

# New services development (NSD) in higher education: a QCA analysis

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## **Abstract (043-0421)**

The purpose of this study is to analyze which resource combinations are used in the development of new services (NSD) in higher education. Through the use of qualitative comparative analysis (QCA), it was noticed that the formal routines are not being considered in practice, despite being a issue in theory.

**Keywords:** New Service Development (NSD), Qualitative Comparative Analysis (QCA), Services.

## **Introduction**

The aim of this article is to analyze the combination of resources, processes and mechanisms used by Brazilian business schools to launch post-graduation (lato sensu) courses.

This study was based on concepts, typologies and classifications found in literature about new service development (NSD) specifically in the operational area, but in service and marketing areas as well.

Since the 1980s and, more recently, qualitative works have been requested in the field of operations (Csillag et al. 2012, Barratt et.al 2011, Eisenhardt and Gradner 2007, Fiss 2007, Menor and Roth 2008 and Boyer et al. 2005).

Following the above-mentioned trend, the present work has adopted the qualitative comparative analysis methodology (QCA), Ragin 1987. For that matter, business schools in Brazil were chosen upon their representativity in the sector (sources: sector rankings such as Você S/A magazine and UOL corporation).

The service sector holds a great stake in global GDP and in certain countries, it has become the largest in terms of economic participation and employment generation.

Academic research and works in the service sector (De Vries, 2006). However, when it comes to operational management of services with a focus on *development of new services - NSD*, we find fewer studies (Meyer and De Toro 1999; Nie and Kellogg 1999; Sundo 1998, Froehle et al. 2000, Froehle and Roth 2007).

The combination of resources and processes, developed in theoretical frameworks of the operational field has proven to be relevant in the development of new services in the educational sector of executive courses in Brazil.

The present study validates the theoretical framework. However, it also shows possible combinations of resources and processes which deserve further attention in order to improve the theoretical reference of the matter and to shed light on management practices.

The educational sector has been in evidence in developing economies. Particularly in Brazil, we can observe an increased interest in this topic due to the significant impact of education on the growth and competitiveness of the country.

Studies have shown that the quality of teaching in Brazil, throughout all levels of education, remains below international standards. Brazil is ranked 88 among 147 assessed countries, in the Unesco educational ranking (Unesco, 2011).

Moreover, given the ever-increasing competitiveness, diverse consumer demands and shorter product life-cycles, companies have been faced with the need to launch new services and expand their portfolios (Menor and Roth, 2008, Fitzsimmons and Fitzsimmons, 2007, Roth and Menor 2003, De Jong et al 2003, Tidd e Hull 2003).

The aim of this study is to analyze the way in which Business Schools in Brazil manage the process of new service development (NSD), more specifically, post-graduation courses, using the theoretical framework of performance in development of new services (Menor and Roth, 2008).

Research Question: "What combinations of resources and processes within the SEI academic sectors in Brazil are used in the development of new executive education courses, post-graduation modality *Lato Sensu*?"

### **Context of the study**

The Brazilian educational system is basically divided into two levels: elementary education and higher education. Higher education is subdivided into three segments: graduation, lato sensu post-graduation (specialization) and strictu sensu post-graduation (masters and doctorates).

This work is focused on the lato sensu post-graduation, more specifically courses for business areas which are not submitted to regular auditing by Brazilian education authorities, and as higher education institutions are solely responsible for offering and managing courses, information regarding this specific sector is scattered. As, in theory, any accredited educational institute that offers degrees related to business administration areas (as well as correlated areas) can offer lato sensu post-graduation courses, there is no precise data as to the amount of courses available or number of students enrolled in this segment. According to AMBA (Association of MBAs) merely 25 MBA courses are accredited in Brazil and no more than eight educational institutions are certified.

While in Europe and the USA an MBA is thought of as a master's degree, with a course load of over 500 hours, in Brazil, the Ministry of Education considers the MBA a *lato sensu* degree, thus tremendously expanding the possibilities for schools to offer these degrees.

### **Theoretical Account**

With a view to analyzing the operational resources and processes in the development of new services, the established theoretical foundation is contextualized in the present, a time in which the relevance of operational aspects involved in NSD is paramount. Four aspects determined the choice of the theoretical framework:

### **Service Sector**

Research into the field of services, specially service management, started in the 1980s. Parasuraman, Zeithaml and Berry (1985;1988) produced one of the pioneer works discussing the difficulties in measuring and defining Quality in Services (Takeuchi and Quelch, 1983). They also remarked the complexity involved in understanding the quality of services while relying on quality of products as a reference. In their view, most services cannot be counted, measured, determined, tested and verified at the time of sale in order to ensure their quality.

