

Exploring Rural Household's Adoption of Self Service Technologies in Banking Industry

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Abstract

After the advent of Self-Service Technologies(SST's), there has been a great shift in the way customers interact with the service providers. Any change is not considered worth unless it is usable, understandable and finally adoptable by the user). Many banking organizations at one point of time highlighted their SST capability as USPs. For e.g. Canara bank was the first to release mobile ATMs in India and SBI also claimed that it has the largest number of ATMs in India. Technological change can happen any time, in any form as it is imminent. When companies introduce innovations such as self service technologies, they have greater challenge of communicating, comforting the consumer to accept change. This paper explores variables of a conceptual model of attitude development by Davis, Bagozzi D Fred and Warshaw. Also an attempt has been made to explore alternatives regarding adoption of SSTs in Indian rural areas.

Keywords : Attitude, SST, Banking Industry, Rural household, ATM

Introduction

The self-service concept in businesses has grown in significance. Self service technologies play a vital role in reducing costs of an organization rendering automated interface between service provider and customer. For example, Amtrak introduced telephone self-service by means of an IVR (Interactive Voice Response) system that allowed cost savings of \$13 million; likewise, Royal Mail's IVR system led to a 25% reduction in its customer service costs. Once industry players learnt about advantages of SSTs, the rapid induction of same started happening in all streams of service delivery. This complicated service encounter with customers as sizeable segment of them didn't have required expertise to handle SSTs (Meuter et al. 2000). Examples of SSTs include Internet based services, automated hotel checkout, automated teller machines (ATMs), or mobile banking. Many studies have been conducted for technology adoption and Davis et al(1989), concluded that attitude has a major influence on developing intentions for accepting technologies.

'Self-service' can be defined as any technologically mediated interaction or transaction with a company where the only humans involved in the experience are the customers themselves (Meuter M, Ostrom A, Roundtree R and Bitner M, 2005). In recent times, public have been exposed to technological products such as ATMs, kiosks, and personal computers. For instance, an individual may form attitude towards computers based on his/her observation of other people's computer usage rate. More studies on attitude have provided insight as to why some consumers do (and do not) adopt SSTs. It is obvious if consumers don't form favorable attitudes; they will be placing themselves far from the technology based self-services and may feel neglected.

According to (Tony & Mark 2004), unfortunately, financial and banking service industry has been a clear target of hackers. On this line, global analysts fear a new trend in launching attacks. They are,

1. Earlier there were general attacks with an intention to infiltrate a terminal and observe the activities. But now the talents among hackers are being divided into money stealers, information thieves, profile targeters (maligining an individual's character by uploading false documents through computers online) etc.

2. Increase in the frequency of virus attacks across the worlds where for example, In case of Sony Corporation for illegally downloading movie "The Interview".

If a consumer has already experienced the technology before trying first hand experience offered by service provider, he would definitely adopt the technology (Dickerson and Gentry, 1983; Korgaonkar and Moschis, 1987). Even exposure to good or positive word of mouth also play positive role in getting a non user near to technology. Adoption is all about accepting a technology as harmless and developing a sense of trust and positive feeling towards using it without associating any risk with it. However the study takes a rural SST adoption view where the perceived risk element has a major role to play in rural areas as they have to be dragged out from their conservative mindsets with the help of well planned market campaigns. As it takes large scale of investment time and money to design, implement and manage the self service technologies, firms need to understand consumer intentions and ensure that there will be a pleasant service experience at the first encounter. Implementation of an information system can be termed as success when a user appreciates the progress in technology (Wang, Hsu and Fang 2005).

Service provider can also plan on a smart way of educating people about advantages by getting best of technologies. It is vital to note that large numbers of users subscribing for SST can not be read as overall success of a SST implementation and consumer adoption. This figure might be very evident in urban areas but not rural areas. Real India lives in rural sector and as per the balanced regional developmental policy laid by Government of India, the real development should happen in a geographical area , where collectively, if calculated, large number of people of a country live. Problems occur when the connectivity issue between the consumers and service providers start taking a dark and complex shape that finally fetches zero returns to the service providers over investment on the self service technology. The thought connection between two communities can happen only when the service provider gets knowledge of rural people's attitudinal formation as well as different patterns on SSTs. If there is a perfect understanding about relevant consumer attitudes driving the intentions to use SSTs, firms will be in a better position to achieve SST implementation goals and objectives. The rural households in the present situation retain lot of barriers such as negative frame of mind on technology. These barriers have to be countered with good penetration plans by the service provider.

