

Service System Design (SSD) Innovation through Consumer Participation

Completed Research Paper

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ABSTRACT

This study reports on the issue of consumer-led design ideas in service innovations. The research is conducted through a “service science” lens, which treats consumers, providers, and technologies as parts of a service system wherein their interaction results in potentially mutual benefits. However, do consumers want to provide input into the design of services, can their ideas be valuable, and how and when do we approach consumers are some questions, which need empirical investigation. Thus, the objective of this research is to uncover the dimensions of consumer participation in service design. We applied a qualitative research design using focus group discussions. The results show that consumers provide informative use-based ideas to the organization if there exists, a level of trust between the two. The paper makes two contributions; a framework, which is instructive to an organization in order to include consumers in SSD and it extends the service science literature, which states that consumers are service systems with operant resources to be utilized effectively for the creation of value.

Keywords

Consumer participation, service system design, innovation, service science

INTRODUCTION

This research is conducted through a “service science” lens, which treats consumers, providers, and technologies as parts of a service system wherein their interaction results in potentially mutual benefits (Spohrer and Kwan 2008). Consumer participation is inevitable to improvements and innovations in services. Direct interactions with users are associated with enhanced usability, quality requirement’s collection, and eventually successful projects in all applied disciplines (Alam 2002; Barki and Hartwick 1994; Bitner 1990; Kujala 2002). The study of service systems implicitly makes consumers an operant resource (Vargo et al. 2010). However, do consumers want to provide input into the design of services, can their ideas be valuable, and how and when do we approach consumers are some questions, which needs empirical evidence (Bolton and Saxena-Iyer 2009).

In this context, the primary objective of the research is to uncover the dimensions of consumer participation in service design. We applied a qualitative study (Maglio et al. 2006) and conducted seven focus group discussions with the consumers of a telecommunication organization. This was supplemented with an online questionnaire, which could potentially add to the richness of our understanding of the phenomenon. Three major telecom services; IPTV, Mobile Internet and Fixed-Line Value-Added-Services (VAS) consumers were invited for focus group discussions. The main contribution of this paper is that it presents results from an empirical research from a consumer point of view. It makes use of a user-involvement framework presented by Alam (2002) and extends it to fit the consumer-orientation in the data. Moreover, the research took place in an emerging economy, which presents a unique context for the consumers’ needs from a pure service industry.

In the following sections, literature review discusses the consumer participation in SSD; method section discusses the research methodology and elaborates on consumer participants. After that, data analyses and result section discuss the findings based on the literature and the empirical data.

CONSUMER IN A SERVICE SYSTEM

Service science is a study of “service systems which is a configuration of people, technologies, and other resources that interact with other service systems to create mutual value” (Spohrer et al. 2008). From this definition, ‘consumer’ becomes

an integral entity, which is involved in the creation of value. Consumers are implicitly involved in the use and creation of services, which makes organizations functionally dependent on them. However, pure service organizations are looking for ways to include their consumer more explicitly in this value creation network (Hochstein et al. 2008). A formal model is developed by (Hochstein et al. 2008) for systematic evaluation of consumers information which can help organizations in getting a holistic picture of consumers' decision processes.

Consumer participation has been around since the seminal work by von Hippel when he introduced a framework for consumers' ideas inclusion in product development (Hippel 1978). The trend spans over a number of disciplines (Barki and Hartwick 1994; Meuter et al. 2000; Ostrom et al. 2010). The end-user involvement literature (Patel 1999; Pitts and Browne 2007) suggests technology acceptance, and penetration, becomes swift if an end-user is involved in the development of new systems. Similarly, in the service science literature, Evenson (2008) suggests research into the newest forms of interaction that provide higher-quality service with more dominant connections between service providers and consumers. In addition to better quality, it has the potential to contribute to the speed and effectiveness of the technology-infused service adoption (Evenson, 2008, Bitner et al., 2010). Previous literature suggests that identification of user needs is one of the innovation capabilities (Hertog et al. 2010) while ideas that originate from needs, are often contextual in nature and therefore, can create sustainable competitive innovative service offerings (Amabile et al. 1996)

Alam (2002) devised a four item framework based on empirical data, for consumer inclusion in business-to-business services. These items are objectives/purpose of user involvement, stages of user-involvement, intensity of involvement, and modes of involvement. These elements within the user-involvement framework correspond to simple answers to, why we need consumer participation in service designs, at what stage of design the consumers should be involved, how often this consumer connection should be made, and what modes of communication the organizations should use in order to engage the consumers respectively. Magnusson et al. (2003) concluded in an experimental study, using Alam's framework that a right intensity of involvement is crucial with which users can participate in the service development. However, they warned that mere expectation of ideas from the consumers is not enough.

