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Service Innovation In Academic Libraries

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Service Innovation In Academic Libraries: Is There a Place for the Customers?

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Service Innovation In Academic Libraries: Is There a Place for the Customers?

Abstract

- Purpose: The purpose of this article is to investigate whether management and employees in academic libraries involve users in library service innovations and what are these user roles.
- Design/methodology/approach: The paper first conducts a literature review focusing on innovation, new product development, new service development and library science with specific focus on users and management. Subsequently the research uses a case study approach to investigate management and customer involvement in a Danish academic library.
- Findings: Results from the case study show that academic libraries are making some attempts to draw on customers in service innovations and not only rely on management and employees. The main conclusion is that there are unexplored possibilities for customer involvement in library service innovations.
- Research limitations/implications: One limitation relates to the difficulty of generalization of the findings to other Danish libraries and especially other national contexts. The other one relates to the preponderance of the literature from sources outside the field of library management and library science. Therefore, library managers might have to be cautious in using the results of this study.
- Practical implications: This paper has practical implications for library managers, employees, library science and innovation researchers alike.
- Originality/value: This article is original because it generates new insights into management and especially customer involvement in academic library service innovations on the base of an in depth case study of Danish academic library

Research paper

Keywords: New Service Development, New Product Development, Innovation, Customer Involvement, Electronic Services, Libraries, Web 2.0

Introduction

Innovation and transformation are important concept in today's libraries especially in light of the libraries' ongoing transition from acquiring serials in print to providing access electronically, thus moving toward the virtual library (Carr, 2009). In order for libraries to remain relevant to their customers, they must follow the fundamental rule of business, that is, to supply what is demanded by their market. Library staff skills and library services all have to shift from book-centric to user-centric. As the academic library continues to redefine its role in the digital environment, it needs to leverage its strengths and innovate to create responsive and convenient services (Li, 2006). By exploring the challenges facing libraries in the digital age Brindley (2006) considers ways in which they need to reshape and rethink their services and skills to maintain their relevance and contribution. Central themes identified by Brindley (2006) include: know your users and keep close to them; integrate marketing into the organization; invest more in innovation and digital activities; and develop the people and ensure the right mix of skills. Regarding the interaction with the users Rutherford (2008, b) found that participative elements of social software made it easier for users to provide feedback on all aspects of library services, thus contributing to the library innovation process.

In business literature, the importance of involving customers in service innovation and development has been the subject of innovation theory over the last decade or so (e.g. Alam and Perry, 2002; Alam, 2002). For example Bitner et al. (2000) recommend close involvement of customers in the design process of technology-based services. Von Hippel (1986, 1989) has given numerous examples of user driven innovations leading to product and service innovations. Given the role that customers might have in services innovations and the academic libraries' need to innovate their services, the objective of this paper is to explore whether and how library customers are involved both on a spontaneous and solicited base in the innovation process of academic library's traditional and electronic services. The research questions addressed here are the following: To what extent do academic library management and employees involve customers in services innovation? What are the roles of the library customers in the service innovation process? Similarly to Piller and Walcher (2006), we define user innovation as an innovation where users have contributed to the problem solving process leading to a solution. A user is an actor who expects to profit from an innovation by consuming or using it.

This paper contributes to the debate on innovation in libraries by particularly focusing on user roles. Other studies have focused on innovation in libraries, but they have taken different perspectives such as employee creativity (Castiglione, 2008), developing knowledge innovation culture in libraries **(**Sheng and Sun, 2007) or changing customer demands and library's ability to innovate and respond to them (Brindley, 2006; Li, 2006).

The paper is structured as follows. The introduction presents the background and research question. The second session presents the theoretical background. The following session introduces the research method and the library case. The last sessions present the results as well as discussion and conclusions.

