

Looking for the Locus of Innovation in New Service Development

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Abstract

Although services are the main growth engine in modern economies, there is evidence that new service development practices are ineffective. In this exploratory study, we look at the organizational roles that participate in the different stages of service innovation. We expect to find multiple roles in the creation, development and deployment of innovation in services. We suggest that this fuzziness of the locus of innovation may explain some of the difficulties in service innovation.

We interviewed six senior executives in European service organizations about their recent major innovations. The data on twenty five innovations, support our main expectation that service innovation involves many organizational roles and typically aggregates more functions as the innovation process progresses. We find also that customers and customer facing functions are not central to innovation, that R&D and Business Development do not create but mostly develop innovations, and that top executives participate in the creation of new services and processes.

1. Introduction

Most growth in modern economies is in services – the US service sectors grew from 50% to 80% of the total employment during the last half century [1]; in OECD countries, about two-thirds of business sector growth between 1985 and 1997 was in services [2]. Growth, in particular organic growth, involves innovation at different levels, from style changes and improvements, to service line extensions, new services for existing markets, and culminating with major innovations of fundamental new services for new markets [3]. Indeed, about one third of European companies reported the introduction of new services or methods between 1994 and 1996; these include a quarter of transport companies, half of financial

services firms and about two thirds of computer services businesses [2].

However, there is evidence that the importance of service innovation is not matched by the sophistication of new service development practices and methodologies, in contrast with the variety and sophistication of methodologies for new product development. Much of the research about new service development is critical of current practices; Johnes and Storey [4] in a comprehensive survey of the literature present the evidence under six labels:

- Corporate environment – many service organizations lack appropriate development competencies, structures and formal procedures.
- Process – many techniques borrowed from new product development are inappropriate and when carried out, they are performed less proficiently.
- People – lack of skilled development staff, and failure to involve service personnel and customers are common.
- Analysis – ease of copying on the one hand, and the difficulty to articulate to customers new services on the other hand, result in inadequate market research.
- Development – the literature is not critical of current practices; however there has been little empirical research in the area.
- Implementation – reasonable practices of launching new services are reported; however, market testing seems to be lacking.

The research evidence is consistent with practices as described by the latest editions of service management textbooks. Fitzsimmons and Fitzsimmons [1], Lovelock and Writz [3], and Sampson [5] dedicate little space for new service development and describe straightforward processes based on common marketing and operations ideas. Minor innovations are treated as blueprints for innovating service process [6]. These maps are used to create variations of a service by changing the level of customer contact, service complexity, personnel discretion and technology support. Furthermore, there

is little systematic treatment of major service innovations beyond the discussion of service strategy and past examples of such innovations.

Exacerbating the weakness of service innovation practices is the current change in the nature of innovation itself. Globalization, in particular the emergence of India and China, as well as new pervasive technological platforms – the internet and mobile telephony – influence the types and practices of innovation. Recent studies found that *business model innovation* is considered central by CEOs of large companies [7], and that over half of European services firms focus their innovation efforts on *organizational change* [2]. Business model innovation [11], also labeled as either strategic or demand innovation [12], reveals new types of demand and adapts to supply them. A recent example is Skype’s business model which is the opposite of the traditional telecom model that maximizes average revenue per user. Skype makes little money per user because it has no cost per user, however, it tries to maximize the number of users [13]. Organizational innovation is the change of organizational structures and processes aimed at reducing costs, increasing performance and possibly allowing for introduction of new services. This type of innovation is related to operational innovation [14] as exemplified by Wal-Mart’s “cross-docking”; goods are moved from suppliers’ trucks directly to trucks heading to Wal-Mart’s stores, without unpacking at distribution centers.

As for new practices, it has been found that wide *internal collaboration* as well as *external collaboration* with business partners and customers is critical to innovation in the new open environment [8], [9], [7]. A good example of collaboration for innovation is P&G’s Connect & Develop policy [15]. P&G has built collaboration networks with suppliers, scientists and entrepreneurs to source ideas, technologies, packages and products that in turn can be improved, scaled up, and marketed. It launched more than a hundred new products during the last two years resulting from these collaborative innovation processes.

This exploratory, small scale, study considers innovation in service organizations by looking for the functional roles involved in the innovation process. We posit that identifying these roles would help in understanding the challenges of new service development in the current changing innovation environment.

The paper continues by explaining the research question, our motivation and theoretical expectations (Section 2), description of the method and data

(Section 3 and the Appendix), analysis (Section 4) and discussion (Section 5).