It is important to identify the service design stage (Kaasinen et al. 2010) where consumers can interact with the designers to facilitate the design process. Service design activity can be divided into three stages, the interface-level design, the functional-level design, and the technical-level design (Atiq et al. 2011). In functional-level design, the consumers are asked to customize the functions of the service according to their requirements. In interface-level design, a consumer can change the display preferences of their services while in technical-level design; the consumers give their input for customization of technical level details of their service. There is another which can be termed as, strategic-level design (Alam 2002). It refers to the design ideas that can be incorporated at the strategic planning level of the services. Usually, the strategic-level design ideas come from top management and then they become part of a service design. However, such ideas if can be gathered from the consumers would result in innovative services which can specially cater the consumers.

The literature helped in devising a consumer-participation framework.

Consumer Participation Framework

From above literature, we suggest that why, how, where, and when are the fundamental questions that a service organization should raise before involving consumers for service innovation (Alam 2002). These refer to, why they need consumers to be included, how they should be included, where they can participate, and when they should be approached. However, empirical investigation increased one of the elements in this framework, due to the consumer's response about motivation through incentives. The reason could be, in Alam's study only business-to-business service industrialists were interviewed, and in our research, a normal consumer is interviewed. Therefore, further extension to Alam's framework, are "which motivation mechanisms should be used" (Kaasinen et al. 2010) and "what" refers to the actual ideas that consumers give. For supportive inclusion of consumers in service innovation, this framework can facilitate the designers to incorporate consumer ideas into service design and redesigns. Moreover, the framework provided a convenient way to organize and analyze the consumer ideas.

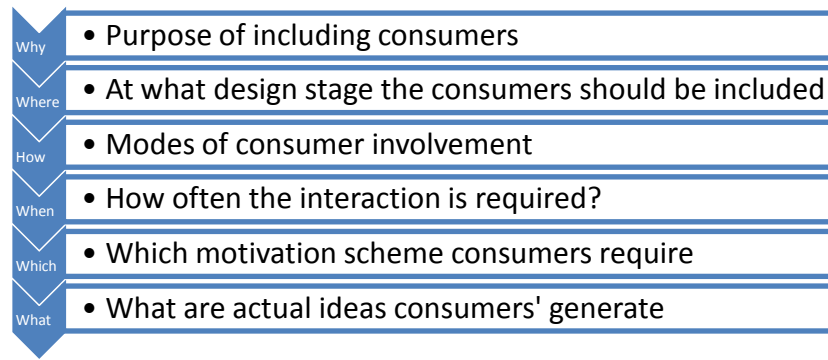


Figure 1: Consumer-Participation framework adapted from Adam (2002)

RESEARCH DESIGN

A qualitative research design is applied in this empirical investigation as it has an ability to observe the decision-making process of humans in their context (Boyatzis 1998), thus making it suitable for the identified research problem. In order to gain rich insights from telecommunication services, where the number of subscribers is large but the organization is still struggling to create effective SSD strategies, we chose to investigate in an emerging economy. The research site is the telecommunication organization in Pakistan with around 2000 exchanges all over the country, 18 million landline subscribers, and 5.3 million internet subscribers. It is owned by a foreign Middle Eastern company and is responsible to provide the copper backbone throughout the country to other cellular and internet providers.

Seven focus-group discussions were conducted that comprised of total 32 respondents. Each session had 4-7 participants. All were information technology literate and aged from 20-40. Of the 32 respondents, only 5 were females. All participants, and the moderator, who is also the primary researcher, belonged to same cultural and social setup. Each discussion lasted for approximately one hour. During the analysis of data it became obvious that most of the discussants belonged to three groups; IT students, IT professionals, and IT lecturers. Initially, the intention was not to focus on these three groups. However, during the recruitment and analysis process these three groups became obvious. The reason is that people using the three services altogether usually belong to these three groups throughout the country. The tech-savvy people in the country look for IPTV services whilst students mostly use the mobile internet.

The reasons to conduct focus group sessions with the consumers are three fold. First, is to reach a group of more individuals simultaneously. Second is, for explicit use of production of ideas, which would be less accessible without interactions, and last is to motivate the consumers to converse actively on their ideas, that reside on their preconscious. (Morgan 1988). The focus group interview questions were focused at how consumers want to interact with the providers and do they think that their ideas can improve the services they are using. They were also asked to provide their creative ideas to improve on the services. The participants responded in two languages, English and Urdu. To work in a team with non-Urdu speaking researchers, and to analyze our data using Nvivo, the primary researcher translated the interviews into English. Translation is an act of meaning transfer from source language to a target language (Esposito 2001).

