Multi-dimensional focus of IT Strategic approach for Value Co-creation

A study of customer’s experience in online banking service system

Dhanalakshmi Arumugam Malar
Abstract

Service-dominant logic is the co-creation of value-in-use with service systems resources and customers. This study aims to approach strategy for value co-creation process from customer's perspectives on self-service technology. For that, a case study was conducted about the customer's experiences on creating the values when using the online banking service. The thesis begins with the introduction about the potential of IT in service-dominant logic with service systems, related literature and theoretical framework of value co-creation as value-in-use/value co-destruction. Further, this study has analyzed the risk factors, challenges and complexities that occurred in service systems in the perspective of value-in-use/value co-destruction. Based on the findings, I have approached the multi-dimensional focus of IT strategic (flexibility, comfortability, effective information entity and customer-centric network) approach to increase customer participation in value co-creation process. This approach could be helpful to improve the quality of service systems in self-service technology and to understand customer’s reality during value creation process.

Keywords: Service-dominant (S-D) logic, Value co-creation, Value-in-use, Value co-destruction, service systems

1. Introduction

Increasingly, firms are integrating information technology (IT) with the potential to fundamentally alter the nature and the role of services. The customer plays an important role here, in which co-creation of value under the lens of service-dominant logic (S-D logic) was studied extensively (Cova & Dalli, 2009). Basically, IT is increasingly reaching a strategic role in contemporary organizations (Westergren & Holmström, 2012; Holmström, Wiberg & Lund, 2010; Rönnbäck, Holmström & Hanseth, 2007; Sambamurthy, Bharadwaj & Grover, 2003) and in addition to this it has the potential to enhance the capacity of firms to sustain competitive advantages which includes strategic potentials (Nevo & Wade, 2010), strategic benefits of IT enabled resources (Nevo & Wade, 2011) and the awareness of strategic value of technology in organizations (Baptista, Newell & Currie, 2010). Moreover, IT serves as a tool, an output, an instrument for generating the co-created value in contemporary firms (Grover & Kohli, 2012). IT strategy plays an important role among contemporary firms, and for this reason, an information system researcher argues for a cross-functional approach to IT strategy (Bharadwaj, 2000). Against this background Maglio & Spohrer (2008) emphasized that the service systems involves the dynamic value co-creation configuration of people, technology, organizations, and shared information under the lens of S-D logic.

In order to approach IT strategy for value co-creation process from the customer's perspective, I have searched the available literature about S-D logic associated with service
systems. The concept S-D logic is an emerging new dominant logic for marketing which was first published in the ‘Journal of Marketing’ under the title ‘Evolving to a new dominant logic for marketing’ (Vargo & Lusch, 2004a). S-D logic is an alternative to the traditional, foundational and goods-dominant (G-D) paradigm for understanding economic exchange and value creation in marketing. S-D logic is grounded with ten foundational premises which highlight the value co-creation process, and that happens only when a customer is involved as a co-creator of value (Vargo & Lusch, 2004a, b, 2006, & 2008a; Lusch & Vargo, 2006a, p.181). S-D logic has emphasized that the operant resources of knowledge and skills are the basic fundamental resources of value creation process.

One of the key foundational premises of S-D logic is “customer is always a co-creator of value” (Vargo & Lusch 2004a, 2006, 2008a). Customer value creation process has been addressed by number of researchers (e.g., Woodruff, 1997; Holbrook, 1999) and according to them the customer value, customer value learning and related skills play an important role in creating and implementing superior customer value strategies (Vargo, 2008). Customers have actively participating in value co-creation process and have been well recognized benefits for firms to sustain competitive advantages. It reflects the changes occurred from G-D logic into S-D logic in marketing. However, limited researches have been conducted on how to engage the customers in the co-creation of value in the context of S-D logic (Woodruff, 1997; Flint & Mentzer, 2006; Payne, Storbacka & Pennie, 2008). In particular, in the context of self-service technology, only little literature is available on how to encourage customers to participate in future value co-creation when service failures occur (Dong, Evens & Zou, 2008). This thesis is focused on the following research question:

“How can service quality be enhanced by increasing customer participation in value co-creation processes?”

To investigate this research question, I have made an empirical study on online banking service systems from the perspective of customer’s experiences. In particular, I have examined the value co-creation process associated with the online banking service to explore how to increase customer participation in value co-creation processes.

The present thesis covers the following points:
1. Background literature of S-D logic related with service science on value co-creation context and related concepts.
2. Describes the theoretical framework on value co-creation as value-in-use and/or value co-destruction processes.
3. Methodology employed in the case study and interpretation of the case study data with respect to customer’s experiences on value-in-use.
4. Finally, I have discussed about approaching IT strategic importance on the context of value co-creation process in self-service technology through the findings that I analyzed in results section and I concluded the importance and outcome of the thesis study.
2. Related Research

2.1. S-D logic

S-D logic is an alternative view of goods-dominant logic for the study of economic exchange and value creation in market. S-D logic mainly focuses on the service and its central process for value creation is the application of competences for the benefit of another party and treats goods as a vehicle for service provision (Vargo & Lusch, 2004a, 2008a). S-D logic is grounded in ten foundational premises that are described in Appendix A. Williams, (2012) described the relationship between the ten FPs in two ways in the form of logical structure of S-D logic. First, the relationship shows that six foundational premises (FPs 1, 2, 3, 4, 5 & 9) are involved in service and remaining four foundational premises (FPs 6, 7, 8 & 10) on the nature of value. The following 3 key features are important to understand the relationships among the ten FPs.

1. The definition of service as the integration and application of operant resources for the benefit of another party.
2. The observation that providing service may or may not involve physical objects and if it does, that objects are a means to provide the service (a ‘transmission mechanism’)
3. That objects have no value in themselves, they only have (potential) value as much as they can render service. Value is not stored or exchanged; it is created. Value is not a property of objects or acts; it is a human cognitive process.