2. Research question and theoretical expectations

Our aim in this research is simply to identify the organizational functions responsible for the ideation, development and deployment of service innovation. Our motivation is twofold: Firstly, given the underdeveloped nature of new service development practices, in particular the lack of formal structures and procedures in many organizations, it would be useful to identify the de-facto functions that are responsible for the various innovation stages. Understanding the organizational flow of innovation would help in developing appropriate structures and processes for service innovation. Secondly, the expansion of the innovation agenda weakens the existing structures and processes that are meant to support innovation. Understanding how relatively new types and techniques of innovation are implemented would help to understand if new structures and procedures are needed, and if so allow to start defining them¹.

Table 1. Innovation stage / process mapping

Innovation stages	New service development process
A. Generate	1. Formulation of new service objectives and strategy 2. Idea generation
B. Develop	3. Idea screening 4. Concept development 5. Concept testing 6. Business analysis 7. Project authorization 8. Service design and testing 9. Process and systems design and testing 10. Marketing and program design and testing
C. Deploy	11. Personnel training 12. Service testing & pilot run 13. Test marketing 14. Full-scale launch 15. Post-launch

¹ An additional motivation, for the investigators affiliated with IBM Research, is the realization that the traditional locus of innovation, namely R&D, is not sufficient for organizations, like IBM, that add new services to their products.

Although this is an exploratory study, previous research on related questions allows us to form initial theoretical expectations. The detailed process for new service development as suggested (normatively) by Scheuing and Johnson [10] aims at the design of both the service and delivery process, and assumes the involvement of service personnel and customers. Given the contingent and exploratory nature of the research question we propose a simplified innovation life-activity model (generate, develop, deploy) for characterizing the trajectory of an innovation in an organization, grouping the fifteen steps of the new service development process under three main innovation stages as summarized in table 1.

Scheuing and Johnson [10] expect Marketing to take part in the Generate steps, while Customer contact personnel, Operation personnel and a Budgeting function take part in the Develop steps; all personnel as well as Users are expected to perform the Deploy steps. Indirect empirical support for the expectation that a variety of organizational functions take significant part in innovation comes for the Second European Community Innovation Survey (1994-1996) as analyzed for service sectors by Howells and Tether [2]. Innovation costs as reported by the participating companies in five sectors: transport, wholesale, financial, technical and computers, included the following: R&D, both internal and acquired, ranged from 10% of total innovation investment in the transport sector to 40% for computer services, machinery and other externally purchased technologies ranged from 25% in computer services to 60% in transport, training related to innovation investment was about 10% in all sectors, and innovation related marketing investment was less than 10% in all sectors. In addition to the prediction derived from Scheuing and Johnson [10], we expect that internal and external collaboration to influence innovation activities. Thus, it is likely that in addition to the Marketing function, Customer contact personnel and Customers will take part in the Generate steps.

Table 2. Theoretical expectations

Generate	Marketing, Customer contact, Customers, Business Partners
Develop	Customer contact, Operations, Budgeting
Deploy	All personnel, Customers, Business Partners

3. Method and data

In order to start exploring the locus of service innovation, we approached six senior executives in European service organizations and asked each to consider the five most valuable innovations in the company in the past three years. For each innovation we asked for a brief description, classification, estimate of impact and a list the major organizational functions that were relevant for each innovation stage. Preparatory materials were provided to interviewees including the research description and a questionnaire instrument available in an on-line format; one participant chose to complete the questionnaire on-line after an extended face to face meeting. All interviews were conducted in person, usually on the organization's premises; one exception was an interview conducted by phone. Interviews typically lasted an hour, with the questionnaire given to the respondent as reference and filled by the interviewing author.

The questionnaire included the following definition of innovation, influenced by the recent surveys of innovation activities [7], [2]: "The use of new ideas, or current thinking applied in fundamentally different ways, that result in significant change. We take a broad view of innovation, going beyond invention and technical innovation to cover innovation in all aspects of an organization and its strategic agenda, including: Products, Services and Markets; Business and Enterprise Models; and Operations/Processes".

Innovations were classified by their impact, value and type. Following the recent literature about innovation ([2], [7], [8], [9]) value could be classified as Growth, Cost saving, Differentiation, Closing gaps with the competition, or Other. Innovation types were classified as: Business model, New services, Process (operations), Organizational innovation, Channels or customers, and Other.