Overview of Rural Infrastructure

Rural infrastructure stands as a key to propel faster growth for the country. Better connectivity of the geography leads to increased market accessibility for industries and balanced regional development can be expected in these situations. The other factor that links rural infrastructure with the economic growth is poverty alleviation and human development. If rural areas are well connected through roads, then companies can think of investing in these areas and many SMEs also can be encouraged. These are some of the basic needs for a geographical region's eligibility to get synergized in a development wave. Business activities cannot take off unless these above mentioned points are taken care. Providing infrastructure facilities is not the key for development, but rural households should be able to use the infrastructure for improving their income and consumption should happen for example, having individual electricity connection to all households, ability to make phone calls and use roads for motorized transport. According to (Jocelyn Songco, 2002), rural infrastructure investments benefits the rural poor and results in increased incomes to help them consume more thereby stimulating and mobilizing the near dead consuming mechanism. If infrastructural importance is neglected, the gap will widen between poor and rich in rural areas. Many empirical studies around the world have published findings of close relationship between infrastructural investments and economic growth. According to World Bank sources, 1 percent increase in infrastructure stock is directly related to 1 percent increase in GDP across all countries. At the same time market access has an inverse relationship with travel time, which can be reduced through improvements in road networks. Broadly speaking, rural infrastructure development propels the growth cycle faster by:

- Creating better access to employment and providing further earning opportunities;
- Creating access to previously inaccessible commodities and services;
- Saving time, that can be better utilized in productive activities;
- Better health and physical conditions of the Region.

If companies ignore this point, customers may feel free to withdraw their business transactions entirely. Gartner

states that 68% of customers usually leave a service provider in case of a dissatisfactory service encounter, therefore by simple mistakes, competitors benefit using the weakness of strong player.

Objectives

The main objective of the paper is to explore rural household's attitudinal development on self service technology. The sub objectives revolve around analyzing the approaches made by different research scholars to measure attitude development on SST. An attempt to link adoption of self service technologies by rural people and economic development has also been made by providing overview of rural infrastructure and importance of infrastructural projects in catalyzing economic development.

Research Methodology

A secondary research approach was made to reach objectives. An extensive in-depth literature review was launched. Literatures were borrowed from eminent databases like Scopus, Proquest and EBSCO. Literatures were mapped to find gaps and objectives were generated. Findings and recommendations of researchers were mapped together to write an article probing insight for banking industry to implement self service technology (SSTs).

Literature Review

In literature review we shall start with an introduction of technology acceptance and rejection percentages among world communities then percolate to core issues. A study by Jupiter Research (cited in Bailor, 2005) found that in UK that only 52% of customers are satisfied with self-service experiences. One of the chief reasons was, over 80% of calls to contact centers were common questions or standard problems. However, studies have shown that self-service does not replace the contact centre but in some cases supplements it.

Davis (1989) had already pointed out about several complex factors playing role in accepting new technologies. The benefits of ATMs in rural areas include fund transfer, cash withdrawal and balance enquiry. All these processes can also be handled at lower cost (Goldfield 1998). This kind of a facility in rural areas in developing countries would make a huge contribution by reducing risk in carrying cash (Hogarth and Anguelov 2004). Understanding SST would be a harder task for rural people. A technique applied in this context as a remedy is persona design for eg: Jenni by Yahoo Corporation is a computerized speech recognition system with a human touch (virtual female character) with bio data; age 24 years, height 5.5 ft and even her Zodiac sign Leo.

Persona design in ATM's

A persona is an imaginary person who can be used in the process of designing a self-service application. A persona will have all the characteristics of a human being such as a name, age, gender, job title, accent, and even humor. According to (Schiffman and Kanuk, 2007), right brain is active in capturing visual aids and left brain is active in capturing the literature communication, here in case of rural consumer, the best way of personalizing technology is to introduce a persona or animated character that will guide these consumers in a local language instead of points display. The fun element from (Dabholkar, 2003) can also be made use in building a system that becomes rural customer friendly in a first encounter. There can't be a second word about self-service being hugely successful. SSTs have provided such a convenient platform with 70% of all cash withdrawals at UK in 2003 were through ATMs, amounting to a staggering £144.4 billion in cash (APACs, UK Payment association, 2006). Kiosks have become a real success story for some companies, just as ATMs have been for banks. But the success in Indian rural scenario has to be experimented with the help of rural people's attitude development. - Research Gap.

Davis, Bagozzi D Fred and Warshaw in the year 1992 constructed a model (Fig 1) that links the degree to which users think the system is easy to use and also believe the system is useful with final usage of the technology. This predicts user's attitude towards the system and likelihood of them using it.

The Figure 1., explains sequence of decision making in the minds of the targeted or prospective user. The research scholars have used perceived usefulness and perceived ease of use as external variables that help an individual's mind trigger an array of decision making activities that in turn gives rise to attitude development on a technology.