S-D logic contains ten foundational premises for the concept of service and it is playing central role in economic exchange and to sustain competition advantages (Lusch, Vargo & O’Brien, 2007). Vargo & Lusch, (2008c) re-emphasized that the ‘service’ is the primary basis of economic exchange in marketing through exploring the new conceptual lens of S-D logic and highlighted that the role of ‘service’ is the heart of value-creation process. The application of S-D logic not only focuses on the development of service but is also grounded in a firm’s collaborative processes with customers, partners and employees. A firm’s exchange partners have been recognized as those who are engaged in the co-creation of value through reciprocal service provision (Vargo & Lusch, 2008a, b).

Another stream of marketing research focuses on developing the service science related service systems. The emerge of S-D logic is argued to provide the philosophical and conceptual foundation for the development of service science and it has the potential of taking the perspective of value co-creation to incorporate in service systems (Maglio & Spohrer, 2008). According to S-D logic, a service system is defined as the value-co-creation configuration of people, technology, value propositions connecting internal and external service systems and shared information (e.g., languages, laws, measures, and methods). Service science is the combination of organizations and human understandings with business and technology (i.e., categories and types of service systems) (Maglio & Spohrer, 2008). Then, service science research primarily questions, how service systems interact and evolve to co-create value under the context of S-D logic? Because of these issues, the authors Lusch, Vargo & Wessels (2008) were refocused to create the appropriate conceptual foundation for service science under the lens.
of S-D logic by considering the emergence of value creation process in market. For that, they invited other researchers to improve the concept of S-D logic. Vargo & Akaka (2009) highlighted that S-D logic as a foundation for service science and concerned with the interaction of value co-creation among service systems. At the same time, authors Maligo, Vargo, Caswell & Spohrer (2009) argued that the service system is the basic abstraction of service science, to understand how value is co-created by the integrated science of service. The formation of key concepts associated with S-D logic and service systems (Vargo, Lusch & Akaka, 2010) may help to understand and used to interact with value co-creation process. Finally, S-D logic has the potential to become the platform of service systems.

It is not a surprise that many marketing articles argue that the value co-creation process with customers is critical for marketing since on what has become known as “service-dominant logic” (Vargo & Lusch, 2004a) because customers contribute more towards the process of marketing, consumption, and delivery of products/services. However, encouraging customers to be “value co-creators” is considered the next frontier in competitive advantages (Dong, Evens & Zou, 2008). Then, Vargo (2008) incorporated the idea of customer integration and value creation in the perspective of CI-FTU (Customer Integration-Facilities, Transformation, Use) framework of Moeller as a platform to improve the concept of S-D logic. The authors Vargo, Maglio & Akaka (2008) argued about the development of service science through re-conceptualizing value and value co-creation concept. It has enhanced as a primary framework to develop the value configurations space and processes of value co-creation. It could be helpful to measure the process of value-in-use with customer by re-thinking value and value co-creation among service systems and service logic in other service-oriented disciplines.

2.2. S-D logic related with service science and service system

S-D logic is the philosophical and conceptual foundation of service science (Vargo & Akka, 2009) and service system is the basic abstraction of service science (Maglio et al., 2009). Because, service science is an emerging discipline concerned with the evolution, interaction, and reciprocal co-creation of value among service systems. Moreover, service science is an interdisciplinary field that “combines organization and human understanding with business and technological understanding to categorize and explain about many types of service systems that exist, as well as how service systems interact and evolve to co-create value” (Maglio & Spohrer, 2008). On the other hand, service system is defined as “value-co-creation configuration of people, technology, value propositions connecting internal and external service systems and shared information (e.g., languages, laws, measures, and methods)” (Spohrer, Maglio, Bailey & Gruhl, 2007). Service systems contain one or more activity process which is performed by one or more actor roles that may be customers or automated agents. However, activities always use one or more resources with the service system which may provide value or enable value co-creation by customers. The tool of Resource-for-action (RA) framework can be used to analyze the quality of the design or operational view of service activities in service systems (Alter, 2012).
3. Theoretical Framework

3.1. Value co-creation as value-in-use/value co-destruction

Fundamentally, the notion of value co-creation process mainly focuses to obtain the value-in-use and under the view of S-D logic consumers play the role as value co-creators (Vargo & Lusch, 2004a). The aim of value co-creation is to enhance organizational knowledge processes by involving the customers in the creation of meaning and value. Co-creation transforms consumers into active partners for the creation of future value. The rationale behind this is that “there is no value until an offering is used and experience, perceptions are essential to value determination” (Vargo & Lusch, 2006, p.44). According to Vargo & Lusch (2008a) the meaning of value co-creation as value-in-use is relational and reciprocal, and the idea of customer as a co-creator of value is captured mainly on the basis of perceptions and experiences. A rich literature review of value co-creation demonstrated that interaction, dialog, involvement, and consumption between service provider and customer play an important role in the co-creation of value (Cova & Dalli, 2009).

On the other side, Plé & Chumpitaz Cáceras (2010) highlighted that there is a possibility of value co-destruction rather than value-in-use in value co-creation process. According to S-D logic, the notion of value creation is “a collaborative process of co-creation between two parties” (Vargo & Lusch, 2008c) and the value in this context refers to value-in-use for these parties. Moreover, service systems are proposed to co-create values through interactions and application of resources between the parties. However, value might also be co-destroyed through such interactional process under value co-creation, because, “value co-destruction can be defined as an interactional process between service systems that results in a decline of at least one of the systems well being” (Plé & Chumpitaz Cáceras, 2010). The result of value co-destruction might also depend upon the level of imbalance between the firms and the customers. At the same time, the result of co-destruction may not be the same for all the service systems involved in the process of co-creating values (Woodruff & Flint, 2006). In addition, value co-destruction proposes the key term ‘misuse of resources’ which refers to the integration and/or application of the available resources by one service system in a manner that was considered unexpected and/or inappropriate by the other service system. Such misuse might be purely categorized into accidental misuse and intentional misuse of resources (Harris & Ogbonna, 2006; Plé & Chumpitaz Cáceras, 2010).