Theoretical Background

The importance of involving customers in innovation (e.g. Chesbrough, 2003; Christensen, 1997) and new service development (e.g. Alam and Perry, 2002; Alam, 2002) has been the subject of innovation theory over the last decade or so. Collaboration between providers and customers can lead to a mutual understanding of the customers' needs and wishes, as well as an understanding of the technological opportunities (Hennestad, 1999). Bitner et al (2000) recommend close involvement of customers in the design process of technology-based services. Von Hippel (1986, 1989) has given numerous examples of user driven innovations leading to product and service innovations. Recently, Chesbrough (2003, 2006) has argued that the process of innovation has shifted from one of closed systems, internal to the firm, to a new mode of open systems involving a range of external players. It is Chesbrough’s emphasis on the new knowledge-based economy that informs the concept 'open innovation'. However, a number of studies also show an opposing view regarding the benefits of involving users in product or service development. For example, Leonard and Rayport (1997) believed that customers lack sufficient technical knowledge to produce innovations and are unable to articulate their needs. These findings are however again questioned by newer research arguing that the inclusion of customers may spark divergent thinking and creativity leading to new knowledge (Rutherford , 2008b; Roberts et al., 2005; Kristensson et al., 2004). Generally there is a general lack of systematic processes of capturing ideas and developing them into new services. In the last decade or so the communication between service providers and customers has been made easier due to the Internet and related communication technologies (Aharony, 2009; Rutherford, 2008a; 2008b;).

However few studies have investigated how they can be used to involve library customers in library service innovation (e.g. Aharony, 2009).

1. *Customers' involvement in innovation, new service and new product development*

Within the innovation literature, there has been much focus on new product development (NPD) and new service development (NSD) in the last couple of decades (Nambisan, 2002; Alam and Perry, 2002). For example Alam and Perry have developed a stage model of new service development (See Table 1). This framework takes into account the core elements of user involvement in new service development highlighting objectives/purposes of involvement, the stages of involvement in the organizational innovation process, the intensity of involvement and the modes of involvement. They find involvement of customers in idea generation and idea screening as the most important input to service innovation. User involvement in strategic planning and personal training are of least importance. Nambisan (2002) has likewise identified a number of stages of new product development and has looked at the roles of customers in new product development. He has come up with three roles: customers as a resource, customers as co-creators and customers as users. Lately these roles have been extended and further insights on why customers involve have been developed (Nambisan and Nambisan, 2008). Finally, many models of the innovation process have been developed in the literature (e.g. Zaltman, 1973). Rogers' model (1995, p. 392) defines the organizational innovation process as consisting of two broad activities: the initiation and the implementation process. Each activity is then subdivided in a number of stages that are rather similar to the stages identified by Alam and Perry (2002) and by Nambisan (2002) (see Table 1). Customers may contribute in a number of ways including stating their needs, problems or solutions or criticizing existing services (Alam and Perry, 2002). They may also help in screening ideas by responding to concepts or alternative solutions with their thinking, dislikes or preferences. In order to get these insights customers may be involved through face to face meetings, customer visits or meetings, workshops, customer observations or direct types of communication (Alam, 2002). Nambisan (2002) further argues for indirect information such as surveying customers' e-forums to gain indirect insights on their experiences and perceptions. It may be argued that according to these frameworks (see Table 1) users can take on the same roles in new service development as in new product development. However, Alam and Perry argue that customers may not only contribute with ideas, but may also help screen these and may participate in the initial strategic planning, which is not covered by

Nambisan (2002). Table 1 summarizes and compares the stages in the innovation process and the stages of new service and product development. In addition, Table 1 illustrates the different roles that the customer can have in the different stages.

Table 1: Summary of innovation process stages, new service development (NSD) and new product development (NPD) stages and customer roles in the different stages.

