Formalization and Performance in New Service Development: Empirical Findings from German and Swiss Companies

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Abstract

Is there any relationship between the formalization of new service development (NSD) processes and firm performance? And if formalized NSD process and firm performance are correlated, what are the main drivers? The aim of the study is to explore and identify the degree of NSD processes formalization in German and Swiss companies, and to investigate the impact of process formalization on firm performance. This study is based on a large sample of data collected from more than 500 companies across Germany and Switzerland. The result shows that the relationship between formalized NSD process and performance is significant in German and Swiss firms.
1. Introduction

Service businesses are vital to the economies of industrialized nations, as they represent the sector with the highest growth in GDP (Froehle et al., 2000, 3). “It is also affecting the developing world, albeit to a lesser degree” (Paulson, 2006, 18). If we analyze the industrialized nation’s economy sector wise the services represents 70-75 percent of GDP. In addition, service industries play a crucial role in job creations. For instance, in 2009, more than 115,000 jobs were created globally in services activities by IBM alone (IBM Annual Report, 2010, 6). Furthermore, activities are transformed and firms are turning to services in pursuit of value (Zysman et al., 2010, 3). The best example could be IBM, and GE. The attractiveness of the traditional manufacturing is rapidly decreasing. And smart manufacturers are moving down the value chain and creating new business models to capture more profit (Wise & Baumgartner, 1999). “Some firms go further and shifting their core business from selling products towards offering services” (Zysman et al., 2010, 6). For instance, “IBM focuses on business transformation services using knowledge, skills, and resources first to help clients understand their businesses (component by component) and then to help clients transform their business” (Spohere & Maglio, 2008, 238). Drejeris & Zinkevičiūtė (2009), argued that if organizations are to survive and grow it is essential to develop new services. Allmendinger and Ralph (2005), highlighted that any traditional manufacturer in today’s economy that has not awakened to the fact that it must become a service business is in serious peril. For example, IBM, GE, and HP have begun to shift their strategic directions from tangible products to intangible services (Menor & Roth, 2008, 267). Recent rapid technological advancement especially in the information and communication technologies (ICT) has extremely affected the services industry. The transformation of services with ICT tools is dramatic, pervasive, and far-reaching (Zysman et al., 2010). At the same time the technological innovation created new opportunities for service firms and become a challenge for these firms to survive. Furthermore, it is realized that developing new products or services that satisfy customers and developing them fast is extremely important to the survival of many enterprises (Kim & Meiren, 2010, 253). Such as, the interaction among service providers and receivers are now more relying on self-service technologies like web based and mobile platforms. Fast technological development, together with globalization, is rapidly making service offerings obsolete and changing both the product and distribution channels. These factors, in turn, create a constant churning of customer requirements and increasing qualifications for service viability (Froehle et al., 2000, 3).

To cope with all these challenges the service firms should adapt to the innovative ways of developing new services. There are several aspects need to be studied in this regard and formalization of the NSD process is one of them (e.g. see Edwarson et al., 2010). Fähnrich and Meiren pointed out that, beside the fundamental aspects of NSD, the sequence in which certain activities are to be undertaken during the development process is of special interest. Innovation for service firms is as important as for manufacturing firms. And a large number of studies over the last three decades have established a wealth of evidence about what factors affect new product outcomes (de Brentani, 2001). Especially, studies on products attributes and innovative process recieved more attantion (e.g. Cooper & Kleinschmidt, 2007; Shane & Ulrich, 2004; Page, 1993;; Anthony and McKay, 1992). In the services field, it has been comparatively little studied. However, empirical insights on new service devel-
development are not well developed (Froehle & Roth, 2007; Menor & Roth, 2007; Menor et al., 2002). Service management scholar have recognized the importance and necessity for new service development research, especially how the service firms’ offerings and delivery process are compatible with market dynamics (Roth & Menor, 2003; de Jong et al., 2003). Recently several studies have been conducted on NSD, which partially investigate the impact of formalized NSD process on performance. Most of the studies were found in the financial industry (e.g. Menor & Roth, 2008; Cooper et al., 1994; Edgett, 1994; Edgett & Parkinson, 1993; Edgett & Jones, 1991). This research is based on a large sample of diverse service companies in Germany and Switzerland. This paper tries to fill some gap by providing empirical insights into formalized NSD process and firm performance comparatively in Switzerland and Germany.