4. Research Methodology

4.1. Research site

According to the new fundamental logic of value creation (Vargo & Lusch, 2004a), State Bank of India (SBI) is the largest government banking service in India. SBI was founded in 1955 and it was originated when Bank of Calcutta came into existence in the year 1806. In the early years, SBI was used to create the values and provide its services to the customers through service
employees. Later, SBI has changed its fundamental logic into new fundamental logic, i.e., SBI bank has reconfigured the manual process of value creation into computer based value creation process. Then SBI has implemented ATM service centers for its customers to withdraw money by themselves. After some years, SBI has introduced the online networking service system for its customers. The continuous IT based innovation in SBI has resulted in notable increase in its customers. The SBI bank has increased its values by developing new segments such as strategic tie ups for pension funds, general insurance, custodial services, private equity, mobile banking, POS merchant acquisition, advisory services, a slew of new structures products, etc. Through these types of co-created values, more and more number of customers is attracted to invest their money which resulted in gradual increase of SBI market shares among other competitive banking sectors in financial services.

SBI provides a range of banking products through its vast network of branches in India and overseas, including products aiming the non-resident Indians (NRIs). Because of this, NRI customers are also creating their own values by FOREX transactions into SBI accounts. SBI often changes the logic of services very fast through IT based innovations. Depending on the needs SBI customers enjoy the privilege of co-creating their values through online banking service systems. SBI branches are spread over 32 countries and often, SBI is reconfiguring its service into a new service-dominant logic of value co-creation process because of the significant role of IT innovation in a strategic view. Presently, SBI bank is focusing to develop ahead in the competitive sector with cutting edge technology and innovative new banking models.

4.2. Data collection
The findings reported in this document are based on a qualitative study. The data was collected through semi-structured interviews (Yin, 2003) and the related information was gathered from the website of SBI bank. Mainly, I have focused on the analysis of online banking service systems using SBI bank and its customers. The semi-structured interviews were conducted in-depth with the online SBI customers. I have conducted ten interviews in total and the duration of each interview was about 35-50 minutes. It includes three face-to-face interviews with NRI customers of SBI residing in Umeå, Sweden while the remaining six interviews were on phone with customers using online SBI saving account. All the interviews were tape recorded and transcribed. The interviews were structured with the framework of questions concerning the value co-creation processes according to the use of theoretical constructs to guide theory building research. Such a framework becomes a “researcher’s first cut at making some explicit theoretical statements” (Miles & Huberman, 1992, p.91). The interview questions were taken in the form of an open dialogue and questions were posed depending on the customer’s response. The interview questions were mainly based on the values created by the customer through the available service activities in online SBI bank website. I had considered the capability of the customers to understand the information provided on the help desk about the new service activities, and their experiences with online service. I have actually concern about the problems the customers face with online services during the value creation process associated with
integrated mobile device. In this situation, it is important to stop conducting new interviews when theoretical saturation has already reached as new information is not available from the customers (Eisenhardt, 1989; Glaser & Strauss, 1967).

4.2.1. Value added services in SBI

To support my understandings and to structure the interview questions, I have made the service activity resource table (Table 1). The data given in the table is collected from the website of SBI banking service in order to analyze the value co-creation process from customer’s perspectives.

<table>
<thead>
<tr>
<th>Service Activity (Value Added Service)</th>
<th>Functions</th>
<th>Value Creating Resources (Facilities)</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-TDR/e-STDTR</td>
<td>Get a fixed deposits instantly</td>
<td>Available to open term deposits in online</td>
</tr>
<tr>
<td>SBI e-Tax</td>
<td>Pay direct, indirect &amp; state government taxes online</td>
<td>Available to pay any kind of central and state government taxes</td>
</tr>
<tr>
<td>SBI e-File</td>
<td>Fill your income tax returns online</td>
<td>-</td>
</tr>
<tr>
<td>SBI-Instant Pay/SBI-oxipay</td>
<td>Make instant payment for utility bills</td>
<td>Electricity bills, telephone bills, mobile top-up, DTH recharge, etc.</td>
</tr>
<tr>
<td>SBI e-Ztrade</td>
<td>Buying &amp; selling of shares</td>
<td>Stock market trading, Gold trading, NRI trading, etc.</td>
</tr>
<tr>
<td>Fund Transfer</td>
<td>Transfer funds to any bank accounts</td>
<td>Available to transfer funds to inter and other banks</td>
</tr>
<tr>
<td>E-tickets</td>
<td>Booking travel tickets in online</td>
<td>Trains, flights, hotels, tourism and others</td>
</tr>
<tr>
<td>Online Shopping</td>
<td>Shopping in time saving &amp; more enjoyable experience</td>
<td>Available to shop any online products</td>
</tr>
<tr>
<td>Mutual Fund Investment</td>
<td>Future plan to invest money for lifetime income</td>
<td>Equality scheme, liquid scheme, hybrid scheme, fixed maturity plans, etc.</td>
</tr>
<tr>
<td>Online Fees collection</td>
<td>Examination fee collection in online</td>
<td>Available to pay SSC &amp; UPSC examination fee</td>
</tr>
</tbody>
</table>

Table 1: Service Activity Resource Table

4.3. Data analysis

Data analysis is mainly based on the collected data from the service activity resource table and their supporting activities on value co-creation from value propositions. In addition, data analysis is based on value added services as resources from the empirical data in the online banking service. Each value adding service is considered during the analysis of data with the customer’s experiences and their perceptions. Customers are considered as the respondent of the
service activity resources currently available on the online SBI service systems and necessary questions were raised in the perspective of value creation process. For example:

“How integrated resources are flexible to create value and the provided information is effective to end up the value-in-use? In which situation, service system resources are becoming complex during value co-creation process?”