Innovation Process Stages (Rogers, 1995)	10 stages of new service development (Alam and Perry, 2002)	NPD Phases (Nambisan, 2002)	Customer's roles in NPD (Nambisan 2002)
Initiation Step 1. Agenda setting is the general organizational problems that may create a perceived need for innovation.	(a) Strategic planning		
Initiation Step 2. Matching is fitting a problem from the organization's agenda with an innovation.	(b) Idea generation (c) Idea screening	Ideation	Customer as resource
Implementation Step 1. Redefining/restructuring is when the innovation is modified and re-invented to fit the organization, and when the organizational structures are altered.	(d) Business analysis (e) Formation of cross functional team (f) Service and process design (g) Personnel training	Design and development	Customer as co-creator
Implementation Step 2.	(h) Service testing	Product testing	Customer as

Clarifying is the relationship between the organization and the innovation is defined more clearly	and pilot run (i) Test marketing			user
Implementation Step 3. Routinizing is when the innovation becomes an ongoing element in the organization's activities	(j)Commercialization	Product	support	Customer as user

2. Customer Roles in the Innovation Process

As already said Nambisan (2002) found three roles that customers can take on in new product development: customers as a resource, customers as co-creators and customers as users. They are discussed below. Given the previous discussion, we assume here that such roles can be used in innovation in general and thus also in the academic library service innovation.

Customer as a resource. The role of the customer as a resource in idea generation phases has been extensively investigated by the innovation literature (e.g. Von-Hippel, 1986, 2001; Christensen, 1997). According to Nambisan (2002) the contribution of customer as a resource varies with the maturity of the technology in question. In continuous innovations, customers are generally passive and their opinion has to be gathered through market surveys or focus groups. However, Matthing et al. (2004) and Magnusson (2003) found that it is definitely possible to get innovative and original ideas from potential customers. There are a number of challenges related to involving customers as a resource in idea generation (Nambisan, 2002). They include customers' selection, creation of incentives to foster participation and capture of knowledge. This creates a need for competences to transform ideas into services, which is not a trivial task (Panesar and Toreset, 2008).

Customer as co-creator. Customers may also play a key role as co-creators of new products or services. As co-creators, customers can participate in a number of activities varying from for example service design activities to service development activities. Such activities might include

the validation of architectural choices or the specification of interface requirements. Several potential incentives have been identified that motivate customers to involve themselves as co-creators or co-producers. These include enhanced self esteem and greater opportunities to make choices (Schneider and Bowen, 1995).

Customer as user. The last role that Nambisan (2002) has identified is the customer as a user. In such a role customers can provide value in two ways: product or service testing and product or service support. For example in the software industry many firms have used their customers in beta product testing, thus enabling those firms to reduce their investments in internal product testing units (ibid). Customer involvement in product testing can be used to identify problems early in the development phase, thus minimizing the costs of redesign and re-development. Regarding product or service support, customers can acquire significant knowledge or expertise on various aspects of usage, which they can use to help or provide support to other customers. In addition "expert customers may discover new ways of product usage, as well as shortcuts and other methods to enhance the overall value of the product "(ibid, p. 396).

Research Method

A case study (Yin, 1994) of Roskilde University Library was conducted to investigate how libraries are involving customers in the innovation and development of traditional and electronic services. This library is representative of the Danish academic libraries in regard to service provision and use. This is due to a collaboration project among Danish academic libraries established by the Library Authority to foster electronic services development and diffusion in Denmark (wwww.deff.dk). As Rogers (1995, p. 390) states: "data about the innovation process are obtained by synthesizing the recallable perceptions of key actors in the innovation process, written records of the organization adopting, and other data sources". Accordingly the data of this study consists of primary data collected through qualitative explorative and semi-structured interviews ad meetings with library personnel; and secondary data such as reports and other material provided by the library personnel or retrieved on the web as well as research articles and books. Face-to-face qualitative interviews and several one hour meetings with library managers were conducted. In addition also a workshop with library managers and other employees was arranged. The interviews lasted circa 1.5-2 hours each, they were all tape recorded and fully transcribed by the authors. The workshop and some meetings were recorded, but not transcribed. Initially a contact was established with a top manager of the library. He then investigated

whether there were other library employees who had an interest in participating in the study. Several managers and employees expressed their interests to participate. Subsequently top management also invited other employees to participate in the meetings and workshop. Among the volunteers, the interviewees were selected in a purposeful way (Patton, 1990). The respondents had to be involved in the services innovation and development process at top management level, managerial level or had to be librarians involved in using the services, thus being in direct contact with customers through services such as chat. The key role that the respondents had in the planning, development and use of library services, gives high level of reliability and validity to the findings. By relying on Yin (1994)), the data were analyzed by following the "general strategy of relying on theoretical orientation" of the case study. Partial reports of the study were presented and discussed with two library managers. **1. Roskilde University Library**

