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Mobile Banking as Technology Adoption and Challenges: A Case of M-Banking in India

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Abstract- If technological revolution is at its peak, one of the notable sectors of the economy where technology is at it helm of affairs with respect to customer service is BANKING. Over the years, banking has transcended from a traditional brick-and mortar model of customers queuing for services in the banks to modern day banking where banks can be reached at any point for their services. In today's business, technology has been on the predominant indicators of growth and competitiveness. The banking industry today is in the industry of its revolution. Information technology has basically been used under two different avenues in banking. One is communication and connectivity and other is business process. Today, banks have welcomed wireless and mobile technology into their boardroom to offer their customers the freedom to pay bills, planning payments while stuck in traffic jams, to receive updates on the various marketing efforts while present at a party to provide more personal and intimate relationships. This paper examines consumer adoption of a new electronic payment service as mobile banking and the factors influencing the adoption of mobile banking in India.

Index Terms- MPSP, mobile banking, mobile payments

I. OBJECTIVE OF THE STUDY

This study plans to 'plug' gap of research in the acceptance of mobile banking among the consumers. The primary objective of this study are to :

- focus on the adoption of mobile banking services by consumers
- Identify factors influencing the adoption and usage of mobile banking in India.

The personal characteristics of mobile banking users were found to be important determinants of their adoption decisions. This finding provides the financial services industry with a better understanding of customer perceptions of mobile banking services and helps them plan their marketing strategies and promotion approaches for mobile banking services in the future.

II. RESEARCH METHODOLOGY

For the present research, the paper is based on Exploratory Research. The major emphasis of Exploratory Research is on the discovery of ideas. Through Exploration, the researcher develops concepts more clearly, establish priorities, develop operational definitions, and improve the final research design. This research is both quantitative and qualitative. This research is based on the data collected through "Questionnaire" with Mobile banking User and Non-user.

III. RESEARCH DESIGN

The data have been grouped into two main categories - primary and secondary data. The secondary data have been compiled from newspaper, journals, magazines, and web links and also research papers. The primary data have been collected through an exploratory research – Questionnaire with user and non user of mobile banking basically Businessmen, servicemen, professionals, students etc.

IV. LITERATURE REVIEW

Adoption of tele-banking [1] as well as Internet banking [2] has received research attention in recent years. Much of the existing research in electronic banking services has adopted an organizational perspective [3] or a distribution channel perspective [4]. Consumers using these services have been focus in a large body of current research, nevertheless customer behavior in mobile banking context have remained rather uncharted territory. This paper aims at filling that gap by shedding light on the general usage of mobile services and in particular on influence of demographic characteristics on usage. The survey was conducted among Ghaziabad bank customers. The paradigm shift, from traditional branch banking to electronic banking; the newly emerged channels; rapidly increasing penetration rates of mobile phones are among other the motivators of this study. The approach employed is practical and provides insights drawn from the quantitative empirical survey.

The newly emerged mobile banking services represent an innovation where both intangible service and an innovative medium of service delivery employing high technology are present. Thus, concepts of innovation and diffusion of innovation are even more intricate as technology and service aspects have an effect on the characteristics of mobile banking services[5]. Traditionally research relating to the customer adoption of innovation has tended to concentrate on socio-demographic and psychographic attributes of potential adopters. Even though these kind of personal characteristics of a consumer have found to be predictors of adoption [1], an increasing body of research has demonstrated that it is the perceived attributes of innovation itself rather than the personal characteristics that are the stronger predictors of the adoption decision [6]. In the search to understand consumers' adoption of innovation, and where research has focused on the consumer perspective, Rogers' diffusion model, which originally dates back to 1962, has often been employed[8]. Within financial services innovation research [7], [9,10], have applied Rogers' model to Internet banking.

According to Rogers (1995)[11] the perceived innovation characteristics are supposed to provide the framework how potential adopters perceive an innovation. Research that has investigated the product characteristics of innovation has

generally endorsed evaluating the innovation along the product characteristics that involve five constructs; relative advantage, compatibility, complexity, trialability and observability[12]. Concept of perceived risk is often included as augmented by Bauer (1960)[13]. Particularly in banking services the perceived risk associated with the financial product itself as well as with electronic delivery channel is higher than in basic consumer goods, and hence increasing the importance of this attribute of innovation[14]. Ensuring security and confidentiality are the fundamental prerequisites before any banking activity involving sensitive information can take place[15]. Relative advantage, compatibility, trialability and observability are positively related to adoption of an innovation and the remaining two, complexity and perceived risk, negatively related[11]. These innovation attributes and their influence on adoption of mobile banking services are detailed under empirical implications.