### **NSD Background**

In a study on the history for effective development of new services, Froehle, Roth, Chase and Voss (2000) found results for the service area in a research on American multi-industry which were rather similar to the results found in manufacturing.

Such results indicate that: a) **structured cross-functional teams** directly influence the effectiveness of development of new services in the company; b) **formal NSD processes** affect the ability of the firm to develop new services, indirectly, when NSD gains speed; c) IT choices directly expedite the NSD process and the general effectiveness of the firm activities in NSD.

The most significant conclusions are found in IT choices and NSD speed, as well as in the formalization of processes meant for services.

### **New Service Development (NSD)**

Given the fact that the services sector is experiencing a phase of high competitiveness, understanding the way in which services are developed and launched becomes an important factor for the competitiveness and growth of this industry (Menor and Roth, 2008; Roth 2007, Craig M. Froehle, Aleda V. Roth, Richard B. Chase and Christopher A. 2000, Fitzsimmons and Fitzsimmons 1999).

An analysis of preliminary studies (Miller, 1986) points to a strategic configuration known as *innovative differentiator*. Corporations that embrace strategic innovation are characterized by an internal open, informal and intensely collaborative communication system. These corporations also display an internal organizational structure that allows them to adapt to sharp changes in the market, thus enabling them to rapidly launch new products and services.

When taking into consideration the speed and efficiency of the services development process, initial research points toward two impacting options in the

conception of new products: 1) **the design of the NSD process** (Craig M. Froehle, Aleda V. Roth, Richard B. Chase and Christopher A. 2000, Edvardsson, Haglund, and Mattsson 1995; Scheuing and Johnson 1989; Terrill 1992; Voss et al. 1992) and 2) the organizational structure of the business (Craig M. Froehle, Aleda V. Roth, Richard B. Chase and Christopher A. 2000, Olson, Walker, and Ruekert 1995; Terrill 1992).

In a case-study based research, Meyer and DeToro (1999) developed a framework for NSD and founded it on three critical elements: a) multi-disciplinary teams, b) highly specified processes and c) use of IT systems.

### **Resource-Process Framework (RPF) for New Service Development**

Recent research demonstrates that competition and constant market changes compel businesses to rapidly develop new offers. Service companies design their strategies with a view to innovate and elaborate the launch of new services more effectively (De Brentani 1989, Voss et al. 1992, Gallouj and Weinstein 1997, Fine 2000, Carillo 2005, Roth and Froehle, 2007).

Studies related to NSD have shown that organizational, technological and internal process choices have strategically influenced the ability to rapidly and effectively develop new services in the surveyed (studied) companies (Menor and Roth, 2008, Froehle et al. 2000). Other elements have also been important in this process.

Froehle and Roth, 2007, propose the **RPF** model (resource-process framework) for the development of new services. It is based on two main aspects: **resources** destined to the development of new services and the **practices used**. Practices related to resources are subdivided into: intellectual resources (human), organizational resources (planning and management structures) and physical resources (infra-structure). Practices related to the process of new services development are subdivided into four aspects: new service design, analysis, development and launch.

The model proposed by Froehle and Roth, 2007 points to a list of 45 constructs related to the process of development of new services. The proposed constructs served as a foundation for the present empiric work conducted with Brazilian business schools, as well as for the formulation of questionnaires and research during the data collection phase.

In order to conduct research and elaborate collection instruments, the constructs shown in the table were adapted to the educational context, i.e. post-graduation courses. The adaptation was based on a discussion of the author with four experienced post-graduation course coordinators (over 4 years of practice in the field) (Wilson and Volsky, 1997)

Froehle and Roth, 2007, also suggest that the most feasible way in which to analyze how this model works in practice is to examine **combination possibilities** for practices, processes and resources used by organizations in the development of new services. This combination is far more interesting to understand than if considering one construct at a time.

The grouping of these factors is also the key element for the methodology employed in the present work: qualitative comparative analysis (QCA), Ragin, 1987, which will be detailed further ahead.

### **Competency in New Service Development**

A well succeeded development of new services results from the construction of competencies based on resources and routine focused on the management of this process (Menor and Roth, 2008). In the framework created by Menor and Roth, 2008, competence is a multi-dimensional, second-order latent construct, represented by a system of four complimentary and interrelated dimensions: (1) formalized process for the development of new services; (2) market acuity, (3) a strategy for the development of new services and (4) use and experience of IT.