The data is organized in Nvivo for easy management and analysis. Thematic analysis is performed on the data using interpretive philosophical assumption. It is a process for encoding 'explicit codes', from the available qualitative information. A theme is a pattern found in the information that at the minimum describes and organizes the possible observations or at the maximum interprets aspects of the phenomenon (Boyatzis 1998). Accordingly, in the first step data is encoded into explicit codes. In the second step, the nodes were categorized based on the theoretical framework, which is the consumer-participation framework. After going through much iteration with the data, 51 different ideas formed the nodes.

The next section reports on the results based on the consumer-participation framework discussed in the literature review section.

RESULTS AND DISCUSSION

Table 1 maps the results from the data to the consumer participation framework discussed earlier. This section contains excerpts from the consumer focus group discussions. There are several reasons pointed out in the extant literature for consumer participation in the design of the services. However, this section primarily notes the consumers' replies to the question, why they think that their say should be included in the design of services they use. It is imperative to know whether consumers choose their say to be included or not? Is it important in their opinion to include them or not.

Consumer-Participation Framework	Results from the data
Why	Resource Efficient output Reduced Communication gap Reduced Organization's workload Quick Acceptance
How	Make consumers part of design team Through working on consumer feedback/Team for feedback analysis Delegate planning to consumers Internet (Website, emails) Questionnaires Bring awareness among younger generation Through university seminars etc./Visit universities Through an offline forum
Where	Functional Level Strategic Planning Level Technical Level
When	High Level: Make consumers part of design team High Level: Make consumers part of planning team Medium Level: Visit Universities, Inform, educate Medium Level: Interaction concerning feedbacks Low Level: Through Internet (website, emails)
Which	Through incentives Giving credits
What	In table 2

Table 1: Consumer data mapping to the consumer-participation framework

“Why” Consumers should be Included in SSD?

The four responses mentioned below agree with Alam (2002)'s results. Considering the fact that these come from ordinary consumer establish that consumers are smart enough to be included in the design of the services they use (Prahalad and Ramaswamy 2004). They bring the operant resources to the service system and can result in effective SSD (Vargo et al. 2010).

Resource efficient output:

One of the benefits to include the consumers in the design of the services is that within the same number of resources, an organization can attract more consumers.

Reduced Communication gap:

The second benefit stated is the reduction of a communication gap between the consumers and the provider. The customers believe that user conceptual analysis is essential to remove the flaws in the design of any service.

Reduced organization's workload:

It reduces the organization's workload. When the organization offloads their design workload on the consumers, they can use their hired human resource on other important tasks as one of the discussants pointed out, “if you are able to make the consumers do the designing, in one sense you have reduced your load of work.”

Quick acceptance

The users can quickly accept the new service when organization involves them in the design work. Since, they would already know the mechanics of the service, therefore, the organization's time-to-market the service can reduce.

“How” Consumers can be Included in SSD?

This section present data related to, how consumers want to become part of the design team, and how they should be approached for service design ideas (Bolton and Saxena-Iyer 2009).

Make consumers part of the design team:

The consumers should be made a part of the design team because a consumer conceptual model has to be understood by the designers so that their needs get across. As one of the consumers explained, *“The designer who develops, they should make users a part of the design team, he should map the user’s conceptual model properly. So one thing is that user conceptual model has to be understood, right and when you’ll make him a part of a design team, you’ll ask him that how will it be done, how do you want it, at that time, he’ll be satisfied?”*.

Delegate planning to customers

The customers should be involved to an extent where they can plan the service design, and the organization can work on the feasibility of that plan.

Through working on Consumer feedback:

The consumers say can be included in the design of services through feedback channels. They suggested different strategies for the organization related to feedbacks. One of these strategies is the appointment of a separate team of people to analyze the collected feedback. Another strategy proposed is to look into the competitors’ way of working on feedbacks. Moreover, the customers should be attracted through various ways. Last is, the disapproving feedback should be also be analyzed to improve on the services’ design in operations. As one of the consumers said, *“Whatever the consumer writes, he writes a bit negative, if you make that negative, positive and work on it, then everyone would become happy as well. That would be a better procedure in order to improve your service, meaning he can put negative feedback as well, even that is beneficial for you”*.