V. INTRODUCTION

The mobile banking is defined as "the provision of banking services to customers on their mobile devices": specifically the operation of bank current and deposit or savings accounts. According to recent research findings and forecasts in business, media and academia, mobile phones and handheld devices should have been firmly established as an alternative form of payment in most technologically advanced societies [16]. Despite ongoing efforts by key players such as banks, mobile network operators and mobile payment service providers (MPSP) in promoting and offering mobile payment options, absence of widespread customer acceptance of this innovation have resulted in a lag in the adoption of mobile payments as an alternative form of payment mechanism [17]. While each of these players approach the market with different expectations, several studies have shown that merchant/consumer adoption is key to the success of mobile payments [16, 17]. 'Mobile payments are defined as the use of a mobile device to conduct a payment transaction in which money or funds are transferred from a payer to a receiver via an intermediary or directly without an intermediary' [18]. Due to the all-encompassing nature of this definition, it should be made clear that a distinction exists between mobile payments and mobile banking. The latter refers to mobile payment transactions that are exclusive to their respective customers whilst the former is a mode of payment that is widely available to all parties in a retail environment [18]. Mobile payments have been suggested as a solution to facilitate micropayments in electronic and mobile commerce transactions and to encourage reduced use of cash at point-of-sales terminals [18, 19]. If efforts in promoting the use of mobile payments succeed, it will boost both ecommerce and m-commerce adoption and may be the killer service in 2.5G, 3G and beyond [17]. The early development of mobile payment was largely triggered by the high penetration rate of mobile phones and handheld devices in most markets. Mobile phones today clearly outnumber every other mobile device. With a mobile phone subscriber base of 500 million, which is expected to reach 700 million by 2012 according to the Department of Telecommunications (DoT), the India can easily expect mobile commerce or m-commerce to take off faster than online or e-commerce.

VI. MOBILE BANKING ADOPTION IN INDIA

In India, the situation of the banks is quite different from the banks overseas particularly in developed markets. Indian banks are not facing huge write downs or losses and are still quite well capitalized. In India, however, this could be an opportune moment for banks to focus on the internal processes and consolidate their IT platforms across functionalities to use technology as an effective strategic tool. The use of technology in India has undergone rapid transformation. The last two decades have witnessed a sea change in the nature of services offered by not only banks but also the financial sector and even the Government - all of which have had a positive impact on the customers of these organizations and the general public at large.

Financial Services are generally complex and need a lot of trust for the consumer to use technology. Banks have changed from paper-based banking solutions provider to the latest of the technologies like online-banking, mobile-banking, etc. It is surprising to know as to why most of the Indian customers have not welcomed this up gradation. Customers across the world, even technologically optimists, have refrained from using technology aided solutions. There are many reasons why technology has not been able to ride the acceptance wave and cross the hurdle and become an acceptable feature in banking. As today's banking has redefined itself as customer centric, it becomes more important that the customer is happy with the services being provided. Unfortunately, the acceptance and adoption rates are very low even in the case of educated customers. The paper looks at various factors which explain why consumers are not using mobile banking and other technologies in banking. It would also try to suggest why people are not currently using mobile banking and try to suggest how to overcome this problem and increase the acceptance levels.

Data has been collected from various sources; there is a combination of both primary and secondary data that has been used in this research.

A. Primary Data

The data for the research is extracted from a servey conducted in Ghaziabad in U.P.,India. A total of 100 respondents participated in the research of Mobile banking. The demographic profile of respondents in each research is shown in Table and chart. The data collected through this method was adequate enough to make projections in the research.

B. Secondary Data

Articles have been sourced from magazines and journals dealing with current issues in mobile banking adoption. Internet & Text books related to Mobile Banking & Research Methodology have been a major secondary source for the extraction of the expert's opinion.

1. Factors that affect Mobile Banking Adoption

In order to identify the top and least five perceived items in affecting the adoption intention of Mobile banking; the percentage score of the respondents was computed? Table provides the result.

Table 1 : Demographic Profile of Respondents

Characteristics	Frequency	%tage
Gender		
Male	65	65
Female	35	35
Age		
<20	1	1
20-29	68	68
30-39	21	21
40-49	5 5	5
>50		5
Income (Monthly)		
<Rs. 5,000	65	65
>=Rs.15,000	23	23
Missing	12	12

Table 2 : Most and Least Perceived Factors in Mobile Banking Adoption

Items	Percentage of Using Mobile Banking Population (%)
1. I would use Mobile banking if I could use it on a trial basis first to see what it can offer	81
2. I would use Mobile banking if I could see a trial demo first?	76
3. I would use Mobile banking if I could test Mobile banking first?	75
4. I would use or be more likely to use Mobile banking if Mobile banking was compatible with my lifestyle?	45
5. I would use or be more likely to use Mobile banking if using my Mobile to conduct banking transactions fits into my working style?	35
6. Mobile banking is a risky mode of banking to use?	54
7. Mobile banking would allow me to manage my finances more efficiently?	44
8. Mobile banking would be complex to use?	60
9. I would use Mobile banking if Mobile banking increased my status?	71
10. Mobile banking would require a lot of mental effort?	63

The findings in table indicate that adoption of Mobile Banking appears to be influenced by its trialibility and compatibility. Regarding the least perceived items that affect mobile banking adoption, these seem to be related to complexity, relative advantage and perceived risk of Mobile Banking are perceived as factors least affecting its adoption.