Roskilde University Library (RUB) is a research library serving the students and staff at Roskilde University. Roskilde University is a smaller university located in Roskilde, a city about 35 km. from Copenhagen, the capital City of Denmark. Today the library counts approximately 46 employees. It holds a number of paper books, paper journals, and the entire spectrum of media as for example videos, a big amount of e-books and circa 18,000 e-journals. Over the last few years RUB has developed a number of electronic services and self-services that are changing many aspects of the way the library operates. Examples are access to electronic journals, digital repository of all the student projects, and chat with a librarian. From an organizational point of view, the library structure has been reorganized over the last few years from an organization divided into different departments to a matrix form of organization. Presently the library organization consists of a library director, a head of planning and a head of reader services constituting RUB's top management. Five lines (departments) have been established, each of which with a number of staff and a head of department also called line manager. In addition a "Coordination Committee" has been established which is composed of the 3 executives, the 5 line managers and 1 secretary. In this paper we use the word line manager and head of department interchangeably when we refer to the head of these five departments.

Analysis and Results

In this section we conduct an analysis of the data collected in the empirical investigation of Roskilde University Library and provide answers to the research questions posed in the introduction.

1. Extent of library customers' contribution to services innovation at RUB

According to RUB's management, service innovation at RUB is mainly driven by the management and library employees and to a lesser extent by library customers. RUB's top management can for example get inspirations from Denmark's Electronic Research Library (a library consortium) or OCLC as they might catch aspects and trend other RUB's employees might not notice at all. As the manager of the IT Department states:

> *"They (ideas) come from different layers in the organization. Ideas may come from the top management who has been away talking to others. But ideas may also come from colleagues, employees without management responsibilities. A lot of ideas come up because people take part in so many different networks."*

This finding is in line with the study by Kettunen (2007) that found that libraries are developing networked cooperation with other institutions and libraries in order to develop their activities. Many innovations at RUB are thus dependent on the library management team and the employees being outgoing and alert to changes taking place elsewhere in their network. Employees' creativity also plays an important role at RUB as ideas may also come from practices in other libraries or industries which are then creatively converted to the library context by management and employees. Similarly, employees' creativity had been found to be an important managerial concern for library administrators by Castiglione (2008).

However RUB's customers also play an active role. We found that customers are mainly contributing with ideas for incremental innovations. These might be small suggestions or improvements as for example the idea of making available to the customers a projector to be used for group presentations; or suggestions to improve newly launched electronic services especially in testing and pilot runs phases. Similar results were also found by Alam and Perry (2002) and Nambisan (2002). Customers play also a role in what Roger (2005) defines the implementation phase and a lesser or almost no role in the initiation stage (see Table 1). The approach to customer involvement is traditional; customers are seen as conservative or lacking sufficient knowledge to contribute with radical suggestions as also argued for

example by Leonard & Rayport (1997). The head of reader services puts this very directly in the statement underneath:

> *"It is limited how much the customers may contribute with ideas. I believe the customers are too conservative.. Well it is smaller suggestions, they are not trivial, they can be just as legitimate, but they are not high-flying"*

The same understanding is revealed by the IT department manager as he accounts customer ideas for circa 20% of the ideas that RUB get. User innovation is seen as a complement to the library internal innovation process and not as a substitute for internal practices. On the other hand the head of reader services acknowledges that there are some customers which may be categorized as lead users (e.g. von Hippel, 1989). These users are seen as somebody that the library could benefit from as the following statement shows:

> *".. I believe the users are too conservative except from a few, whom we would like to get hold of. These are the ones who have already given up (the library) or given it another meaning" (Head of reader services)*

However a line manager points to problems in the existing process of collecting and screening ideas. His argument is that customers do come up with ideas, but his experience is that it is important that these user inputs are communicated directly from the customers to RUB's top management to give such ideas higher validity.