Through Internet (Website, Emails)

One of the ways to communicate with the consumers is through the websites. One of the easiest communication mechanisms discussed by the consumers is an email. The people these days can communicate with a press of a click, and therefore, they want the email responses to be prompt and effective. The emails can be detailed, and something where people can effectively express their requirements. Moreover, through email groups, not only the providers but also other members can send their replies for prompt help and resolutions.

Questionnaires

One of the strategies to collect responses from the consumers is through questionnaires. These questionnaires should be accessible through the website. However, the young consumers are reluctant to give their feedback, unless offered an incentive for their time. Moreover, the organizations can examine the network traffic in areas where people download more and can allocate more speed there.

Team for feedback analysis

The providers should keep a separate team for feedback analysis. There are several reasons for that; one is that management is not aware of the internal issues of the designers and the way they work (Glushko and Tabaas 2007). It poses a communication gap between the planners, and the designers of the service. Therefore, a capable team to examine the consumers’ input and translate it effectively for the planners, and the designers of the service is important. The respondents suggest that feedback analysis team could be created from the university students for mutual growth.

Through an offline forum

One of the communication mechanisms is through forums. However, if the Internet service is itself down, then these forums are of no use. Therefore, the consumers believe that telecom should provide them with a backup parallel network or backup network through which they can communicate their needs promptly to the providers.

Bring awareness in the younger generation /Visit universities:

As telecom services’ in the region are used mostly by the younger generation, the consumers suggest that the providers should bring more awareness in them. The providers should advertise their services in the universities and colleges to attract the young population of the country to use their services. The providers should work towards sending their teams to the university to discuss their new services design and get students’ feedback on them.

“Which” Motivation Scheme Consumers require to get involved in SSD?

‘Which’ refers to the motivation scheme that the consumers would like to incorporate their feedback in the design of services (Kaasinen et al. 2010). The respondents discussed two motivation schemes. First, to offer them the same service for which they gave the feedback and second, the organization should incorporate consumers’ feedback and give those people the credit by making it known to their peers (Bolton and Saxena-Iyer 2009).

Incentives:

The incentives are an effective way to motivate consumers for communication when they are not willing to be a part of a design team. To interact with the consumers it is important make the consumers believe that providers are serious about their needs. Therefore, consumers should be given the reasonable incentive. As one of the participants said that, *“at the moment what the thinking is, that these youngsters do not rely on the websites, they do not find them reliable. As Z said, that you give them some kind of incentives or giveaways then...”*

Give credit:

To give credit of the work anyone does is also one way of motivation, which does not always require monetary exchange, as one of the respondents said, *“He would get some recognition, that yes, some of my ideas have been accepted, or I have been asked, as we wanted”*

“When” in the SSD stage Consumers should be Included?

“When,” suggests when in the design stage the consumers should be included. Moreover, it gives an idea of how intense this participation needs to be. Alam (2002) suggests that the intensity is on a continuum from low to high level of participation. Therefore, the ideas such as make consumer part of the design team, make consumers part of a planning team, are high in intensity. Then, visit universities, inform, educate consumers, and feedbacks collection through internet belong to medium level while, participation through questionnaire, emails and website can come to low-level of intensity.

“Where” in SSD Consumer Ideas can be included?

“Where” corresponds to the ‘service design stage’, where the consumer ideas can be included (Atiq et al. 2011).

Functional-Level Design:

The functional-level ideas refer to the ideas, which can be included at operations in a service design. The service design imparts something, which is of less value to the consumers, and if organization can incorporate, the stated functionalities, the value gain for the consumers from the service can increase.

The ideas to improve the functionality of IPTV are: IPTV multi-room facility and launch of unique channels. Apart from these, the functional-level design innovations that mobile internet and value-added services can add are; blogging opportunities, create movies/games database/server, digital libraries for researchers and students and packages, file accessibility in different formats, online learning, real time content, research help and social networking.

Strategic-Level Design:

Consumers gave some strategic-level design ideas in their discussions as shown in table 2. These ideas are generated by contextual needs of the consumers. For example, when one does not find enough information about a service, he/she asked for better advertisements of the services. Similarly, when consumers faced problems in the configuration settings of the system, they suggested that in the first installation, the support person could educate them about the configurations.

Technical-Level Design:

For idea screening phase, three evaluation criteria indicated by Hart et al. (2003) were technical feasibility, product uniqueness, market potential and customer acceptance and intuition. If the organization involves consumers in the design phase, one of the criteria customer acceptance and intuition cross itself out. In our research, the consumers are able to give technical design ideas as well, because they belonged to technology background. Therefore, when asked about their creative ideas for service design, they gave the ideas such as, development of an application capable to configure itself, backup plans, security from hackers, etc.