Some studies like (Davis FD 1989; Davis SA 1993; Venkatesh 2001; Reimenschneider 2001; Brooks, Reimenschneider & Hardgrave 2001) have concluded that end user training would have significant role in making people accept the technology. To facilitate this, first of all technology by target market should be perceived as a 'benefit'. The benefit can be understood as "perceived usage". This variable can be described as an individual's perception using a new technology enhancing or improving her/his performance (Davis, 1989, 1993). According to (Parrish & Servon 2006), people would welcome a technology when they see a strong relevance of the technological purpose and their present job.

PEOU (Perceived Ease of Use) is another variable where it explains the level to which a person sees learning a technology as easy. Ciccotello & Elger (2004) in the same line have stated that more than implementation, it is the way an approach is made, makes sense. Shirer and Tobe (2004) supported this suggestion in case of poor people that we can relate it to poor rural people of our country. If perceived usage and perceived ease of use elements are taken care in a service mediated by SSTs, then the target population would develop a favorable attitude leading to behavioral intention. Development of behavioral intention in a consumer forms an intention to trail use a technology thereby using it on regular basis (Davis 1989; 1993, Jen hung Hay & Yuma Lin, Su Ting Change 2006).

After developing an intention to use the technology, it has been more or less successfully adopted by an individual. Overall the benefit points from self-service may be pointed where technology is good at boring customers handling repetitive tasks but on the other side humans are good at empathy, relationship building, complex problem solving and creativity.

Marketers face challenges at one point where we all know that consumers differ in their preferences it may be demographic, psychographic profiles or by personality traits. Many researchers such as (Darian 1987; Stevens, Warren, and Martin 1989; Eastlick 1993; Fram and Grady 1997;) have contributed in the field of demographic factors relevance to technology based self service and they came out with findings depicting young, affluent, educated males are more likely to use SST options. But in recent days, women, older consumers, the less educated, and the less affluent have access to same level of SSTs and also they have become familiar. McMellon, Schiffman, and Sherman (1997) separated older consumers into technology lovers and technology users to understand online behavior. Like other researchers (Barczak, Ellen, and Pilling, 1997) divided banking consumers into security conscious, maximizers, instant gratifiers, and hassle avoiders to understand their preferences for ATMs, automatic deposit and withdrawal, and telephone banking.

Psychographic studies have provided insights to marketers with possible consumer segments. But they may not go far enough in understanding underlying consumer motivation. The concept of self-efficacy comes into light and is defined as an individual's assessment of his or her ability to perform a behavior. According to (Bandura 1977), experience is the main factor as it is based on performance accomplishments to produce higher, more generated and stronger efficacy expectations. Imparting financial literacy on adults is a tough task as they may not be prepared to take classes (Parrish and Servon 2006). National Endowment for financing education (2004), instead of asking reluctant adults to attend classes at one place they may be trained by demonstrations in shandies and haats in rural areas. (Krishnamacharyulu 2006).

The concept of customer segmentation has been helping companies to know the diverse needs of their different customers. A study by the Future Foundation (Howard M & Worboys C, June 2003) identified three broad groups that were primarily motivated by different factors to deal with companies.

Table 1 furnishes data on the factors, which motivate the groups to adopt SST's. The key issue is to decide on self-service options offering to these customers. Consumer perceptions of self-service technologies are colored by many elements such as expectations, previous encounters, emotional state and all have a strong influence on their thought of using self-service systems. It is also said that successful service providers must be able to relate technology with personal aspects of service delivery (Berry LL, 1999). Adding to that, (Meuter et al. 2005 and Dabholkar, Bobbitt, & Lee 2003), have made significant contribution on post SST usage behavior. In a typical business environment customer satisfaction is a major driver of customer retention and profit, waiting time is always a crucial factor adding to customer's experience (Davis and Vollmann 1990; Tom and Lucey 1995).

Conclusion

Financial institutions, in order to facilitate diffusion of SST hassle free need to work more on security needs by setting up a good network (Ton & Park 2004). Hilgert & Hogarth (2003) concluded that there is a positive relationship between financial education, people behaviors and economic outcomes. Lyons et al (2006) supported it.

Despite large presence of self-service technologies there has been a lack of research on consumer attitudes and adoption of SSTs (Weijters et al., 2007). There are few studies that have probed into perceptions towards the use of SST among different age groups. Usage and diffusion of self-service machines essentially requires behavioral change on the part of consumers. As the literature review provides a clear window opening towards external variables like perceived ease of use and perceived usefulness. In the model presented by Bagozzi, Davis and Warshaw (1992), measure of perceived usefulness and ease of use has to be measured as these variables have to be analyzed in formation of attitude. Educating rural people in the right way would result in changing the mindset of rural people and help them coming out from conservative mindset (Bang, Ellinger, Hadjimarcou & Traichal 2000; Xu & Paulins 2005).