"We often tell the loaners:"do you know I think you should suggest this".. Because we know that this is what management are extremely open to". Line Manager

The move towards intensified use of electronic services has opened up for new possibilities to build knowledge about user behaviour as also pointed out by Aharony (2009). For example the library can use log data from online sessions to find usage statistics and patterns which can be used to find challenges and optimize services and electronic services. However some ethical challenges are present here. For example, the librarians using the "online chat" service might feel some sort of control if documents from the chat sessions should be used for improving future chat services.

”... And then we try to look at the content, but the employees feel monitored ...” IT Department Manager

Finally RUB is using different methods such as online surveys to investigate customer wishes at different levels and it is using performance measurements to secure the quality of the service delivered.

We can conclude that innovation is considered important at RUB and different initiatives are launched to secure innovation, including customers’ direct or indirect involvement. However, direct customer involvement is considered important but not contributing with radical suggestions. In the following session we will take a closer look at how customers are actually involved in service innovation at RUB.

2. Customer Roles in service innovation

We found that RUB is mainly using customers in two of the three roles described by Nambisan (2002): customer as a resource and customer as a user. The role customer as co-creator is at an infant stage, mainly due to the challenges of involving library users.

2.1 Customer as a resource

RUB has taken several actions and uses several techniques to involve the customers as a resource. These techniques, such as surveys, suggestion box and feedback are well known to be used in the idea generation and screening phase (Alam, 2002; Nambisan, 2002). For example, RUB conducted 2 major Internet based surveys to understand the customer satisfaction and dissatisfaction with the provided services before and after a campus relocation of the library facilities and has tried to make changes as a result. As the customers were less satisfied with the consultation services and reference assistance provided by RUB librarians after the relocation, a new type of consultation service was introduced where groups of students that have to write a common project can schedule a number of consultation sessions with the aim to get library support for their specific project.

”We have made two quite comprehensive customer surveys and some smaller ones. We made one before we moved and another after being here one year. (..) There was bigger satisfaction being here, however, our advising and teaching was scored lower. We wanted to find out why. We introduced this, in between thing, which is named project librarian. I don’t know if this is an innovation, it is an answer to a reaction pattern that we saw. It

originates from some concrete experiences. We like to test the ground and try to find answers to what we see." " (Head of reader services)

RUB also has an online praise/complaint box where customers can provide their comments on an ongoing basis. For example customers write about how nice they find the library services provided by RUB or complain about the prohibition of drinking and eating in the library buildings. RUB also uses the consultation services or reference assistance sessions to collect feedback from the customers that can be useful in services innovation. Sometimes this happens in an unconscious way as showed by the following quote:

"Ideas may come from the supervision sessions. Often when you talk about things, they develop." Line Manager

New ideas may also come from the information literacy training sessions between librarians and students, especially freshman. As a librarian states:

"Yes, I would say in relation to teaching it is exactly there where you get (ideas). I get ideas to do things in another way or to develop and to do things so and so. It is often because the students ask. …It is not only a question of doing new things, it is also a question of being aware of, maybe, you should stop this." Line Manager

To conclude, in the role customer as a resource, ideas can be generated in different ways. Ideas and inputs are often given as part of receiving a service and are thus formulated in an informal way. This makes the employees extremely important if any of these ideas should lead to any innovation. Many inputs are generated from existing users in the everyday use of the library; therefore there may be a potential overlap between these inputs and the inputs gotten in the role customer as user. The customers are seldom asked in a formal way to provide input or thinking differently about potential library service innovations. However, the praise/complaint box does provide a channel for input and comments in general. The input provided is however closely related to evaluation of the everyday practice and may provide us with an explanation of why customers only contribute with ideas for small incremental innovations.