The NSD competence model developed by Menor and Roth, 2008, is based on initial research on operations strategy in services (Menor et al. 2001, Soteriou and Zenios 1999, Roth and Jackson, 1995). In particular, the work of Roth and Jackson, from 1995 approached a new services management strategy, the triad: “*the operations capabilities-service quality-performance (C-SQ-P)*”.

The present study is one of the first to analyze the impact of information technology and marketing acuity on the performance of service management.

The NSD competency model was also based on RBV concepts (resource-based view), (Barney, 1991).

Examining company resources may clarify the performance variances among them. Unique and imitable resources elucidate the heterogeneity of firms (Barney, 1991).

### **Framework Constructs**

#### **Competency in NSD**

Competency in NSD reflects a system that allows the construction of interrelated practices, processes and routines which influence the firm’s ability to develop new services (Menor and Roth, 2008).

#### **NSD Process focus**

The NSD process is described as the availability and use of systematic and formalized practices and routines within the company, leading to the process of innovation and development of new services. (Johnson et al. 1999, Froehle et al. 2000, Stevens and Dimitriadis, 2005, Menor and Roth, 2008).

#### **NSD Market Acuity**

The construct of market acuity is described as the ability of the service firm to clearly perceive the competitive environment in which it operates so that it can meet client demands ahead of time (Froehle and Roth, 2003). This is an important ability, as it encourages the firm to constantly seek market information, thus enabling it to better understand not only the demands of clients but also the initiatives of competitors.

#### **NSD Strategy**

NSD strategy is associated to the strategic efforts on the part of the firm to develop new services and to the degree to which such efforts are aligned with the firm’s global strategy.

The strategy should also be concentrated on the understanding of market demands.

### **NSD TI Experience**

This construct is related to the use of information technology as a facilitator of development activities of new services (Menor and Roth, 2008).

The use of IT allows creating services more aligned with customers demands. Experience IT represents a system or a tool that makes the expertise of NSD possible thanks to the improvement of information processing (Menor and Roth 2008, Froehle and Roth 2007, Froehle et al. 2000).

### **Research Methodology**

The use of empirical studies is emerging in the operational sector (Csillag et al. 2012, Barratt, Choi and Li, 2011, Roth, 2007).

The present work adopts the qualitative comparative analysis, QCA, (Ragin, 1987) which allows for an association between theory and qualitatively obtained data. A comparative analysis was conducted through multiple case studies.

For that purpose, 14 brazilian business schools were selected (Eisenhardt 1989): FGV/EAESP, FGV-BI-CPS, IBMEC-RJ, IBMEC-BH, IBMEC-DF, IBMEC-CPS, IBTA-SP, IBTA-SJC, Metrocamp, FAAP-SJC, Mackenzie-SP, Unisal-CPS and ANHANGUERA (FAC 1 and FAC 3).

Data was collected from the academic departments of these schools through interviews with business unit managers, course coordinators and executive directors.

### **QCA Methodology**

The qualitative comparative analysis (QCA) was introduced by Charles Ragin in 1987 as a data analysis method consisting of binary variables. In the present work we used data analysis with the Crisp-Set methodology, via fsQCA 2.0 software (Ragin, 2008; Rihoux & Ragin, 2009; Ragin et al, 2006).

This method can be considered as a link between qualitative and quantitative perspectives of research (Ragin,1987). Nonetheless, the greatest contribution of QCA is to identify situations where we can find (1) complex casuality, (2) assimetrical casuality, (3) non-linear relations, (4) equifinality and (5) multi-finality.

Based on Boolean algebras, this method allows for a streamlining of variables to fit the needs of the theme, **new service development, NSD**. This new prospect enables operational management to identify relevant characteristics and combinations which should be examined from an extensive list (45 constructs) of resources and processes, RPF framework and NSD competence model (Froehle and Roth, 2007 and Menor and Roth, 2008) for the development of new services.

### **Selection of Superior Educational Institutions (SEI)**

The SEI selection process initiated with the designation of relevant institutions located in capital cities: São Paulo, Rio de Janeiro, Belo Horizonte and Brasília. We also added cities displaying great number of executives and post-graduation courses such as the city of Campinas, considered a technological pole and São José dos Campos, where significant industrial and technological activity is found.

### **Collecting Data – Process of gathering qualitative information at selected companies**

This work is founded on data obtained through semi-structured surveys conducted with SEI managers, particularly executive post-graduation course coordinators and whenever possible, with SEI general directors.