“What” are Consumer Ideas for Innovation in SSD

The findings in this paper are based on the consumer data collected during focus-group discussions. The consumers were asked to inform the researcher about the innovative ideas they have for the designers, to improve on the telecom services they are already using. There are 44 ideas in table 2. These suggestions highlighted by the consumers are further categorized into three, Functional-level, strategic-level and technical-level design ideas.

Design Stage (Where)	Origin (From)	Consumer Ideas (What)
Functional-Level Design Ideas`	Interest Imitative/ competitor work need regional need Imitative hedonic interests work need local trend/hedonic interest hedonic interests	blogging opportunities create movies/games database/Server digital libraries and packages file in different formats IPTV multi-room online learning real time content research help social networking sports channels
Strategic-Level Design Ideas	need Local trend/hedonic interest interest need need need regional need need need need need need need need need need interest need	advertisements of related websites chat rooms to interact with other consumers delegate design to University students focused advertising increase call centre manpower inform users completely Islamic Compliance Policy low cost device make people aware mobile servers mobile vans for problems rectification Package dynamics physical contact provider independent service team that can diagnose and rectify problems university alliance videos for troubleshooting
Technical-Level Design Ideas	need need need need need need need need need need regional need regional need need need need	accessibility all over country at remote areas through satellite backup plans configuration reset itself develop configuration software give fiber optic install on copper on mobiles rectification of hacking remote installations same bandwidth across the house security from hackers Security of devices services should be independent of electricity they should do sectoring they should know what lines are dead

Table 2: Consumer data for "what" and "where" in consumer participation framework

The consumers gave more ideas at strategic-level design and technical-level design than functional-level design (Table 2). It agrees with Alam (2002)'s results in which the user activities in their experiments were higher at idea generation and idea screening than service design stages. It can also be noted that most of the ideas in technical-level design come from user requirements. These ideas come from the genuine needs of the consumers. However, the organization is failed to provide

these basic needs to the telecom consumer. Therefore, instead of more ideas generation at the functional-level design, consumers are more concerned at the technical-level improvements.

Table 2 also proposes to recognize the origin of the ideas, which are generally need-based. User needs are categorized as implicit and explicit needs (Kujala 2002). The needs are the problems, which obstruct users to realize their goals or to enhance their experiences. User involvement and participation can suppress these obstacles and eventually result in efficient projects, and quality (Kujala 2002). Our investigation reveals seven types of idea origins in this regard: from a need, a regional need, a local trend, a work need, an interest, a hedonic interest, and imitative. It is observed that the criticism that consumer participation can only result in imitative service offerings is not valid, as in 44 ideas, just two ideas are imitative in nature. Moreover, the ideas that originate from needs, are often contextual in nature and therefore, can create sustainable competitive innovative service offerings (Amabile et al. 1996) whilst, innovative service offerings that can meet user needs result in enhancement of organization's competitiveness (Magnusson et al. 2003).

CONCLUSION AND LIMITATIONS

This research paper reports on the topic of consumer steered design ideas in service innovations through a service science lens. The rationale for using the underlying theory of service science is that it captures the consumer-provider-technology alignment for value co-creation holistically. The results show that consumers are willing to provide informative ideas to the organization if there exists, a certain level of trust between the two. The 'level-of-trust' issue established a major limitation for conducting this research, as discussants were reluctant to participate in the research; therefore known consumers were contacted. However, to overcome this limitation, an online questionnaire was advertised through various social networks and emails, which further, supplemented the richness of our understanding of the phenomenon. Moreover, on empirical investigation it revealed that consumers are not willing to participate in such discussions because of two major reasons; one is security concern in the region and second is the low level of trust on the organization. Furthermore, results show that, consumers want to be a part of a design or planning team if offered the right incentives.

The results also suggest that consumers' innovative ideas were predominantly need-based where generated through focus-group discussions. These needs are contextual in nature and therefore, do establish a rationale for designing and redesigning competitive service offerings.

In conclusion, the first major contribution of the paper is a framework based on (Alam 2002) which is instructive to an organization in order to include consumers explicitly in their service system designs. The second contribution is towards the literature of service science which states consumers are service systems with operant resources to be utilized effectively for creation of value (Vargo et al. 2010). For future research in the area, a natural step would be to develop a specific set of policy and technology tools that service providers can use to involve consumers in service system design.

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