2.2. Customer as Co-creator

Customers as co-creators may be customers that actually help developing new types of services or, as in our case, being co-creators by providing part of the content. In fact, RUB is launching an electronic service where customers can write recommendations or reviews on library material

such as books or articles. When customers provide this input they take on a role of co-creator by contributing with the content of the service. Web 2.0 and social networking has given room to the new trend of user generated content. However the IT department manager shows concerns regarding how many customers actually want to get involved in this kind of electronic services. As the service is relying on the customer provision of content, motivating customers to act as content providers is seen as a major challenge. However it may also be a problem if customers in the role of"content consumers" do not view this input as value adding.

> *"There are surely lots of customers that would like to have it (the possibility to write and see reviews), but I have also heard people say that they would like to have a button that closes all that social, a simple solution." IT Department manager*

Finally, customers could be more integrated in the co-creation of services by giving them a more active role for example in screening ideas or providing input on the design. However, the current practice at RUB is first to come up with an almost finished service and then test it among the users. These results are in line with Rutherford (2008b)'s results obtained in public libraries showing that while social software is not currently being used to its fullest extent in public libraries, public librarians are exploring the meaning and potential of this new technology.2.3.

2.3 Customer as a user

As the literature shows (see Table 1), the role customer as user is mostly common in the implementation stage, which often takes place through pilot runs or testing (e.g. Alam and Perry, 2002; Nambisan, 2002). We found that this role is the most relevant in service innovation at RUB. We have identified a number of different ways in which the customer may contribute to service innovation in this role: 1) by providing feedback such as dissatisfaction with existing services; 2) by contributing to the testing of electronic services; 3) by leaving traces of customer behavior in the online system; 4) by being observed with different observational techniques to reveal usability issues.

As already found in previous literature (e.g. Alam and Perry, 2002; Alam, 2002), the library customers can give feedback due to dissatisfaction, like difficulty to find the way around in the system or wishes for improvement of a given service. This is what is often received in the praise/complaint box at RUB. Talking about the newly introduced web-based forms to make online reservations, the head of reader services says:

”They (customers) criticize our web based forms, words such as ”interlibrary loans” is being used…the forms can apparently be misunderstood, …so we look at it…it is our web committee that looks at it …” ”Sometimes there are some (customers) that are unsatisfied and then they say this does not function well and why don’t you change it and so on ...” Head of reader services

Customers can also be proactively exposed to a service early in the development phase or can be solicited by the library employees to give feedback in such a phase as also found in earlier studies (e.g. Nambisan, 2002; Alam and Perry, 2002). Customers may be directly approached by RUB employees or the service may be partly hidden making only a small number of customers finding and using it. Sometimes when customers approach the development team with questions they are invited to provide feedback. This feedback eventually informs the decision of whether and when to move the electronic service from test phase to permanent launch phase. As the IT department manager says:

“It has strengthened us to make it (an electronic service) more visible to users in the test phase and then we say so it is time to go from test phase to a permanent launch of the electronic service and get the project accomplished. It is among others a service to search full text across different databases. ..There we get customers that say that this is really exciting, but it takes long time to find out about it ..And it is right that we hide it a bit…”IT department manager

The users can also be observed making a usability study to find out how they use a given service and which barriers and difficulties they find in using it as also found in previous literature (e.g. Alam, 2002). For example in the development and testing of an electronic service called “Quick Search”, RUB employees used both observational techniques as well as user feedback to find good solutions for improvement.