5. Results
The findings reported in this sections mainly focused on the customer’s experiences in the given online service system resources and other integrated resources on value creation processes. In particular, the results section is categorized into three parts: 1) Risk factors in the integrated resources with online service, 2) Challenges for value co-creation process and 3) Complexity in online service systems

5.1. Risk factors in the integrated resources with online service
SBI bank has implemented the S-D logic associated with the interaction of service system resources through providing online banking service systems for their customers (described in section 4.1.). The offered value adding services has shown in the service activity resource table (Table 1). The SBI customers those who have the capabilities to involve themselves for creating values through online banking service were only benefited with this system. From the perspective of security issues, online banking service system and ATM service system resources were integrated with other service systems (i.e. Mobile integration). Whenever value co-creation process is happening in the customer’s account (i.e. taking money from the ATM center, transferring and receiving money etc.), the corresponding information is received as a text message in their mobile device which is integrated with banking service system.

Generally, customer’s co-creation of value processes is taking place through interactions and application of given resources in the following way: Customers interact with online banking systems by applying own resources to fulfill their needs. In order to complete their value creation process by themselves, customers should type the security code (received to their mobile device) in the displaying webpage and after that only the value co-creation process will be successful which refers to value-in-use (Figure 1).
From the customer’s perspective, the information which I have gathered about the process of value co-creation from online banking is as follows:

“During money transaction, sometime the security code was not received on time to their mobile device which makes the customers to consider a mistake from their side and they have to repeat the process again and again until they receive the transaction code. By using the security code received on the mobile device sometime the transaction is successful and sometimes it might be just an error message with incorrect code number. By the time the customer receives the correct code the webpage might have shut down automatically which makes the customer to re-login for visiting the same webpage. Because of these problems the customers complain that the service systems have become more complex to them to use.”

Two customers told the difficulty they have faced due to the integration of mobile device with banking service system: First one said that:

“If I lose my mobile, I cannot do any transaction with my online banking service. In this situation, I cannot add new mobile number to the banking service system because; there is no option available to add mobile number in the online banking system.”

Second one said that:

“I am in a situation to keep the same mobile number for long time because of this integration and lack of options in online system to change the mobile number. Because of this issue I feel uncomfortable to use this bank service.”
The advancement in service innovation and to manage competitive advantages, SBI Bank has introduced new value added service activity that is NRI account for the NRI customers. NRI referred to Non Resident Indian which means that those who are residing in foreign countries can able to open NRI account from SBI bank. But the processing system for value co-creation is same as described in Figure 1. However, NRI customer told that:

“I am in a foreign country. I have NRI account but the account is integrated with Indian mobile number and there is no option available to integrate my foreign mobile number. Because of this issue, if I want to do any transaction, I am in a situation to depend on another person those who are living in India because, they can only receive security code and I have to call them to get that code to complete my transaction.”

The following are some of the risk factors that I have found from the above described empirical data during the analysis of customer’s experiences regarding the integration of mobile device with online banking service system for value co-creation process
1. The time delay to receive security code on integrated mobile device.
2. No available option to change mobile number in online banking service.
3. Affecting the value creation process when the integrated mobile device was lost
4. Imbalance in value proposition system for NRI customers.

5.2. Challenges for value co-creation process

In self-service technology, value-in-use is the outcome of value co-creation process through the customers which is expected by the value proposition based service providers. However, self-service technology can be possible to become a big challenge for value-in-use with customers if they have not able to get their needs from it. For example, in online banking service system, currently available service activity resources are making challenges and difficulties to create value co-creation processes for customers in some cases. And value co-creation process is also depends upon the capability of the customers and quality of service systems resources. Challenges for value co-creation process in online banking service system are described from the customer’s experiences as follows. For instance, new account creation through online banking service is available, but customer said that:

“New account creation is included in online banking service. It is more useful and saves time rather than direct visit to the bank. However, after filling all the necessary information and while attempting to submit the application form, the process was not successful and it shows the error message “contact branch”.

Another challenge is that:

“Employees from the banks are less interested to provide the online banking services to the customers living in non-urban areas because, these customers are not familiar about online banking system and they frequently calling bank
employees to get help regarding the process on online service. They are not willing to spend time for them.”

Help desk information in online banking service is playing important role for the customers to fulfill their needs by themselves. However, it depends upon the quality of the information on help desk and how efficient it is in helping the customers and also depends on the capability of the service providers. Regarding the help desk customers told that:

“The given help desk information is not sufficient for the new customers to start the process by themselves. Banking service providers should think about providing help desk in a simple manner and must be understandable by common people.”

Fund deposit and e-tax service activity is also become a big challenges on value co-creation. It is newly introduced in the online banking service because of service innovational changes and to manage the competitive advantages. But the available new service activities are not much effective in online banking to create the value through customers. One customer said that:

“I don’t like to do fund deposits through online system because of less knowledge and lack of confidence due to less available information on funds deposit. If I directly visit bank, I would get more information and it is possible for me to ask and clarify all my doubts. This would not be possible in online banking service.”

Even in the case of e-tax service activity customers are facing the same problem and according to one customer:

“Paying tax is one of the most important and sensitive processes to everyone and I am not willing to take risk in this process by using online banking service.”

Commonly, language option is also one of the challenges for value co-creation in online banking service, and is acting important role among the customers. In India, people prefer to speak their regional languages and English is not familiar language for most of them. This variation creates big challenge for co-creation of value from customer perspectives. Regarding this one of the customer told that:

“SBI bank is the centralized service systems in India; however, they were not providing the language options in the online banking systems as like in ATM services.”

The following are some of the challenges that I have found from the empirical data during the analysis of customer’s experiences and their perceptions when they create the values while using online banking service.