2. Literature review and hypothesis development

According to a recent empirical study which is also based on dataset used in this study. They found that formalized NSD process has positive impact on performance. However the impact of formalized NSD process has less as compare to other factors such as, service strategy, integrated development team, and customer knowledge development (Edvardsson et al., 2010). Froehle et al. (2000), found that more formalized service development processes contribute directly to the speed of a firm’s new services development efforts. Process formalization routinize certain support activities, systematizes knowledge, and offers sequences of steps that enhance learning about innovation. There is a strong positive relationship between the speed of the NSD process and the general effectiveness of the firm’s NSD efforts. They further says, a formalized process make it possible to reduce miscommunication, eliminate non-value-added activities, and improve project flow. Some antecedents of innovation success are closely related to the NSD process; people, structure, resources and networking. In addition, some external factor that affect the results of the NSD process are, market conditions, knowledge infrastructure and government policy. Therefore, adapting a formal NSD process up-front, during design and during the launch stage can be beneficial for ensuring client fit, speeding up the development process and minimizing errors that can result from haphazardness and poor planning. Furthermore, formalized NSD processes are not only beneficial for the innovative NSD but also can be an important route for success particularly when developing incremental new service offerings. de Brentani (2001), founded that, firms that achieved the best performance for low innovation type projects tended to implement a formal system that include up-front activities, such as early market studies and customer concept evaluations, formal idea screening, and business case analysis. In case of new service design, these companies carefully mapped out alternate processes and service patterns. Menor and Roth (2008), proved in their empirical study of retail banking, that formalized NSD process have positive relationship with performance. More formalized NSD projects planned processes make it possible to develop the right services with fewer delays and the question of low cost is difficult to answer (Edvardsson et al., 1995). Edgett (1994), carried out an empirical research (based on successful and unsuccessful projects) in the UK banks and building societies (saving and loans) he found that compared with unsuccessful projects; the successful projects developed through a development process which became more formal as the
project progressed. Furthermore, the successful projects have a well established idea screening process. In addition, successful NSD have a system in place to ensure that branch staffs are well trained and committed to selling the new service. Therefore formalization is the critical success factor in NSD. Another study was conducted in the same industry which shows that NSD formalization has positive impact on success. Although the impact on success is not strong as compare to other factors; market synergy, organizational factors and market research factors, launch effectiveness, market potential and design testing (Edgett & Parkinson, 1993, 34-35). Similarly, Dolfsma (2004), claims that formalized NSD processes have several benefits.

For the success of NSD projects, a detailed and high quality execution of the stages of NSD process is vital. A construct which consists of the following factors was tested for industrial services. Each factor has importance and plays a role in the success of NSD projects (de Brentani, 1995).

- Design; used detailed “drawing board” approach
- Design; incorporated in-depth market study
- In-depth "financial analysis" preceded design stage
- Concept descriptions customer researched before design
- Design; considered alternative means of rendering service
- Formal "idea screening" used
- Market launch; documented and highly detailed program
- Service fully tested before final launch
- Formal post-launch evaluation procedure used
- Market launch; extensive training of production personnel
- Market launch; formal production (7) vs. word-of-mouth (1)

Stevens and Dimitriadis (2005,176), underlined that understanding the processes through which new services are designed and launched may lead to improve the efficiency of the development process. It could lead to reduce the development time and increase chances for success. Based on an empirical study of Jallat (1992), it has been revealed that the high degree of the development process sophistication had a positive impact on the performance of new services (cited in: Stevens & Dimitriadis, 2005,177). Furthermore, a survey was carried out by Cooper et al. (1994), in the financial sector in Canada to separate very successful new products from moderate performers. They identified that a market driven new product process among others affecting performance. A case study was carried out in national and provincial building societies in the UK, focused on how these societies developed and launched a card-based transaction account in response to competitors providing such a service. The authors attribute the success of the product to a number of factors. An organized development process was one of the success factors in the above factors (Edgett & Jones, 1991).
To measure performance different key indicators were used in different studies. For instance, Storey and Easingwood (1995), measured performance by sales, profitability, and enhanced opportunities. Edvardsson et al. (2010), used cost, sales, customer satisfaction, profitability, market share and innovativeness as key performance indicators. Voss (1992), argues that the performance of service development should be measured at two levels; the performance of the new service itself and the innovation program. The evaluation of performance of the new services should be based on the following questions; 1) Does the service improve financial performance? 2) Did the service make the company more competitive? 3) Was the resource utilization improved? 4) Has the company’s ability to be flexible improved? 5) Did the service improve service quality? And the innovation program needs to be evaluated in terms of effectiveness, speed, and cost.