“There (Quick Search) they used feedback from the customer and observation techniques to understand where the problems are and how to improve it…how we can make it simpler”. Head of reader services

By using electronic services, customers indirectly provide library employees’ with important log data which can be used to run statistics about electronic service usage patterns. These data can then be the base for further inquiries such as surveys, observations or focus groups. This

information can eventually be used to stop some types of electronic services or investigate why they are not used as much as expected. Customers also provide the library personnel with content data in the form of e-mails or chat sessions. As the IT department manager states:

> *"We try to make statistics with that (data), we try to see how many people contact us …and then we try to look at the content of these things" IT department manager*

In an electronic service called "chat with a librarian", customers were directly involved in trying out the new service in the test phase. It has been through these interactive chat sessions with the customer that the library realized that the system had to be changed and improved in order to reach a critical mass of users. A line manager that has used the chat service to provide student supervision states:

> *"At the beginning… we experienced too many times via chat that we should sit and write with two small fingers "do you see the same as me?"…But you can say that our chat as we have used it ... has been an experience. To say does this function the right way and should we de facto be able to provide supervision at a distance, then we have to have a system that has such and such functionalities. "Line manager*

However the chat system was also directly evaluated by the users in the test phase. Every time a chat session ended, the users were given a small web based questionnaire with 6 questions asking them whether they got a sufficient answer. To decide whether the chat service should become permanent, data from the log files, the questionnaires and the content of the chat sessions was used.

> *".. There is a small questionnaire, where they can tell whether they are satisfied with the answer. I can't really remember it, there are six questions. We are very aware of experimenting" Head of reader services*

The library also has some other visions on how to use logged data to develop other electronic services or to improve existing services. The information provided in the chat sessions and especially the questions that customers ask can be used to improve the "chat with a librarian" service or to develop new ones such as Frequently Asked Questions (FQA) or a chat bot, where it is the computer system that answers the customers instead of the librarian. To conclude, the role "customer as user" takes many forms at RUB. Often this is done indirectly without the

customers even knowing it. However customers might also be invited to directly provide feedback by e-mail or filling in a small survey questionnaire.

2.4. Summing up customer involvement in library service innovation

In Table 2 underneath we have summarized the different roles that library customers take or are expected to take in library service innovation. The forms in which customer involvement is supported are many. As already mentioned some of these provide indirect input obtained by customers actually using the services by for example leaving digital traces or by becoming part of the employees experience base. However they may also be more actively involved by being invited to fill in surveys/questionnaire, providing feedback to the employees either face to face or through email.

Table 2 Customer involvement in library services innovations-roles, methods and examples of ideas

Roles	Methods to obtain input	Examples of user generated ideas
"Customer as resource"	Online praise/complaint box	Coffee and food consumption in the library Suggestions to change opening hours
	Web-survey	Input on likes/dislikes of customers regarding the issues asked for
	Consultation Services/Reference Assistance Sessions	Explicit suggestions/requests for new services or changes in given services
	Information Literacy Teaching Sessions	As above Adjustment of the service as given and/or for future teaching due to response from the participating students
"Customer as co-creator"	Web 2.0 Use of electronic service	Content creation in recommender system
"Customer as user"	Online complaint box	Criticism of web forms
	E-mails to the development team	Direct feedback about testing electronic

		services
	Usability study- observational techniques	Indirect feedback about testing electronic services
	Small questionnaire directly after ended session Statistics on log files Examining saved sessions	Testing electronic services – in general
	Feedback during session Communication services (e.g. Chat)	Future system requirements

Discussion, practical implications and conclusions

Overall we found that RUB involves customers in service innovations, even though in a limited way. Traditionally this has happened either through the employees' understanding of user needs gained in the face to face service provision or through conduction of big surveys asking customers their opinion on library services or through a complaint box. During the last few years the development of the virtual library has provided new opportunities. For example innovations such as electronic services have provided a digital information base that can be used to analyze online customer behavior on the base of log files and other digital data. The interaction between the library employees and the library customers through electronic services such as "chat with a librarian" has provided RUB with data that can provide indirect information about customer needs and wishes. In general, very limited dialogue with the customer is pursued and no direct invitation or proper channels for suggestions or inputs are given, except a few as for example the online complaint box. We also found that a systematic approach to customer involvement from RUB management is lacking. Regarding the internal organizational processes for innovation, we can distinguish two trends. Radical or significant incremental innovations are dependent on support and approval from the management group. Small incremental innovations take place locally at different levels and places in the library, mostly on an ad hoc base (Gallouj and Weinstein, 1997). With respect to customer roles in service innovation, our findings show that customers participate to service innovation mainly through the roles "customer as a user", which is the most important one, and "customer as a resource". The role "customer as co-creator" is only about to be introduced in the form of content provider – not service designer. This implies