1. Difficulties in creating new account through online service system.
2. Language options are not available in online service system.
3. Ineffective and lack of awareness about the benefits of new service activity.
4. Service employees are less interested to guide and provide online service for their customers.
5. Imbalance of value proposition in new service activities.
5.3. Complexity in online service systems

Value propositions from the banking service for customers on value co-creation also become complex rather than flexible and not easy to do it. Adding the account number and transferring money are the common processes that the customers do in online banking service systems. Creating the value within the same SBI banking accounts (intra banking account or third party account) didn’t make any problem. However, value creation processes become complex with other banking account (inter banking account). One of the customers told that:

“In order to add inter banking account number, the activation time takes 24hrs and while transfer money to that account, the transaction process also takes 24hrs. It makes the customers tense if they are in emergency situation. In that case, they feel online banking-service technology is not helpful whenever they require.”

The variation for adding the account number in different places is also making trouble for the new customers. That is, the same SBI account numbers were needed to add under the third banking link and other banking account numbers were needed to add under the inter banking link in the online banking service. But, new customers said that:

“When I wanted to add account number in online banking service I was much confused where to add it. Moreover, I have tried to get help from information desk given on online service and found it insufficient and discontinue to solving the issue. I think, every new customer will face the same problem when they try it.”

Recently, number of service activity resources is included in online banking service. However, trying the new service activity in online banking system for co-creation of value is the big challenge from the customer perspective. For instance, e-trading service activity is available in online banking system and according to one of the customer:

“I am more interested to try the e-trading service activity through online banking service. So, I have gone through the information provided in the help desk and actually it is given as a text format and I could not able to do the process; because, the process has ended up with the message “contact your branch.”

The following are some complications that I have observed from the above described empirical data during the analysis of customer’s experiences on the context of value co-creation in order to derive value-in-use in online banking service.

1. Online service is helpless for new customers to start their process.
2. Transaction time of 24hrs to transfer money to other banking customers.
3. Ineffective and lack of information about newly added service activities.
4. Discontinuous information has given in the help desk.

In summary, I have identified three different categories of problems (the risk factors, challenges and complexities) from the above described empirical data during the analysis of customer’s experiences and their perceptions concerned about value co-creation process in using online banking service such as:
1. The risk factors that I have found from the customer’s experiences were due to the integration of mobile device in online banking systems. Because, this integrated system has became a big barrier to create values from customer’s perspective.

2. The challenges that I have observed from the customers perceptions were due to the probability of risks involved in the newly introduced service activities in online banking system. Because, new service activities has become a big challenge to the customers and was out of their knowledge which led to reduces the customers well being.

3. The complexities that I have identified from the customer’s experiences were due to the imbalance of value propositions in online banking system. This has happened because; the customers faced more frustrations in order to derive value-in-use while using online service systems which led to bad perceptions about online banking service systems.

6. Discussion

The available literature on S-D logic and the service system for value co-creation have mainly focused to deliver the value-in-use to end up the processes which further changes the boundaries of the service providers. The most important traditional notion of value creation is that the customers are creating values by themselves when they are in need (Vargo & Lusch, 2004a, 2008a; Vargo et al., 2008). However the value-in-use and/or value destruction is the result of S-D logic with service systems (Lusch & Vargo, 2006a; Lusch et al., 2007; Plé & Chumpitaz Cáceras, 2010). As noted above, value is co-created through interaction of service systems that integrates the IT enabled services as resources and apply both their own resource and those of other systems on the notion of value-in-use. It means that operand and operant resources are used in the interaction process under the lens of S-D logic. According to Heiskala, Hiekkanen & Korhonen (2011) the information technology can be considered as an operant resource. But the literature that is available at present is not providing details on the nature of relationship between information system strategy and S-D logic associated with service science. The findings in the present investigation clearly shows that how can the service quality be enhanced by increasing the customer participation in value co-creation processes in order to derive value-in-use. An important insight that is structured out in this thesis is - multi-dimensional focus of IT strategy which includes flexibility, comfortability, effective information entity and centralizing customer network (Figure 2). There might be more possibilities to increase customer participation in value co-creation processes.
In the following discussions, multi-dimensional focus of IT strategy is approaching in three different aspects such as: 1) a strategy move towards flexibility and comfortability on the basis of risk factors associated with integrated mobile device in online banking service systems, 2) strategy of effective information entity in the perspective of challenges for value co-creation process in online banking service and 3) strategy of centralizing customer network with respect to complexities in online banking service. In this study, findings from customer’s experiences are mainly discussed concerning the occurrence of value co-destruction rather than value-in-use because of the absence of IT strategy under the lens of S-D logic.

6.1. A strategy move towards flexibility and comfortability

S-D logic focuses on value-in-use. It means that value is co-created through the interactions of service system resources which integrate and apply their own resources (Vargo & Lusch, 2006). As for S-D logic, service systems most likely are focusing to create values when interacting with the given resources and the application of those resources will lead to the delivery of value-in-use (Vargo & Lusch, 2008c). However, there is a chance for value co-destruction process rather than value-in-use. The occurrence of value-in-use is the outcome of value co-creation which depends upon the better integration and application of resources in the service system (Plé & Chumpitaz Cáceras, 2010).

For instance, SBI bank has integrated the mobile device with online banking service systems in order to receive security code to create values by themselves for the online banking customers. This means, service provider simply delivers value proposition, from which customers derive value-in-use (Figure 1). In this interaction, value co-destruction occurs due to intentional misuse of resources in the context of managing distribution channels (Plé & Chumpitaz Cáceras, 2010, p.434). Because of these integrations the online SBI customers are facing difficulties to change the mobile number that was provided at the time of creating their online account and there is no option available later on online service system to change it by them. Moreover, banking service employees are not giving proper response to the customers when they need to change their mobile number. It means that value co-destruction occurs due to the accidental misuse of resources in the context of role conflict felt by front-line service employees (Plé & Chumpitaz Cáceras, 2010, p.433). Receiving the security code depends upon the quality of the mobile network channels the customers have. In this situation, the given integrated resource (mobile
device) with online service system from value proposition turns out to be the barrier for value creation in order to obtain value-in-use. The process of value co-creation and value co-destruction is outlined in Figure 3.