Based on the above literature the following hypotheses have been developed:

**H1:** A higher degree of formalization of the new service development process has a positive impact on firm’s **service performance**.

**H1.a.** A Higher degree of formalization of the new service development process has positive impact on service **cost**.

**H1.b.** A Higher degree of formalization of the new service development process has positive impact on service **sales**.

**H1.c.** A Higher degree of formalization of the new service development process has positive impact on **customer satisfaction**.

**H1.d.** A Higher degree of formalization of the new service development process has positive impact on **profitability**.

**H1.e.** A Higher degree of formalization of the new service development process has positive impact on **market share**.

**H1.f.** A Higher degree of formalization of the new service development process has positive impact on **innovativeness**.
3. Research Methodology

3.1 Population and Sample

The survey is based on quantitative method. Questionnaire is used as a sole instrument for data collection. Both service and manufacturing sectors were investigated across Germany and Switzerland. The respondents (managers) were asked to answer if they were involved in the new service development process. Furthermore, reminders have been mailed to non-respondents, after four weeks from the initial mailing; which increased the response rate in Switzerland. In total, about 6000 questionnaires were distributed in both countries, out of which 573 responses were received. This represent 9.5% response rate which is enough for this study. The target group includes various firms from both service and manufacturing industry. The typical service firms in the service sector are targeted or participated; banking, insurance, healthcare, tourism, transport, real estate, construction and business service. In the manufacturing industry sector most apparently; engineering and IT are included among others.

3.2 Data Collection

In Germany the data was collected by the Fraunhofer Institute for Industrial Engineering (IAO), Stuttgart. In Switzerland, the data was collected by the Lucerne University of Applied Sciences and Arts. Furthermore, Research Center for Services, Karlstad, Sweden was also a partner institute for this project but the Swedish data is not used for this paper.

3.3 Questionnaire and Components

The questionnaire was developed based on literature review and discussion with experts. In addition, the questionnaire was pre-tested with several companies to avoid any complication in the required questions. The questionnaire is mainly divided into four areas of new service development. These areas are organizational aspects of new service development, new service development process, customer integration into new service development, and performance of new service development. Other preliminary basic questions are also included in the questionnaire such as the size of company, the type of company, experience in the concerned business, nature of business, technological and resources aspect are also covered. In this study only new service development process and performance is the core interest of the authors and will use the data from these sections of the questionnaire and preliminary data as well.

3.4 Analysis

SPSS (software package for social sciences, version 16.0) is used for data analysis. To analyze the data first a factor analysis was carried out to reduce the variables in each construct. The most influential variables have been chosen from each construct.
for further analysis. To do so, the criteria of Eigen values are used. Those variables which have Eigen value higher than 1 has been selected. In most cases in each construct there was only one main component with an Eigen value larger than 1. Furthermore, principal component is used as extract method. To test the hypothesis simple linear regression analysis are carried out. In this case, there are six dependent variables and one main independent variable with three control variables as independent variables. The control variables may have influence on performance. Therefore, six separate linear regression models are run out. In addition, to validate the model multicolinearity test has been performed to check the inter dependency among independent variables. To test multicolinearity, the criteria of condition index is used. The condition index value should be lower than 10 (Gupta, 7-17). The test shows that there is no inter dependency among independent variables in the regression models. In all models the condition index is lower than 10.
4. Results and Discussion

4.1 Hypothesis Testing

To test the research hypotheses, six linear regression models are used comparatively as the results are analyzed one by one. In the first model, cost is dependent variable while the formalized NSD process, technology, resources and innovativeness are the independent variables. R-square value is given in each model to measure the goodness of fit of each model.

Table 1: Linear Regression Model 1

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Switzerland</th>
<th></th>
<th>Germany</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficient</td>
<td>t value</td>
<td>Coefficient</td>
<td>t value</td>
</tr>
<tr>
<td>Formalized NSD process</td>
<td>.070</td>
<td>1.253</td>
<td>.104</td>
<td>1.38</td>
</tr>
<tr>
<td>Technology</td>
<td>.064</td>
<td>1.154</td>
<td>.115</td>
<td>1.49</td>
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<tr>
<td>Resources</td>
<td>-.064</td>
<td>-1.157</td>
<td>.068</td>
<td>.868</td>
</tr>
<tr>
<td>Innovativeness</td>
<td>.084</td>
<td>1.481</td>
<td>-.031</td>
<td>-.395</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>R²</td>
<td>.022</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>R²</td>
<td>.033</td>
</tr>
</tbody>
</table>

Dependent variable: Cost
* Significant at 5% level
** Significant at 10% level

The results of model 1 show that there is no impact of formalized new service development process on the service development cost in both countries. Furthermore, no other variable is significant in the model. So, the hypothesis “H1.a” (NSD process -> costs) is rejected for both Switzerland and Germany.

