

Evaluating Internet Banking Productivity Analysis in India Using Single Window System

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Abstract

Electronic banking, also known as electronic funds transfer (EFT), is simply the use of electronic means to transfer funds directly from one account to another, rather than by cheque or cash. *Internet Banking* lets you handle many banking transactions via your personal computer. For instance, you may use your computer to view your account balance, request transfers between accounts, and pay bills electronically. Internet banking system and method in which a personal computer is connected by a network service provider directly to a host computer system of a bank such that customer service requests can be processed automatically without need for intervention by customer service representatives. The system is capable of distinguishing between those customer service requests which are capable of automated fulfillment and those requests which require handling by a customer service representative. The system is integrated with the host computer system of the bank so that the remote banking customer can access other automated services of the bank. The method of the invention includes the steps of inputting a customer banking request from among a menu of banking requests at a remote personnel computer; transmitting the banking requests to a host computer over a network; receiving the request at the host computer; identifying the type of customer banking request received; automatic logging of the service request, comparing the received request to a stored table of request types, each of the request types having an attribute to indicate whether the request type is capable of being fulfilled by a customer service representative or by an automated system; and, depending upon the attribute, directing the request either to a queue for handling by a customer service representative or to a queue for processing by an automated system.

Keywords: Technology, Automated, Internet, Banks, System

Various Forms of E-Banking

Internet Banking:

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Automated Teller Machines (ATM):

An unattended electronic machine in a public place, connected to a data system and related equipment and activated by a bank customer to obtain cash withdrawals and other banking services. Also called *automatic teller machine*, *cash machine*; also called *money machine*.

An **automated teller machine** or **automatic teller machine (ATM)** is an electronic computerized telecommunications device that allows a financial institution's customers to directly use a secure method of communication to access their bank accounts, order or make cash withdrawals (or cash advances using a credit card) and check their account balances without the need for a human bank teller (or cashier in the UK). Many ATMs also allow people to deposit cash or cheques, transfer money between their bank accounts, top up their mobile phones' pre-paid accounts or even buy postage stamps.

On most modern ATMs, the customer identifies him or herself by inserting a plastic card with a magnetic stripe or a plastic smartcard with a chip, that contains his or her account number. The customer then verifies their identity by entering a passcode, often referred to as a **PIN (Personal Identification Number)** of four or more digits. Upon successful entry of the PIN, the customer may perform a transaction.

If the number is entered incorrectly several times in a row (usually three attempts per card insertion), some ATMs will attempt retain the card as a security precaution to prevent an unauthorised user from discovering the PIN by guesswork. Captured cards are often destroyed if the ATM owner is not the card issuing bank, as non-customer's identities cannot be reliably confirmed.

The Indian market today has approximately more than 17,000 ATM's.

Tele Banking:

Undertaking a host of banking related services including financial transactions from the convenience of customers chosen place anywhere across the GLOBE and any time of date and night has now been made possible by introducing on-line tele-banking services. By dialing the given tele-banking number through a landline or a mobile from anywhere, the customer can access his account and by following the user-friendly menu, entire banking can be done through Interactive Voice Response (IVR) system. With sufficient numbers of hunting lines made available,

customer call will hardly fail. The system is bi-lingual and has following facilities offered

- Automatic balance voice out for the default account
- Balance inquiry and transaction inquiry in all
- Inquiry of all term deposit account
- Statement of account by Fax, e-mail or ordinary mail
- Cheque book request
- Stop payment which is on-line and instantaneous
- Transfer of funds with CBS which is automatic and instantaneous
- Utility Bill Payments
- Renewal of term deposit which is automatic and instantaneous
- Voice out of last five transactions

Smart Card:

A smart card usually contains an embedded 8-bit microprocessor (a kind of computer chip). The microprocessor is under a contact pad on one side of the card. Think of the microprocessor as replacing the usual magnetic stripe present on a credit card or debit card.