On the other side of online banking service system for value creation process also have trouble due to this integration of mobile device. For instance, I described about the process of transferring money through online banking service in the results section (Figure 1). In that, customers want to wait to receive the security code in their mobile device in order to complete the transaction by the online banking service. If time exceeds more than five minutes due to weak mobile signal and/or unreachable signal areas, and so on - current transaction window become automatically signed out which makes more trouble for customers to complete their transaction. Then, customers want to re-login and repeat the value creation processes again. Value co-destruction occurs due to these risk factors associated with the integration of mobile device with online service system (Figure 3). Automatic sign out is implemented in the online banking service in the perspective of security issues. However, it makes the big barrier on value co-creation which leads to co-destruction of value rather than value-in-use. Value co-destruction
occurs due to the intentional misuse of resources in the context of managing distribution channels for value co-creation process (Plé & Chumpitaz Cáceras, 2010) that is currently available online banking service activities have imbalance in value creation processes for their customers.

In order to avoid value co-destruction, I propose that the flexibility and comfortability are the basic primary concern of IT strategic approach. Based on the customer’s perspective, flexibility and comfortability could be considered during the implementation of integrating resources in the self-service systems. Because, “customer is always a co-creator of value” according to the sixth foundational premises of S-D logic and they can only have the possibility to derive value-in-use through self-service systems (Vargo & Lusch, 2008a). Importantly, Vargo & Lusch (2006, p.44) argued that, the determination of value-in-use is identified through the experience and perception of the customers; otherwise “there is no value until an offering is used” under the notion of value creation in S-D logic. Moreover, service provider should think about to consider the resource-based view (RBV) with resource-for-action (alter, 2012) for the analysis of existing integrating resources in their service systems which enhances the effective service innovation in future.

Another example is, the integration of mobile device with online banking service system for value creation process is giving more trouble for NRI customers also. In the result section I have specified that the NRI customers have the only possibility to integrate their Indian mobile number with online service system to create their values. Due to this integration system, NRI customers have to depend every time on another person to create values through online service system. Because, security code is received only on integrated Indian mobile number to complete their value creation processes. It makes intentional misuse of resource from the perspective of value proposition which turned out to derive value co-destruction process rather than value-in-use (Figure 3). Value co-destruction has the potential to decrease the capacity of firm’s well-being (Plé & Chumpitaz Cáceras, 2010). Value propositions based firms should think about how IT enabled service systems would be in flexible and more comfortable for their customer in its value creation processes themselves. This type of integrated device with online service system has completely become a strong barrier on value co-creation in online banking-service technologies. I hope service providers think only about how self-service systems should be secured, they don’t think from the side of customer’s perspective. Therefore, flexibility and comfortability are the basic essentials of IT strategic approach and should incorporate in the IT enabled service systems in the alignment of S-D logic associated with self-service technologies.

6.2. Strategy of effective information entity

Accordingly, IT-enabled service activities and help desk information as an resources entities, which come under the category of technology entities and information entities respectively as per operational view of resource for action in service science (alter, 2012) and relationship with S-D logic (Spohrer, Anderson, Pass & Ager, 2008). In this perspective, IT-enabled service activity and their effective processes and help desk information are the entities of service system
resources playing an important role on value co-creation in online banking service. However, quality of service system entities depends upon the capability of providers of value propositions. The above three service system resources have the capability to initiate the customers which leads to make involvement on creating the values. Previously, value co-creation processes have happened between service employees and customers, in that, customers have more chances to clarify their problems from service employees and to get more information about the benefits of service activities. But, the given information in online banking service shows about benefits of service activity in a simple manner, and anyhow customers were less interested in involving in it because of lack of confidence, and feel lazy to contact the customer service (by phone or by email) to get corresponding information.

When the customers are trying to use the newly introduced service activities in online banking service with the help of the information provided in the help desk and if they succeed they can able to create their value which leads to value-in-use. On the other hand, if they are not succeeded then the service activity will fail to complete their needs. This is in turn might provoke frustration to the customers which leads to bad perception about online service systems. These results in value co-destruction for accidental misuse of resources (Plé & Chumpitaz Cáceras, 2010) because the information provided on help desk is ineffective under the category of IT-enabled service activity resources. Co-destruction process has capability to decrease firm’s competitive well-being and limits its capacity to adapt to its competitive environment.

Online banking service is totally depends on the IT-enabled service activity and their effective process and quality of help desk information as resources to get the outcome of values. In some cases, these resources are becoming a big challenge for value co-creation according to the above described results found from customer’s experiences. For instance, customers made an attempt to use the newly introduced online service activities like fund deposit, e-trading and e-tax by following the information provided on help desk. However they don’t want to take risk for completing these sensitive processes by themselves on online banking, as they consider the information provided on help desk is incomplete, and they don’t have enough knowledge and confidence to proceed. Newly introduced service activities are becoming a big challenge for value co-creation among online banking customers which leads to value co-destruction (Figure 3). Thus, in turn it might have affect on the customer’s personal well-being and their ability to adapt it. Due to these issues of accidental misuse of resources, value co-destruction occurs (Plé & Chumpitaz Cáceras, 2010) rather than value-in-use associated with customers (Vargo & Lusch, 2006, 2008a). Introducing highly risk based service activities in online banking service are becoming a big challenges for value co-creation from customer’s perspectives and their experiences. Description about the challenges for value co-creation process involved in newly introduced service systems suited with the argument of Domínguez-Péry, Areron & Neubert (2013) about IT-driven service innovations due to the lack of procedures, methods and tools for developing the new service.

In order to avoid value co-destruction due to the above specified challenges involved in IT-enabled resource entities for value co-creation process, I have proposed an effective information
entity as another IT strategic approach which has the capability to make the processes easier for customers to create values by themselves. So, resource entities are contributing important role on IT-driven service innovation for value co-creation processes to enhance the ability of customers. According to Vargo & Lusch (2004a), the customer's ability to create value often depends on the amount of information, knowledge, skills and other operant resources that they can access and use from their supplier or their environment. In addition, IT-driven based service providers should consider a technology of resources with the customer's reality in work practice.