Table 2: Linear Regression Model 2

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Switzerland</th>
<th></th>
<th>Germany</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficient</td>
<td>t value</td>
<td>Coefficient</td>
<td>t value</td>
</tr>
<tr>
<td>Formalized NSD process</td>
<td>.97**</td>
<td>1.805</td>
<td>.195*</td>
<td>2.77</td>
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<tr>
<td>Technology</td>
<td>.234*</td>
<td>4.352</td>
<td>.143*</td>
<td>1.17</td>
</tr>
<tr>
<td>Resources</td>
<td>-.064</td>
<td>-1.861</td>
<td>3.04*</td>
<td>3.43</td>
</tr>
<tr>
<td>Innovativeness</td>
<td>.109*</td>
<td>1.992</td>
<td>.103</td>
<td>1.41</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>R²</td>
<td>.095</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>R²</td>
<td>.169</td>
</tr>
</tbody>
</table>

R² .95
In model 2, sales is dependent variable and the independent variables are remaining the same as taken in the previous model. For Switzerland, the formalized NSD process is significant at 10% level and the technology is significant at 5% level. Therefore, “H1.b” (NSD process -> sale) is supported for Switzerland with the regression coefficient 0.09 (p< 0.10). However, the regression model explains 9.5% of the variation in service development performance (sales). In case of Germany, the formalized NSD process is significant at 5% level. In addition, the variables; technology and resources are also significant at 5% level. However, the R-squares are low for both models. The reason could be the explanation of the model by other variables like strategy, integrated development team, etc. In conclusion, the “H1.b” (NSD process - > sale) is supported for Germany with regression coefficient 0.19 (p < 0.05).

Table 3: Linear Regression Model 3

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Switzerland</th>
<th>t value</th>
<th>Germany</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formalized NSD process</td>
<td>.060</td>
<td>1.099</td>
<td>.086</td>
<td>1.148</td>
</tr>
<tr>
<td>Technology</td>
<td>.134*</td>
<td>2.462</td>
<td>.065</td>
<td>.847</td>
</tr>
<tr>
<td>Resources</td>
<td>-.129*</td>
<td>-2.353</td>
<td>.074</td>
<td>.954</td>
</tr>
<tr>
<td>Innovativeness</td>
<td>.172*</td>
<td>3.103</td>
<td>.121</td>
<td>1.546</td>
</tr>
</tbody>
</table>

R²  .069   R²  .046

The model 3 was run to test if there is any impact of formalized NSD on customer satisfaction in Switzerland and Germany. However, the technology and resources are significant at 10% level. It shows that formalized NSD process is not significant at all in both countries. Therefore, “H1.c” (NSD process -> customer satisfaction) is rejected for both Switzerland and Germany.
Table 4: Linear Regression Model 4

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Coefficient</th>
<th>t value</th>
<th>Coefficient</th>
<th>t value</th>
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<tr>
<td>Switzerland</td>
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<td>Germany</td>
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</tr>
<tr>
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<td>3.103</td>
<td>.121</td>
<td>1.546</td>
</tr>
</tbody>
</table>

Dependent variable: Profitability
* Significant at 5% level
** Significant at 10% level

The model 4 tested the hypothesis that, high degree of NSD process formalization has a positive impact on firm service profitability. The model shows that formalized NSD is significant at 10% level with the regression coefficient 0.10 (p< 0.10). In case of German firms, it is significant at 5% level with the regression coefficient 0.15 (p< 0.05). So, “H1.d” (NSD process -> profitability) is supported for both countries.