Table 3 shows the intention to adopt the mobile banking and the factors to adopt that affect such intention.

Compactibility	46%
Trial Ability	59%
Risk	64%
Complexity	49%
Adoption Intent	40%

Factor 1: Access Problems

It is the most important factor, Accessing Problem statements such as `Possibility of error is higher than Internet Banking , Using key code list with mobile phone is complicated and Mobile phone is an unpractical device for banking emerge with good positive correlations. The great influence on the adopters not to have mobile banking services.

Factor 2: Dissatisfaction

Four variables load on to this factor. `Dissatisfaction' is the second significant factor, which accounts of the variations. The statements `Data transmission is very slow , Mobile banking services are risky and not secure, Mobile banking services are not enough versatile and Its use has been a disappointment by others signify that the non-adopters have seen the dissatisfaction among the users of mobile banking services.

Factor 3: Inability to Provide Knowledge

This is another crucial factor, which is reflection of variations. The statements of insufficient guidance is there for using mobile banking and its use is complicated which reflects that consumer behavior tends to be based on how a given problem is to be solved. In this research, the non-adopters of mobile banking are afraid of being the usage of new technology due to the complications in the systems and, moreover, no proper guidance is provided to them.

VII. DISCUSSIONS AND RECOMMENDATIONS

The banks providing mobile banking services to their customers, wishing to increase their customer share by removing all the above-discussed hurdles in the way of adoption of mobile banking services, may find relevant information from the findings. The factors appear to be defined by a mix of items that are reflections of problems in supplier side of the services and functionality of a mobile phone as delivery medium for banking services from the customer side. As the Internet banking is still in its growing stage, mobile banking has emerged as the next advance way of doing banking. Since the pace of technology advancement is not matching with the adoption rate, problems will arise if this widened gap is not going to be filled up with suitable measures. This negative effect of accelerating pace of development is manifested in services that are launched at an early stage of development process due to competitiveness and cost pressures. As a consequence, competence of service quality, does not reach an adequate level; consumers feel that service-providers are not responding to their needs. An example of that is the support for the item services are not enough versatile. In addition, emphasizing technology in service offering may result in ignoring certain fundamental prerequisites required for acceptance. Technology is an enabler a way to build up a new delivery channel, but communicating only technological features other elements of services such as service content. Technology-based electronic delivery medium does not constitute service offering and creates value alone, but service content has to function properly and the way of usage has to be known. Another main impediment seems to be functionality of a mobile phone as delivery medium for banking services. Mobile phone, obviously is not designed for this type of services: For instance, key board is relatively small, which makes it more prone for correcting errors in keeping the figures. Results indicate that consumers get disheartened by the complicated functions while accessing the mobile banking services which lead them to the dissatisfaction level as no proper guidance is to be provided to them. The fact is that the factor risk and security are the most considerable significant factors for banking service adoption, and particularly in relation to `new' electronic environment. The result of perceived risk on the adoption of mobile banking services appears to indicate that consumers are serious about the risk of conducting banking via a wireless channel, measured in terms of overall security and trustworthiness of the services offered. On the basis of the findings, it is suggested that service providers be aware of the problems of their customer base using mobile services. This kind of data has its value when designing new services and products or implementing market communications. In addition, information gained from experience with Internet banking and other modes of electronic banking cannot be straightforward implemented to mobile banking service customers. Given the increased competition and pressures to cut expenses, financial institutions have to be able to make informed decisions on resource allocation. Thus, research of this kind is of critical importance.

VIII. CONCSLUSION

It is well recognized that mobile phones have immense potential of conducting financial transactions thus leading the financial growth with lot of convenience and much reduced cost. For inclusive growth, the benefits of mobile banking should reach to the common man at the remotest locations in the country. For this all stakeholders like Regulators, Govt, telecom service providers and mobile device manufactures need to make efforts so that penetration of mobile banking reaches from high-end to low-end users and from metros to the middle towns and rural areas. Inclusion of non-banking population in financial main stream will benefit all. There is also need to generate awareness about the mobile banking so that more and more people use it for their benefit.

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