6.3. Strategy of centralizing customer network

Increasing the IT-enabled service systems are would act as useful resources for customers during their own value creation process. Moreover, service systems are fulfilling their requirements via IT systems and technology – in a reliable, predictable, and consistent manner and probably more efficient than with human labor (Heiskala et al., 2011). However, the development and implementation of IT enabled service systems totally depends upon the capability of the firm and their needs. At the same time, service developers are mostly concentrated on fulfilling the requirements of their clients, and from the perspective of security, quality of the service systems and introducing the new technology. For that the newly introduced service system resources have become more complex in most of the value co-creation processes than the human based service system.

For instance, if SBI customer want to transfer money to customer using other banking services through online service system, then firstly the SBI customer has to add the account number of the receiver on inter banking link and this process might take about 24 hr to complete. And also while transferring money to inter banking account, the receiver will receive money one day later than the transaction dates. It means that the transaction process itself will take one day to complete (i.e. outcome of value-in-use). In this issue, online banking service systems have become more complex for the customers when they are in emergency situation for value co-creation process. In this situation, value co-destruction occurs due to intentional misuse of the service system resources in the context of managing distributed channels (Plé & Chumpitaz Cáceras, 2010). Value co-destructions occur when the IT enabled service system resources have imbalance of value proposition in online service (Figure 3). I think that there is absence of IT strategic implementation in the S-D logic and associated with self-service systems which led to the creation of value co-destruction rather than value-in-use from customer's perspectives. Value proposition based business firms should think about the deep understanding of how customers are capable to create value-in-use by themselves and how their IT enabled self-service systems are in flexible to use in the customer's value creation process.

In order to avoid value co-destruction and to increase value co-creation we can use IT strategic approach that is centralizing customer network which could incorporate with business strategy to fulfill the requirement of value proposition activities. Centralizing customer network such as creating the platform to get feedbacks from the customers about their experiences, creating the value-in-use, and by introducing blogs to share their knowledge. This could move
towards open innovation in IT enabled service activities. In addition, value proposition based business organizations should improve their capability to realize the practical situation of their customers in the context of value co-creation. Moreover, centralizing customer networks as an IT strategic approach might have more chances to interact with the customers. This type of interactions could also have more possibilities to increase the outcomes of value creation from customers, capability of the value propositions and range of quality in IT enabled service systems. Centralizing customer network have the capability to notice the individual customer’s demands and to shape the service systems design which leads to sustain and to manage competitive advantages. The authors Zhang, Ye, Chen & Wang (2011) also argued about the potential benefits of customer participation as an strategic view on value co-creation process under the lens of developing the new capability patterns for firms which include flexibility, deliver, service and customerization. Bolton & Saxena-Iyer (2008) also argued about the importance of customer participation for effective value creation and to the delivery of interactive services. According to the above authors customer participation is influenced by the quality of service and the behavioral outcomes of value co-creation process.

In summary, I have found a number of dimensions playing a key role in the value co-creation processes in relation to the online banking service systems. These were: flexibility, comfortability, effective information entity and centralizing customer networks (Figure 2). In this thesis, multi-dimensional focus of IT strategic approach is discussed with existing information system research disciplines. In terms of analyzing the findings in three different aspects with the aim of exploring how can service quality be enhanced by increasing customer participation in value co-creation processes in order to derive value-in-use? First, a strategy of move towards flexibility and comfortability on the basis of risk factors as associated with the integrated mobile device in online banking service systems. Second, strategy of effective information entity in the perspective of challenges for value co-creation processes involved in online banking service system. Finally, strategy of centralizing customer network with respect to complexities involved in online banking service.

From this study I propose that the multi-dimensional focus of IT strategic approach such as flexibility, comfortability, effective information entity and centralizing customer network can help to increase value co-creation process as value-in-use rather than value co-destruction (Figure 2). This IT strategic approach may be helpful to succeed the concept of value co-creation process in S-D logic terms related with service systems.

According to my study, IT strategic approach is playing important role in value co-creation process and is supported from the argument of information system researchers in different views like: strategic potential benefits of IT-enabled resources (Nevo & Wade, 2011) with firm-level benefits, awareness of strategic value of technology (Baptista et al., 2010) in organizations, multi-focused strategies facilitates to operationize the concept of value co-creation with customers (Zhang et al., 2011) and also helps to guide firms to take both upstream-focused and downstream-focused views of capability development. Additionally, quality of IT-enabled resources is increasing the firm level benefits and strategic potential of operational benefits.
through business and the value of IT are increasing the capability of business strategy (Kohli & Grover, 2008). More importantly, IT serves as a tool to enhance co-creation of value as a result of identifying and leverage complementary capabilities of firms (Grover & Kholi, 2012). To effectively create and deliver interactive IT-enabled service (Bolton & Saxena-Iyer, 2008), customer participation is important to analyze the existing services. The existing literatures like GORE methodology (Fragidis & Tarabanis, 2011) initialize to analyze value co-creation with customer interaction in service systems. And, conceptual framework for IT-driven service innovation with strategic and operational dimensions (Domínguez-Péry et al., 2013) helps to predict key challenges and difficulties in service innovation for future research.

7. Conclusions

Service system is an emerging discipline which is characterized by the co-creation of value through customers. Value co-creation processes occurred when integrating the service systems with customers in self-service technologies. In the case of online SBI banking service systems, value co-destructions are occurred due to the risk factors of integrated mobile device and imbalance of value propositions in online banking service systems. It makes big challenges for value co-creation process to derive the outcome of value-in-use among customers. So, multi-dimensional focus of IT strategic approach might have more capability to enable the firms to focus on a new way of thinking about their customer’s value creating processes. It could lead to make cool experience among online service customers according to their knowledge. Importantly, this type of strategic approach could enhance the quality of online self-service technologies.