Table 5: Linear Regression Model 5

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Coefficient</th>
<th>t value</th>
<th>Coefficient</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switzerland</td>
<td></td>
<td></td>
<td>Germany</td>
<td></td>
</tr>
<tr>
<td>Formalized NSD process</td>
<td>.052</td>
<td>.940</td>
<td>.198*</td>
<td>2.790</td>
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<tr>
<td>Technology</td>
<td>.235*</td>
<td>2.450</td>
<td>.262*</td>
<td>3.605</td>
</tr>
<tr>
<td>Resources</td>
<td>.038</td>
<td>.686</td>
<td>.107</td>
<td>1.455</td>
</tr>
<tr>
<td>Innovativeness</td>
<td>.185*</td>
<td>3.300</td>
<td>052</td>
<td>.700</td>
</tr>
</tbody>
</table>

Dependent variable: Market Share
* Significant at 5% level
** Significant at 10% level

The result of model 5, shows that the variable, formalized NSD process is not significant in case of Switzerland. However, technology and innovativeness is significant at 5% level. Therefore, “H1.e” (NSD process -> market share) is rejected for Switzerland. For Germany, the formalized NSD process is significant at 5% level with the
regression coefficient 0.19 (p< 0.05). So, “H1.e” (NSD process -> market share) is supported.

Table 6: Linear Regression Model 6

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th>Germany</th>
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<tr>
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<tr>
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<tr>
<td>Resources</td>
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<td>.686</td>
<td>.107</td>
<td>1.455</td>
</tr>
<tr>
<td>Innovativeness</td>
<td>.185*</td>
<td>3.300</td>
<td>.052</td>
<td>.700</td>
</tr>
</tbody>
</table>

| R²            | .079        |            | .151      |

Dependent variable: Innovativeness

*: Significant at 5% level
**: Significant at 10% level

The results of model 6 shows that “H.f” (NSD process -> innovation) is rejected for Switzerland because the formalized NSD process is not significant in Switzerland. It is significant in Germany with the regression coefficient 0.15 (p < 0.05). So, “H.f” is supported in case of Germany.

In conclusion the hypothesis “H1.a” (NSD process -> cost) is rejected for both Switzerland and Germany. “H1.b” (NSD process -> sales) is supported for both Switzerland and Germany. “H1.c” (NSD process -> customer satisfaction) is rejected and null hypothesis is accepted for both countries. “H1.d” (NSD process -> profitability) is supported for both countries. “H1.e” (NSD process -> market share) is rejected for Switzerland and supported for Germany. “H1.f” (NSD process -> innovation) is rejected for Switzerland and supported for Germany. More precisely it is concluded that the formalized NSD processes have a positive impact on service sales, profitability, market share, and innovation in Germany. In Switzerland, formalized NSD processes have a positive impact on sale and profitability. However, the degree of impact is different in both countries. For instance, in Switzerland, sales and profitability are significant at 10% level. In Germany, these variables are significant at 5% level. Furthermore, the goodness of fit of the models are varied in case of each dependent variable in both countries. Generally the R-square is low in all six models. According to Albright (2009), regression in business areas sometimes have 10 % to 20 % R squares. And some variables in business are simply not easy to explain. This does not mean that these regressions are useless. There is still positive impact shown on the variables in the supported hypotheses. This is meaningful in the context of this study and adequate to support the hypotheses of this study. Therefore, the hypotheses are supported even with low R-squares. Beside the formalized NSD process, the other variables have also impact on performance such as technology, innovation,
and resources. These variables are used as a control variable in the regression models.

4.2 General Results and Discussion

The results of the research show that in Germany, 70.3% respondents belong to the service sector, and 29.7% to the industry sector. In Switzerland, 67.8% respondents are from service sector and 29.7% are from the industry sector. On average the respondents have 12.51 years of experience while the German firms have 14.54 years of experience. The sales of German firms on average consist of 22.3% B2C, 65.7% B2B, and 12.5% B2G. The sales of Swiss firms on the other hand divided as; B2C 33.3%, B2B 50%, and B2G 16.6%. Regarding the success rate of new service development projects, on average, 8.86 new projects were conducted in the last three years by the German firms, of which, 5.92 (66.8%) were launched in the market and 5.13 (66.80%) projects were survived during the first year after launch. It is clear from the results that in Germany, about 33% projects failed to launch in the market while about 13% projects failed to survive after the first year of launching. In Switzerland, about 36% projects failed to launch in the market and about 10% projects failed to survive in the market after the first year of launching (see figure 1).

Fig. 1: New service development success rate of projects

It reflects that the failure rate after launching the projects in the market is higher in Germany as compared to Switzerland. In contrast, the failure rate of projects launching is higher in Switzerland than in Germany.

