However, there is disagreement regarding the influence of market orientation on the degree of innovativeness of the developed services. While Atuahene-Gima (1996) concludes a negative influence, Ordanini and Parasuraman (2011) suggest that customer orientation fosters radical innovation.

*Technology* as a success factor is characterized by a company’s ability to use technology in developing and delivering services (Neu and Brown, 2005). Innovation and development processes especially benefit from the use of technology when high levels of synergy, usability, and support are achieved (Froehle et al., 2000). For example, by applying more advanced marketing information systems based on the data acquired from their customers, companies are able to create more service innovations to explore potential markets (Lin et al., 2010).

*Knowledge management* is about gathering useful information internally and externally and making it available to the right people in the company. The basis for successful knowledge management is external knowledge sourcing (Leiponen, 2005). In order to ensure an effective diffusion of the knowledge gathered, a free flow of information (Van Riel et al., 2004) and collective ownership of knowledge (Leiponen, 2006) should be promoted.

The organizational *culture* is another important factor. Liu (2009) defines a supportive culture as a construct of complementary dimensions consisting of innovative supportive culture, market orientation culture, learning culture, and customer communication culture. However, de Brentani (2001) describes it as a highly creative and supportive environment created by management. Hence, having the right culture in a company supports essential NSD competencies such as market orientation and customer involvement.

By aligning human resource management to strategic business planning and making it flexible to changing market needs, *strategic HRM* constitutes an important organizational capability (Ottenbacher and Gnoth, 2005). It serves as a prerequisite for the successful creation of project and product synergy with the company’s resources in the latter stages of service development. Furthermore, continuous development of employee expertise fosters the understanding of consumer preferences and improves the technical and managerial skills needed for successful service development (Limpibunterng and Johri, 2009).

### 4.4. Influential factors

Having identified critical success factors for all three categories, it is important to know whether the importance of these factors varies depending on certain external or internal influences. Storey and Hull (2010) stated that it is not possible to use a “one size fits all”-approach when developing services. In order to provide additional information on the influences of NSD and its success factors, we present such influential factors which emerged throughout our study in the next chapter.

Storey and Hull (2010) conducted a useful study which investigated the effect of different organizational *knowledge management strategies* on the process of service development. They state that for firms which rely mainly on personalized information,
where services involve personal interactions and intangible factors, there is an increased need for the formation of cross-functional teams. Moreover, the fuzzy nature of most development projects also calls for a more disciplined approach. In contrast, if information within a company can easily be codified, this calls for an increased automation of processes, resulting in a greater need for investments in technology.

However, there are also determinants impacting the relative importance of NSD success factors which are independent from the service strategy chosen by the organization. De Brentani (2001) explained that with a high degree of innovativeness of the new service, there is the need for the executive management to create a supportive and creative environment for service development, hence alternating the composition of Antecedents for NSD. Avlonitis, Papastathopoulou et al. (2001) elaborated on the influence of innovativeness in the various stages of service development. These authors state that an emphasis on business analysis and marketing helps achieve management expectations when developing incremental innovations, while cross-functional collaboration is especially important for radical innovations. Another consequence of variations in the degree of innovativeness affects the need for formalization of the development process. Highly formalized processes seem to help improving the efficiency in developing incremental innovations and innovations which are new to the company but not to the world (De Brentani, 2001, Froehle et al., 2000, Avlonitis et al., 2001).

Process formalization should be adapted to the turbulence of the market environment. According to Buganza (2006), a highly formalized approach, including predefined activities, phases, and timeframes, is inappropriate for developing products and services in volatile environments. Market turbulence also impacts group collaboration. Such approaches are more likely to be used to coordinate innovation processes in turbulent project environments with low structure and high uncertainty (Bardhan et al., 2007). Furthermore, firms are more likely to involve customers in the development process as perceptions of technological turbulence increase (Carbonell et al., 2009).

5. Conclusion

The aim of this paper was to provide an overview and categorization of NSD success factors prevalent in literature.

The fragmentation of the results indicates that knowledge about the factors responsible for NSD success is limited. From a total of 52 success factors, only 23 were mentioned in more than one study. Even the most frequently mentioned factors of each category were only addressed in a relatively small amount of studies. This justifies our initial intent of providing NSD with a comprehensive overview and structure of factors leading to a high performance of service development projects. The identified factors were classified into three categories according to their emergence in the development process: Antecedents, NSD Process Success Factors and Service Success Factors. However, in different development projects, these factors can vary in relevance, depending on various influential context factors. We described the influential factors mentioned in the studies, reviewed these factors, and highlighted adjustments which should be made to the development process. Hereby, this study adds to
the body of literature stating that applying measures for NSD without taking influential factors into account might not lead to the desired results.

There are numerous areas for further exploration of NSD success factors. There still is a need for investigation of context dependency since not all influential factors and their type of impact are known. Regarding the limited amount of knowledge about the appropriate situational orchestration of success factors, future research should aim at conducting qualitative and quantitative research using heterogeneous samples of companies, thereby paving the way for the development of a comprehensive model linking NSD success factors to influential context factors.

Furthermore, we did not find resilient information about the cost-benefit relations for any of the success factors mentioned. Despite our broad sample of industries some sectors were not covered in this study at all. This indicates that there is a need for further research regarding NSD success factors in the transport and the energy sector, for example. In conclusion, there are still many steps to be taken until managers can be provided with a “toolbox” for service development.

There are certain limitations which have to be considered regarding the results of this work. Many of the identified success factors have only been mentioned in one study. Considering this fact, and taking into account that we do not claim to have included all studies covering the topic of NSD success factors, there is a high likelihood for the existence of additional success factors. The same limitation applies for the context factors mentioned in this study.

References


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