The microprocessor on the smart card is there for security. The host computer and card reader actually "talk" to the microprocessor. The microprocessor enforces access to the data on the card. The chips in these cards are capable of many kinds of transactions. For example, a person could make purchases from their credit account, debit account or from a stored account value that's reload able. The enhanced memory and processing capacity of the smart card is many times that of traditional magnetic-stripe cards and can accommodate several different applications on a single card. It can also hold identification information, which means no more shuffling through cards in the wallet to find the right one -- the Smart Card will be the only one needed. Smart cards can also be used with a smart card reader attachment to a personal computer to authenticate a user.

Smart cards are much more popular in Europe than in the U.S. In Europe the health insurance and banking industries use smart cards extensively. Every German citizen has a smart card for health insurance. Even though smart cards have been around in their modern form for at least a decade, they are just starting to take off in the U.S.

Debit Card:

Debit cards are also known as check cards. Debit cards look like credit cards or ATM (automated teller machine) cards, but operate like cash or a personal check. Debit cards are different from credit cards. While a credit card is a way to "pay later," a debit card is a way to "pay now." When you use a debit card, your money is quickly deducted from your checking or savings account.

Debit cards are accepted at many locations, including grocery stores, retail stores, gasoline stations, and restaurants. You can use your card anywhere merchants display your card's brand name or logo. They offer an alternative to carrying a checkbook or cash.

E-Cheque:

- An e-Cheque is the electronic version or representation of paper cheque
- The Information and Legal Framework on the E-Cheque is the same as that of the paper cheques
- It can now be used in place of paper cheques to do any and all remote transactions An E-cheque work the same way a cheque does, the cheque writer "writes" the e-Cheque using one of many types of electronic devices and "gives" the e-Cheque to the payee electronically. The payee "deposits" the Electronic Cheque receives credit, and the payee's bank "clears" the e-Cheque to the paying bank. The paying bank validates the e-Cheque and then "charges" the check writer's account for the check

Other Forms of Electronic Banking

- Direct Deposit
- Electronic Bill Payment
- Electronic Check Conversion
- Cash Value Stored, Etc.

Benefits/Concerns of E-Banking

Benefits of E-Banking

For Banks:

Price- In the long run a bank can save on money by not paying for tellers or for managing branches. In addition, it's cheaper to make transactions over the Internet.

Customer Base- the Internet allows banks to reach a whole new market- and a well off one too, because there are no geographic boundaries with the Internet. The Internet also provides a level playing field for small banks who want to add to their customer base.

Efficiency- Banks can become more efficient than they already are by providing Internet access for their customers. The Internet provides the bank with an almost paper less system.

Customer Service and Satisfaction- Banking on the Internet not only allow the customer to have a full range of services available to them but it also allows them some services not offered at any of the branches. The person does not have to go to a branch where that service may or may not be offer. A person can print of information, forms, and applications via the Internet and be able to search for information efficiently instead of waiting in line and asking a teller. With more better and faster options a bank will surly be able to create better customer relations and satisfaction.

Image- A bank seems more state of the art to a customer if they offer Internet access. A person may not want to use Internet banking but having the service available gives a person the feeling that their bank is on the cutting image.

For Customers:

Bill Pay: Bill Pay is a service offered through Internet banking that allows the customer to set up bill payments to just about anyone. Customer can select the person or company whom he wants to make a payment and Bill Pay will withdraw the money from his account and send the payee a paper check or an electronic payment

Other Important Facilities: E- banking gives customer the control over nearly every aspect of managing his bank accounts. Besides the Customers can, Buy and Sell Securities, Check Stock Market Information, Check Currency Rates, Check Balances, See which checks are cleared, Transfer Money, View Transaction History and avoid going to an actual bank. The best benefit is that Internet banking is free. At many banks the customer doesn't have to maintain a required minimum balance. The second big benefit is better interest rates for the customer.

Concerns with E-Banking

As with any new technology, new problems are faced.