The question about organizational roles included the following text as examples: "Functions such as: CEO; CIO; CTO; CFO; GM; R&D; Chief Marketing Officer (CMO); Human Capital; Administration". And the stages of innovation offered were Generate, Develop, and Deploy as previously presented. The full questionnaire is available at the following URL: <http://mis.ucd.ie/research/ServiceInnovation/InnovationLocusQuestionnaire>

Interviews with informants were loosely structured around the organization of the questionnaire, and although the completion of the questionnaire instrument was central to the interview, informants provided additional contextual detail. In the current study, these accounts of the functions and processes bound up in the described innovations are used simply to map idiosyncratic organizational functions into

standard terminology. However, this rich data may be drawn on in the future to further develop this line of enquiry.

The summary of data as recorded in the questionnaires – the post interview summary – is presented in the Appendix. The descriptions of the actual innovations are omitted because of commercial confidentiality. For the organizational roles, we use a plus sign (+) to denote repeating roles; namely that roles participated in the previous stage (eg, Generate) are included in the current stage (eg, Develop).

The following is a summary of the organizations, respondents and innovations:

1) A large mobile telephony operator; we interviewed the Chief Technology Officer who identified five new services that created either growth or differentiation. Most were adaptations of external technologies or services to the local market.

2) An international leader in a specific software service/product area; the respondent was the Services Director. Two process innovations that helped differentiation and one new service that closed a gap with the competition were identified.

3) A local leader in software service provision; we interviewed the Managing Director who identified two new services, one channel innovation, and two process changes.

4) A local subsidiary of a large international investment bank. We interviewed together the Manager of IT Development and the Head of R&D. They described three process, cost saving innovations, but could not identify other types of innovations.

5) A market leader insurance company; the respondent was the Chief Innovation Officer. He identified a balanced set of four innovations: an organizational change, a channel innovation, a new offering and an internal process innovation. Growth, differentiation and cost savings were all represented in this set.

6) A medium size bank; we interviewed a senior Strategy Officer who described two process innovations and three new services. These covered growth, differentiation and cost savings.

Although this is a small sample that does not cover the full diversity of the service sectors, the six organizations represent both technological and financial services aimed at business customers as well as the mass market. Four of the organizations are large corporations with millions of customers and tens of thousands of employees. Overall, we recorded twenty five innovations, including new and improved services,

and improved processes. Only one innovation was described as organizational change; none was a new business model.

4. Analysis

Cross organisational research presents the researcher with challenges of comparability of findings, in particular the interpretation of concepts and definitions and equivalence of organisational roles and divisional activities. This problem was anticipated and accounted for by pre-figuring typical roles in the text of the questionnaire, but we nonetheless had to deal with each organization’s idiosyncratic structures, roles and responsibilities.

Table 3. Mapping roles from field data

Roles and titles from field data	Mapped role
Customers, External consultants	Customer
Customer support Customer services	Customer Contact
CTO, CEO, MD, Chairman, Strategy	Top Executives
Marketing	Marketing
Sales	Sales
Business development, Proposition team	BD
R&D, Systems Engineering (NSD) Technology	R&D
Support, Operations, IT, Technology support, Engineering, Internal Business Change	Operations
HR, Training	HR
Business Units, All Areas	All Units

We therefore have applied a uniform classification as described in Table 3. Management team members or individuals with executive responsibilities are labeled Top Executive. Functions related to technology research and development were termed R&D; these include a Chief Technology Officer, a Systems development department, and the New Service Development role of the Engineering department in the Telecom company. Technology operations and maintenance functions such as IT, Technology support and Engineering were considered to be Operations. An Internal Business Change team was also classified as operations. Human resources and training were grouped as HR. We added a class named All Units to denote the participation of all business units or all business areas in an innovation.

In total, we gathered information about 25 innovations. Table 5 presents counts of the role

participation in each innovation stage as basis for analysis and initial conclusions.

Table 4. Service innovation functions

	Generate	Develop	Deploy
Customer	6	4	4
Customer Contact	0	4	2
Top Executives	9	6	4
Marketing	5	6	7
Sales	2	2	6
BD	1	9	4
R&D	4	9	7
Operations	5	13	25
HR	1	1	3
All Units	0	4	0

The frequency of participation is summarized in Table 5. We ranked the top four participants in each stage (using the same numeral for ties). Only some of our theoretical expectations are met:

- At the Generate stage – Marketing and Customer Contact are not the top idea generators, while Top Executives are. Both observations are in contrast to our expectations. It should be noted that in the small software services company, top executives were involved in the creation of all five innovations. This biased our count; however, top executives generated ideas in four of the six companies. Also, many service firms are relatively small [2], making the data from the software services company not unrepresentative.
- At the Develop stage – Operations, Business Development and R&D are well represented. We expected this for Operations, but had not formed expectations relating to BD and R&D. In only one, small company did Top Executives participate in this stage.
- At the Deploy stage – Operations, Marketing, Sales are well represented, as expected. In contrast with our expectations, Customers and Customer Contact do not participate in the deployment (only as part of All Units participation).