that customers are mainly involved in the implementation stage of the innovations and are given very little power and influence in the innovation process. This approach is rather traditional and rest on using traditional methods such as surveys which primarily help to understand customers' use of the existing services (e.g. Nambisan, 2002). On the other hand, the fact that the customers have a more important role in the implementation than in the initiation phase could also be explained by the fact that library electronic services (e.g. Bitner et al. 2000) are fairly new and customers have little awareness on how new technology such as for example Web 2.0 might result in valuable electronic services. RUB does not employ any of the well known methods for customer involvement such as creative workshops, lead users, user toolkits (von Hippel, 2001) or idea competitions (Walcher, 2007). Instead, RUB is relying on well known techniques such as survey questionnaires, usability studies and online mail boxes. These methods have been used several times at RUB and they are familiar to the library employees. In addition RUB management perceives customers as being too conservative and not able to think out of the box. It can be argued that the applied approach is limited and self-fulfilling due to at least two reasons: 1) customers are only asked about what is, not what could be; 2) customer input is primarily got through indirect data and understandings, meaning the library employees mostly look at the customer behavior derived by digital data and surveys without asking the customers why this is the case. It is thus the employees understanding of use patterns rather than the customers own explanations that are revealed.

By reflecting upon the literature on customer involvement in service innovation and our analysis it seems possible for RUB management to get more input from the customers by involving them differently, more actively and in other roles. This could be pursued for example 1) by inviting customers to participate in creative workshops taking on different customer roles and 2) by the library identifying and involving lead users. Such an approach would allow the RUB to actively involve customers in the initiation stage of the innovation process as it has been found in other contexts (Magnusson, 2003; Magnusson et. al, 2004; Matthing et al., 2004; Kristensson et al (2004). However, we found that RUB management is aware of the existence of few lead users (von Hippel, 1986) that might be able to provide valuable insights for innovation and they would like to get a hold on. In addition we found that RUB uses information and communication technology (ICT)-based methods such as online surveys, online mail boxes, chat and log data to involve customers in direct or indirect ways. On the other hand ICTs and social networking tools

also pose challenges. For example with respect to the role of the customer as co-creator as in the case of online reviews there is the problem of motivating the customers to write and read the reviews or ethical problems regarding content analysis of qualitative data as in the case of "chat with a librarian", where employees feel monitored if an analysis of the chat data content is conducted.

1. Limitations and further research

This study is not free of limitations. First of all most of the literature used in the study comes from the business context and it is applied to a library context. From a methodology point of view, we only conducted in depth interviews in one academic library. Even though the Danish academic library landscape is becoming very homogenous and therefore the library investigated might be to some extent representative of other Danish academic libraries, we still cannot generalize these results to a Danish national context and especially internationally. Also it could have been interesting to investigate the customers' perspective. We plan to involve them in a second phase of the research.

Nevertheless the study provides interesting insights about customer involvement practices in services innovation in a specific academic library, thus contributing to the debate on innovation and especially user driven innovation in academic libraries. Despite our study investigates a rather particular case we may draw some theoretical insights that possibly address customer involvement in general. One of these insights is that the way a library approaches and allows customers to become part of and contribute to the innovation process might affect the type of input gained from the customers. Secondly, Alam and Perry (2002) argue that companies value the input from customers as resource and user as most important. However based on our study we propose another explanation namely that these roles are less demanding and possibly also less costly and risky to engage in. Involving customers as co-creators are far more demanding as the involvement complicates the development process and demand for other qualifications of the employees in order to manage such a process.

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