Customer Support - banks will have to create a whole new customer relations department to help customers. Banks have to make sure that the customers receive assistance quickly if they need help. Any major problems or disastrous can destroy the banks reputation quickly and easily. By showing the customer that the Internet is reliable you are able to get the customer to trust online banking more and more.

Laws - While Internet banking does not have national or state boundaries, the law does. Companies will have to make sure that they have software in place software market, creating a monopoly.

Security: customer always worries about their protection and security or accuracy. There are always question whether or not something took place.

Other Challenges: lack of knowledge from customers end, sit changes by the banks, etc

E-Banking Global Perspective

The advent of Internet has initiated an electronic revolution in the global banking sector. The dynamic and flexible nature of this communication channel as well as its ubiquitous reach has helped in leveraging a variety of banking activities. New banking intermediaries offering entirely new types of banking services have emerged as a result of innovative e-business models. The Internet has emerged as one of the major distribution channels of banking products and services, for the banks in US and in the European countries.

Initially, banks promoted their core capabilities i.e., products, services and advice through Internet. Then, they entered the e-commerce market as providers/distributors of their own products and services. More recently, due to advances in Internet security and the advent of relevant protocols, banks have discovered that they can play their primary role as financial intermediates and facilitators of complete commercial transactions via electronic networks especially through the Internet. Some banks have chosen a route of establishing a direct web presence while others have opted for either being an owner of financial services centric electronic marketplace or being participants of a non-financial services centric electronic marketplace.

The trend towards electronic delivery of banking products and services is occurring partly as a result of consumer demand and partly because of the increasing competitive environment in the global banking industry. The Internet has changed the customers' behaviors who are demanding more customized products/services at a lower price. Moreover, new competition from pure online banks has put the profitability of even established brick and mortar banks under pressure. However, very few banks have been successful in developing effective strategies for fully exploiting the opportunities offered by the Internet. For traditional banks to define what niche markets to serve and decide what products/services to offer there is a need for a clear and concise Internet commerce strategy.

Banking transactions had already started taking place through the Internet way back in 1995. The Internet promised an ideal platform for commercial exchange, helping banks to achieve new levels of efficiency in financial transactions by strengthening customer relationship, promoting price discovery and spend aggregation and increasing the reach. Electronic finance offered considerable opportunities for banks to expand their client base and rationalize their business while the customers received value in the form of savings in time and money.

Global E-banking industry is covered by the following four sections:

- **E-banking Scenario:** It discusses the actual state, prospects, and issues related to E-banking in Asia with a focus on India, US and Europe. It also deals with the impact of E-banking on the banking industry structure.
- **E-banking Strategies:** It reveals the key strategies that banks must implement to derive maximum value through the online channel. It also brings guidance for those banks, which are planning to build online businesses.
- **E-banking Transactions:** It discusses how Internet has radically transformed banking transactions. The section focuses on cross border transactions, B2B transactions, electronic bill payment and presentment and mobile payments. In spite of all the hype, E-banking has been a non-starter in several countries.

- **E-banking Trends:** It discusses the innovation of new technologies in banks.

E-Banking Trend

Internet banking is gaining ground. Banks increasingly operate websites through which customers are able not only to inquire about account balances and interest and exchange rates but also to conduct a range of transactions. Unfortunately, data on Internet banking are scarce, and differences in definitions make cross-country comparisons difficult. Even so, one finds that Internet banking is particularly widespread in Austria, Korea, the Scandinavian countries, Singapore, Spain, and Switzerland, where more than 75 percent of all banks offer such services (see chart). The Scandinavian countries have the largest number of Internet users, with up to one-third of bank customers in Finland and Sweden taking advantage of E-banking.

In the United States, Internet banking is still concentrated in the largest banks. In mid-2001, 44 percent of national banks maintained transactional websites, almost double the number in the third quarter of 1999. These banks account for over 90 percent of national banking system assets. The larger banks tend to offer a wider array of electronic banking services, including loan applications and brokerage services. While most U.S. consumers have accounts with banks that offer Internet services, only about 6 percent of them use these services.