The constant comparison method (Patton, 1990) was elected for interview analysis in this study.

Glaser and Strauss (cited in Lincoln and Guba, 1985 pg. 339) recommend specific strategies to achieve reliability. They suggest the use of negative cases, pair “debriefing”, extended and persistent observation, construction of audit “trails” and corroboration from other experts (Lincoln and Guba, 1985).

Complying with the proposed method, the stages were as follows:

Initially there were thorough interviews with seasoned managers (over four years in the segment) about the conduction of post-graduation programs (executive education courses). Preliminary notes, records and observations resulted from these meetings.

An open question form was used in the interviews, based on the study of NSD-related constructs, RPF framework, Roth and Menor, 2003, and on the performance model in new service development (Menor and Roth, 2008).

These four interviews helped to improve and adapt the questionnaire into a more directed and punctual instrument, thus allowing to identify the presence of technical factors examined within the surveyed SEI. (Lincoln and Guba, 1985).

The survey tool adopted after that was a questionnaire featuring direct questions with binary answers, yes or no (Wilson e Vlosky, 1997).

All four managers taking part in the survey assessed and answered the questionnaire.

The answers to this second tool were compared to the answers from the initial questionnaire and all items were listed on an excel spreadsheet (“*constant comparison method*”, Lincoln and Guba, 1985).

The excel sheet was created taking the Crisp-set QCA method into consideration, therefore displaying binary answers, between 0 (zero) does not present the evaluated construct or 1 (one) presents the construct.

In this first stage, 20 SEI managers were surveyed.

Through the answers of the survey instrument, 24 evaluated items were identified, according to the applied instrument.

In certain institutions, more than one manager was interviewed, which allowed for the confrontation of the answers and perceptions on each evaluated item (Patton, 1990).

Whenever divergence was found in the answers, on any given item, data were re-assessed and a new interview was conducted to confirm the answers.

This kind of re-assessment was necessary in three SEI.

Once the confirmation phase, which involved field work, was concluded, data were compiled and the final list displaying the SEI and related information was determined.

In this stage too, items were identified with the research variables, involving all five constructs as well as codifications, thus enabling importation into the fsQCA 2.0 software. The following variables were employed:

List of constructs (NSD performance framework, Menor and Roth, 2008) and codifications to be imported into software

1. NSD Process focus, codified as **ProcFocus**;

2. NSD Market Acuity, codified as **MarkAcui**;
3. NSD Strategy, codified as **Strategy**;
4. NSD IT Experience, codified as **ITExperie**;
5. NSD Competitiveness, codified as **Competv**.

The final stage was the preparation of the table. This table was the base for importation into the fsQCA, 2.0 software.

## **Conclusion**

When testing the Menor and Roth (2008) competence and performance model, it was possible to analyze the combination of resources and processes available in Brazilian schools for the development of new services, particularly *lato sensu* post-graduate courses.

This study corroborates results shown in other works and expands the possibilities of generalization of empirical research on the theme of NSD (Menor and Roth, 2008, Roth, 2000, Menor et. al 2001:2002, Alam et. al 2002).

Findings demonstrate that the existence of formal NSD processes, market acuity, NSD strategy and IT experience enable the achievement of competitiveness in new service development, according to empirical studies conducted in developed countries.

In spite of the contradictory cases found throughout the analysis, the model of NSD competence and performance supports competitiveness in **67% of the positive cases studied (which present the competitiveness dimension)**.

## **Limitations and Future Research**

The study was conducted through the use of in-depth interviews in a sampling of companies from the educational field, which leaves little room for generalizations. The framework ought to be tested on other additional samplings within different segments of the service area.

Further study may be able to test the framework using quantitative research in the Brazilian context as well as in other countries.

An additional relevant detail is found in the cross-sectional character of this study, which might have produced biased results. In order to minimize such effect, respondents were identified and their contact details and collected data were preserved, for eventual complementary analysis (Alam and Perry 2002).

Longitudinal studies can be conducted in the educational field or in different service areas for the advancement of the new service development theories.

Due to the unavailability of data, the effective NSD dimension (financial performance) could not be examined in the researched SEI.

Future research may shed light on the relationship between NSD competence and financial performance, as suggested by the authors of the framework in question (Menor and Roth, 2008).

Finally, it is worth emphasizing the need for further research into consumer influence on new service development. In their work on NSD in the financial market, Alam and Perry, 2002, already signaled the importance of this analysis. Nearly a decade later, Menor and Roth, 2008, continue to point the need for such studies.



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