Another theoretical expectation from Scheuing and Johnson [10] is that personnel and customers will take part at the deployment phase. As can be seen from the data summary table of the Appendix, this did not happen in most cases, however, table 6 shows a somewhat related observation by presenting the number of organizational roles in each innovation stage. Table 6 is an abstraction of the Appendix post interview summary. Columns represent innovations while the

rows represent innovation process stages. In seventeen out of twenty five cases, later stages of the innovation process include more roles. Namely, there is no single *organizational locus* while moving from generation to development and then to deployment, and moving from one stage to the next typically increases the number of participants.

Table 5. Participation frequency top ranks

	Generate	Develop	Deploy
Customer	2		
Customer Contact			
Top Executives	1	3	
Marketing	3	3	2
Sales			3
BD		2	
R&D		2	2
Operations	3	1	1
HR			

Table 6. Number of roles at each innovation stage

Company/Stage	I #1	I #2	I #3	I #4	I #5
Telecom					
Generate	1	1	1	1	1
Develop	2	2	1	2	1
Deploy	4	4	1	1	2
Software Services					
Generate	2	3	1	2	1
Develop	3	4	3	2	6
Deploy	4	5	1	2	6
Software					
Generate	1	1	2		
Develop	3	2	4		
Deploy	3	3	5		
Investment Bank					
Generate	2	1	2		
Develop	2	1	2		
Deploy	2	1	3		
Insurance					
Generate	1	1	1	1	
Develop	All	2	2	2	
Deploy	2	2	2	2	
Retail Bank					
Generate	2	2	1	2	1
Develop	4	3	2	All	2
Deploy	5	4	1	All	2

Finally, Table 7 summarizes the relation between types of innovation and idea creators. We classified most innovations to either new service (S) or to process innovation (P) and recorded the roles in the Generate stage. These include R&D, marketing (M), top executives (TE), business development (BD), operations (OP), HR, customers (C) and sales. The data do not show a clear distinction between the roles in the two innovation types, possibly because the dataset is too small for this level of analysis.

Table 7. Innovation type and Generate roles

Telecom	S	S	S	S	S
Generate	R&D	M	R&D	R&D	M
Software Services	S	S		P	P
Generate	C,TE	C,TE, BD		TE, OP	TE
Software	P	P	S		
Generate	Sales	R&D	R&D, TE		
Investment Bank	P	P	P		
Generate	OP, R&D	OP	OP, HR		
Insurance	S	P	S	P	
Generate	TE	C	C	Sales	
Retail Bank	S	P	S	P	S
Generate	M, C	M, C	M	TE	OP

4. Discussion

This is a small scale exploratory study of the locus of innovation in service organizations. Starting with the literature about new service development and the more recent literature about innovation, we formed expectations that multiple organizational functions will take part in the generation of ideas, development of services and their deployment. A survey of three to five major innovations in six European service organizations have found this basic assumption correct. Namely, that the organizational patterns of service innovation are complex, involving many organizational roles and typically aggregating more functions as the innovation process progresses. This does *not* allow the identification of a simple locus of innovation. The common functions of product innovation, namely marketing and R&D, do not emerge as the innovation locus in our data; an alternative simple locus, such as marketing and operations, is also not identified. This complexity, or fuzziness of the locus of service innovation, helps us understand the ineffectiveness of service innovation as found in previous research [4]. It is possible that there are different patterns of innovation depending on sector, innovation type and

impact, but our dataset is too limited to test such hypotheses.

We also formed detailed expectations of role/stage participation following the new service development and innovation literature. However, these have been only partially supported. We found that Marketing and Customer Contact roles are not frequent creators of innovation. Customers, and Business Partners take part in creating innovations but somewhat less so in developing and deploying them. Although service organizations are aware of the importance of customers and customer facing functions in new service development [4], our results show the potential for increasing customer involvement in all stages of the innovation process. This is more important and possibly easier to achieve in the new innovation environment where cross organizational collaboration is accepted and praised [9], [15]. A contrasting interpretation may be that we focused on high impact, infrastructural innovations that may be difficult to engage customers with.