Regarding the size of the firms, the dataset is based on the following categorization.

- 20-99 employees (considered small)
- 100-249 employees (considered medium)
250-999 employees (considered large)

1000+ employees (considered very large)

However, the European Commission categorized as; micro (1-9 employees), small (10-49 employees), medium (50-249 employees), and large (250 and more employees) (European Commission). This study used the categorization of the dataset as mentioned above.

Figure 2 represents the degree of NSD process formalization in the small, medium and large sized firms on likert scale from 1 (not agree) to 10 (agree) in Switzerland and Germany. In Switzerland, the large sized companies have a high degree of process formalization as compared to medium and small sized firms. On the other hand, in Germany, the difference is not on large extent among small, medium, and large size enterprises. However, large sized companies have a high degree of process formalization compared to other groups. But unlike Switzerland, the process formalization in very large sized companies is quite low. One reason could be the small number of large sized companies (1000+ employees) in Switzerland which are only 14 in the dataset. In conclusion, the size of the firms matters for NSD process formalization. It makes sense for small companies to have less formalized NSD process because it required fewer resources and small firms do not have much resources. In general, the NSD process is not highly formalized as shown in the figure 2.

In Switzerland, the formalized NSD process has only positive impact on sales and profitability. While the rest of the factors are insignificant. One reason could be the high numbers of small sized enterprises. Figure 3 show that there are only 14 large sized (1000+ employees) companies compared to 183 small sized companies (20-99 employees) in the sample. As shown in figure 19 the degree of NSD process formalization is very low in small size enterprises. So the influence of NSD formalization on performance seems less in the Swiss companies. The reason why small firms have less process formalization? Because small sized firms don’t have the capacity and
outsourcing more. In contrast, in large and medium-sized companies’ production may take place totally inside. Especially it is true for medium-sized companies. Sometimes large-sized companies outsource on high level because large-sized companies need more specialization.

Taking into account the results, it is found that service firms are doing an incomplete job of managing NSD process. The results are given in the figure 4 as it represents the average only. Figure 4 shows that no development step has considered on average 100% (10 on likert scale) important for the service enterprises. Especially the concept development and test phases are receiving less attention as compared to other
steps. Even though, these are the most important steps in the NSD process. The importance of these steps is nearly the same in both the countries.

Furthermore, figure 5 show that the time devotion (in %, 100% in total) to each development phases in both countries without consideration other factors. Overall time devotion to “test” phase in both countries is quite low as compared to other phases. On the other hand “concept development” phase receive more time for development in both nations. However, the percentage of time devotion to each phase varies among Swiss and German firms. For instance, the Swiss firms devote more time to idea generation and evaluation phase, business analysis phase, and test phase. The German firms devote more time to concept development phase, implementation and test phase. It is noticeable that the development process of each individual firm is different.

![Time devotion to each step in percent](image)

Fig. 5: Time devotion to each step in the NSD process

5. Managerial Implications and Recommendations

This empirical study on new service development process and performance has highlighted that formalized NSD processes have a positive impact on firm performance. Specifically, the relationship between formalized NSD process and performance is significant in both the countries. In Switzerland, it is significant in case of sales and profitability. In Germany, it is significant for sales, profitability, market share and innovation. Nevertheless, additional research on the question, why sales, market share and customer satisfaction is influenced by formalized NSD process is needed. Particularly, in each service industry such as in financial, tourism, health, etc.

First, the research shows that formalized NSD process influence service development performance. The service firms can increase service development performance
by implementing formalized NSD process or improving the existing new service development process. To achieve better results in future studies, other factors could also be used along with formalized NSD process such as resources, technology, etc.

The service firms should focus on each single step in the development process, especially on the concept development and testing phase. Because these phases have great importance while these are given little attention in both countries.

Those managers who are facing high failure rate of new service development projects, should review their development process for improvements and should provide adequate resources & time for the NSD process.

This study will be meaningful if the lessons learned from this research are applied to the broader sector of service industries by the service development managers in their own way.

The service development managers should account the selection or creating a perfect NSD process model in their own context. Besides, the formalized NSD process, models, use and selection of process modeling software is extremely important because of several benefits.

There are some questions left unanswered. For example, which model is best fit to specific service industry? A more intensive investigation on formalized NSD processes and performance in each service industry is desirable. The influence of formalized NSD process on firm performance could be different among service industries across Switzerland and Germany.


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