Increasingly, the potential for co-creating values through interactions with service systems are huge, but there is a possibility of value co-destruction rather than value-in-use in terms of S-D logic. Furthermore, adverse consequences can occur for a variety of reasons during value co-creation processes as noticed in the discussion section. Therefore, IT strategy is also essential to derive value-in-use in the context of S-D logic. So, firms should take into account about IT strategy before implementing a strategy based on S-D logic related with service systems from customer’s perspectives.

The main contribution of this thesis lies in initializing the Information System (IS) researchers to develop and to incorporate IT strategy with the conceptual framework of S-D logic in service systems from customer’s perspectives. It could help to align IT strategy with business strategy on the basis of centralizing the value co-creation process with customers as an emerging discipline. Another noticeable gap is emerged from our literature which is relevant to S-D logic research community. That is, the general absence of conceptual framework to analyze the value co-creation process as value-in-use and/or value co-destruction process in self-service technologies from customers point of view.

One of the important concerns is that the future of research on service systems needs to be a move towards an integrated agenda to better understand how people, processes and assets
interact with complex service systems for the co-creation of value with customers. The research question is still remaining in value co-creation context that is complexity in service systems is associated with the ability of individual customers and/or IT-enabled service system resources in self-service technologies.

This study highlight the importance of IT strategy for value co-creation process from customer's perspectives in self-service technologies. The multi-dimensional focus of IT strategy is approached by considering the challenges, risk factors and complexities associated with integrated mobile device and online banking service system as examined in results section. However, more empirical work is necessary about IT strategy with respect to value co-creation process under the lens of S-D logic in order to completely understand and to approach this study. I believe that this study might provide me a good beginning for future research. Understanding of value co-creation process in S-D logic with service systems and the potential of IT-enabled service systems – allow me to learn more about the limits of IT strategy.

Acknowledgement

I wish to express my sincere gratitude and respect to my thesis supervisor Prof. Jonny Holmström, Department of Informatics, Umeå University for his inspiring suggestions, insightful discussions and constant encouragement during this study. I take this opportunity to express my gratefulness to Dr. Katrin Jonsson, Dr. Ulrika H Westergren and all my course teachers for their valuable guidance and constant support throughout my master program. I would like to express my deep felt gratitude to my lovable husband Dr. S. Ajaikumar, Principal research engineer, Department of Chemistry, Umeå University for his support and constant encouragement throughout the course of my studies. It gives me great pleasure to thank my parents, brothers, sisters and all my family members for their love and unfailing support and encouragement during many years of my studies. I extend my gratefulness to my friend Dr. Madhavi for such a wonderful time, joy and happiness we share together at Umeå. I also give my thanks to SBI customers those who gave interviews to successfully complete the thesis study.
References


**Website Link**

# Appendix A

Table 1: Foundational Premises of Service-dominant Logic

<table>
<thead>
<tr>
<th>Foundational Premises (FPs)</th>
<th>Explanation/Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FP1</strong> Service is the fundamental basis of exchange.</td>
<td>The application of operant resources (knowledge and skills), “service” is the basis for all exchange. Service is exchanged for service.</td>
</tr>
<tr>
<td><strong>FP2</strong> Indirect exchange masks the fundamental basis of exchange.</td>
<td>Goods, money, and institutions mask the service-for-service nature of exchange.</td>
</tr>
<tr>
<td><strong>FP3</strong> Goods are distribution mechanisms for service provision.</td>
<td>Goods (both durable and non-durable) derive their value through use – the service they provide.</td>
</tr>
<tr>
<td><strong>FP4</strong> Operant resources are the fundamental source of competitive advantage.</td>
<td>The comparative ability to cause desired change drives competition.</td>
</tr>
<tr>
<td><strong>FP5</strong> All economies are service economies.</td>
<td>Service (singular) is only now becoming more apparent with increased specialization and outsourcing.</td>
</tr>
<tr>
<td><strong>FP6</strong> The customer is always a co-creator of value.</td>
<td>Implies value creation is interactional.</td>
</tr>
<tr>
<td><strong>FP7</strong> The enterprise cannot deliver value, but only offer value propositions.</td>
<td>The firm can offer its applied resources and collaboratively (interactively) create value following acceptance, but cannot create/deliver value alone.</td>
</tr>
<tr>
<td><strong>FP8</strong> A service-centered view is inherently customer oriented and relational.</td>
<td>Service is customer-determined and co-created; thus it is inherently customer oriented and relational.</td>
</tr>
<tr>
<td><strong>FP9</strong> All economic and social actors are resource integrators.</td>
<td>Implies the context of value creation is networks of networks (resource-integrators).</td>
</tr>
<tr>
<td><strong>FP10</strong> Value is always uniquely and phenomenological determined by the beneficiary.</td>
<td>Value is idiosyncratic, experiential, contextual, and meaning laden.</td>
</tr>
</tbody>
</table>

(Source: Adapted from Vargo and Lusch 2008a)
Appendix B

Interview questions

1. Are you using online banking service? How it is flexible to you?
2. Which type of service account do you have?
3. What type of service activities are using frequently? Is it flexible to achieve your needs?
4. Did you try the newly introduced service activities? How did you feel, is it easy or tuff to do?
5. Which type of service activity you feel complex when it was in emergency situation? Why
6. Which type of information is required to support your service activity to make easy?
7. What do you think about SBI online account and other banking service systems bank?
8. Are you struggled in any service activity when doing the process? Why?
9. When you trying new service, the given information entity is enough for you to get the new experience?
10. Have you discussed about self-service banking systems with any one and based on what?
11. Do you know what are the service activities are available in online SBI bank? Have you tried any of it?
12. Do you feel any type of service activity is complex while doing the process in online?
13. Do you have any idea to suggest to increases the value co-creation process?
14. Did you know about other customers are getting struggle to do the online banking processes?
15. Did you like to include any information/idea in this interview?