Researchers Igbaria and Parasuraman (1989) and Kay (1993) have classified the types of anxiety such as, fear, apprehension, and expectations people feel while considering possible or actual use of computer technology and interestingly anxiety influenced by technology adoption is stated as negative state of mind about technology tools (Meuter et al. 2003). According to Wessels & Drennan (2010), Banks can work on three point strategy towards facilitating adoption. They are:

1. Embracing technology and greater standard of living in every promotion.
2. Setting up a customer relations team that introduces, demonstrates and addresses grievance of customers regarding technological problems.
3. Welcoming customers as savings bank holders and slowly encouraging them to use more technologically backed banking service.

There are four factors that affect attitudinal development of people towards technology. They are optimism, innovativeness, discomfort and insecurity where optimism and innovativeness are considered as positive drivers of technology adoption encouraging customers to use technological products/services and to stick on a positive attitude toward technology, while discomfort and insecurity are negative drivers, making customers reluctant to use technology.

Ziefle & Bay (2005), compared young age 20-35 and old age 50-64 consumers groups to measure difference in their interacting pattern with technology by testing their ability to learn and perform certain tasks on both simple and complex mobile phones. They came out with the findings that significantly lower percentage of people among older age group were successful in accomplishing the assigned tasks and older adults required longer time to complete the tasks (on average, nearly double the amount of time spent by the younger age group). Inference can be drawn that, based on prior encounter with technological devices; older consumers may have less confidence than younger consumers in using SSTs. So, the question of training or making rural elder class technology friendly is out of context but instead, there is a larger segment of young age group that falls in 20 - 35 category (NCAER, 2007) can be targeted to induce technological service consuming behavior. As present young generation gets older, slowly the transactions would be mastered and passed on to the younger generations and trust element would definitely escalate and will get stabilized on technology. The younger generations will walk on the foot steps of their adults. As we need phases to complete SST adoption process in the rural geography, it takes time for generations to adopt SSTs. Once there is a technology friendly environment exhibited by all the rural community in the area, the adoption of the SST can be treated as complete.

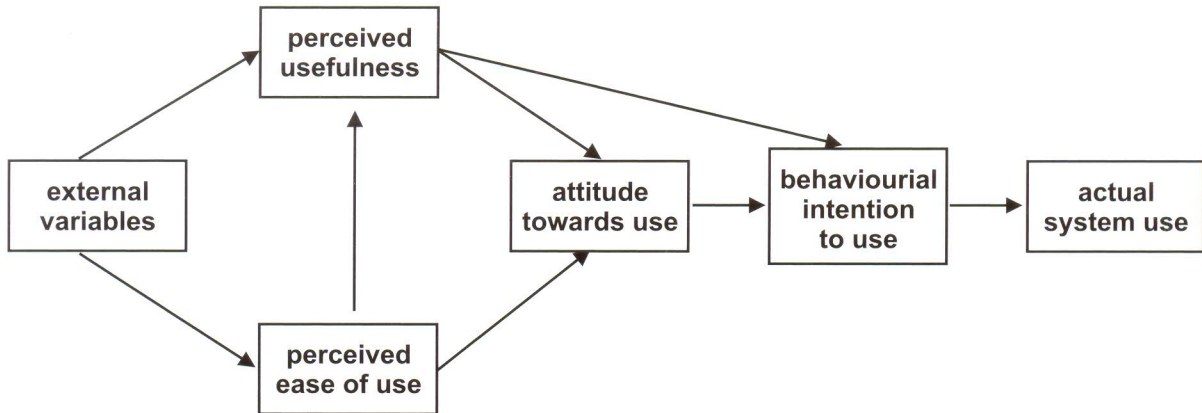
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Exhibit 1. Model of Attitudinal Development by Davis, Bagozzi D Fred and Warshaw



Source: Bagozzi, Richard P, Davis, Fred D; Warshaw, Paul R, "development and test of a theory of technological learning and usage", Human Relations, 1992, Vol 45, Iss 4, July, Page No. 659.

Table 1. Groups motivated by three different factors

Sl. No.	Groups Segregation	Preferred By
1	Speed	More males, younger, most likely to choose the Internet
2	Human contact	More middle aged, prefer telephone or face-to-face
3	Control	More female, older, more positive than other groups about using kiosks, although primarily use the telephone.

Source: Howard, H and Worboys, C, "self-service - a contradiction in terms or customer-led choice", Journal of Consumer Behavior, 2003, Vol. 2 Iss. 4, pp. 382-92.