Another new observation is that top executives in our sample participated frequently in the Generate stage of the innovation process. We observed it happen in one relatively small company, but also in three large corporations with ten thousand or more employees each. This is surprising because we would expect top executives to lead innovation by creating the vision, goals, organization and culture, but less in actually innovating. A possible explanation is that we focused on high-impact innovations, where strategic new concepts or services are important. Recent literature about innovation emphasizes business model, or strategic, innovation, [7], [11] [12], and we might expect top executives to participate in such innovations. However, our respondents have classified these innovations as either new services or new processes. No innovation was seen as a business model innovation although we explicitly asked about this type of innovation.

This study also identified the role of Research and Development and Business Development in the service innovation process. These roles are important in Development but not in Generation of new services. It seems that for services, in contrast to products, R&D and BD are not the main initiators of innovations.

The contribution of this study is in exploring the simple question of the locus of innovation as an aide to understanding innovation processes in service organizations. A second contribution is in providing access to actual organizational data about major innovations in service providers. We believe that the question and data help in appreciating the difficulties

and weaknesses of service innovation. In particular, there are challenges in identifying a single locus of innovation for services and there is clearly a need for more collaboration with customers in these processes.

The main limitation of this study is the small number of cases we studied. The difficulty in capturing complex organizational innovation processes through a simple questionnaire and brief interview, the difficulty in abstracting data from several sectors, as well as the possible bias of our respondents are additional limitations of this exploratory study.

Future directions for this research include gathering more data by further interviews with executives using the same questionnaire. In addition we hope to conduct an in depth study of a limited number of service organizations and specific innovations, focusing on at most one or two sectors. Further research may help in identifying patterns of service innovation, if such exist.

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7. Appendix

Mobile Telecom					
Impact/Value	Very High /Growth	Very High /Growth	Very High/ Differentiation	Medium/ Differentiation	Low/ Differentiation
Type	New Services/ Extension	New Services/ Improvement	New services/ New offerings	New Services/ Extension	New services/ New offerings
Generate	CTO	CTO	Marketing	Engineering (NSD)	Marketing
Develop	+ Engineering	+ Engineering	CTO	Marketing, CTO	CTO
Deploy	Engineering, Marketing, Sales, Customer Support	Engineering, Marketing, Sales, Customer Support	Engineering	Engineering	Engineering, Sales
Software Services					
Impact/Value	High/Differentiation	Low/Cost Saving	Low/Differentiation	Low/Cost Saving	Low/Growth
Type/Value	New services	New services, Line-extension	Channels/ Customers	Process, Automation	Process, Improvements
Generate	Customer, MD,	Customer, MD, BD	MD	MD, Operations	Chairman
Develop	+ Systems	+ Systems	+ BD, Systems	Operations, Systems	+ MD, Sales, BD, Systems, Operations
Deploy	+ Operations	+ Operations	Sales	+	+
Software Product & Services					
Impact/Value	Very High/Differentiation		High/Differentiation	Low/Closing gaps	
Type/Value	Process Channels/ Customers		Process/Specialization	New Services/New Customers	
Generate	Sales		CTO	CTO, CEO	
Develop	+ Marketing, Customer Services		+ Engineering	+ Engineering, Customer Services	
Deploy	+		+ Support	+ Support	
International Investment Bank Subsidiary					
Impact/Value	High/Cost Saving		High/Cost Saving	High/Cost Saving	
Type	Process, Automation		Process, Automation	Process, Automation	
Generate	Operations, Technology		Technology Support	Training, Operations	
Develop	+		Technology Support	Training, Technology	
Deploy	+		Technology Support	+ Operations	
Insurance Company					
Impact/Value	Very High/ Growth & Differentiation	Medium/ Cost saving	Medium/ Differentiation	Low/ Productivity	
Type	Organizational/ New offers & Extensions	Channels, Customers/ Automation	New products/ New offerings	Internal services/ Internal Automation	
Generate	CEO	External Consultants	External Consultants	Sales	
Develop	All Business Areas	Proposition Team, Customer Service	Proposition Team, Customer Service	+ IT	
Deploy	Internal Business Change, IT	Internal Business Change, IT	Internal Business Change, IT	+	
Retail Bank					
Impact/Value	High/Growth	Medium/ Differentiation Closing gaps	Medium/ Growth	Medium/ Closing gaps	Medium/ Cost Saving
Type	New Services/ New offering	Process/ Improvement	New services/ New offerings	Process	New services/ Extension
Generate	Marketing, External Consultants	Marketing, External Consultants	Marketing	Strategy, CEO	IT
Develop	+ Business Units, IT	+ Business Units	+ IT	+ Business Units	+ Marketing
Deploy	+ HR	+ Training	Marketing	+ IT	+