To date, most banks have combined the new electronic delivery channels with traditional brick and mortar branches ("brick and click" banks), but a small number have emerged that offer their products and services predominantly, or only, through electronic distribution channels. These "virtual" or Internet-only banks do not have a branch network but might have a physical presence, for example, an administrative office or nonbranch facilities like kiosks or automatic teller machines. The United States has about 30 virtual banks; Asia has 2, launched in 2000 and 2001; and the European Union has several—either as separately licensed entities or as subsidiaries or branches of brick and mortar banks.

The Indian Experience

India is still in the early stages of E-banking growth and development. Competition and changes in technology and lifestyle in the last five years have changed the face of banking. The changes that have taken place impose on banks tough standards of competition and compliance. The issue here is – 'Where does India stand in the scheme of E-banking.' E-banking is likely to bring a host of opportunities as well as unprecedented risks to the fundamental nature of banking in India.

The impact of E- Banking in India is not yet apparent. Many global research companies believe that E-banking adoption in India in the near future would be slow compared to other major Asian countries. Indian E-banking is still nascent, although it is fast becoming a strategic necessity for most commercial banks, as competition increases from private banks and non banking financial institutions.

Despite the global economic challenges facing the IT software and services sector, the outlook for the Indian industry remains optimistic.

The Reserve Bank of India has also set up a "Working Group on E-banking to examine different aspects of E-banking. The group focused on three major areas of E-banking i.e. (1) Technology and Security issues (2) Legal issues and (3) Regulatory and Supervisory issues. RBI has accepted the guidelines of the group and they provide a good insight into the security requirements of E-banking.

The importance of the impact of technology and information security cannot be doubted. Technological developments have been one of the key drivers of the global economy and represent an instrument that if exploited well can boost the efficiency and competitiveness of the banking sector. However, the rapid growth of the Internet has introduced a completely new level of security related problems. The problem here is that since the Internet is not a regulated technology and it is readily accessible to millions of people, there will always be people who want to use it to make illicit gains. The security issue can be addressed at three levels. The first is the security of customer information as it is sent from the customer's PC to the Web server. The second is the security of the environment in which the Internet banking server and customer information database reside. Third, security measures must be in place to prevent unauthorized users from attempting to log into the online banking section of the website.

From a legal perspective, security procedure adopted by banks for authenticating users needs to be recognized by law as a substitute for signature. In India, the Information Technology Act, 2000, in section 3(2) provides for a particular technology (viz., the asymmetric crypto system and hash function) as a means of authenticating electronic record. Any other method used by banks for authentication should be recognized as a source of legal risk..

Regarding the regulatory and supervisory issues, only such banks which are licensed and supervised and have a physical presence in India will be permitted to offer E-banking products to residents of India. With institutions becoming more and more global and complex, the nature of risks in the international financial system has changed. The Regulators themselves who will now be paying much more attention to the qualitative aspects of risk management have recognized this.

Though the Indian Government has announced cyber laws, most corporate are not clear about them, and feel they are insufficient for the growth of E-commerce. Lack of consumer protection laws is another issue that needs to be tackled, if people have to feel more comfortable about transacting online.

Taxation of E-commerce transaction has been one of the most debated issues that are yet to be resolved by India and most other countries. The explosive growth of e-commerce has led many executives to question how their companies can properly administer taxes on Internet sales. Without sales tax, online sellers get a price advantage over brick and mortar companies. While e-commerce has been causing loss of tax revenues to the Government, many politicians continue to insist that the Net must remain tax-free to ensure continued growth, and that collecting sales taxes on Net commerce could restrict its expansion.

A permanent ban on custom duties on electronic transmissions, international tax rules that are neutral, simple and certain and simplification of state and local sales taxes. The Central Board of Direct Taxes, which submitted its report in September 2001, recommended that e-commerce transaction should be taxed just like traditional commerce.

Also RBI is about to become the first Government owned digital signature Certifying Authority (CA) in India. The move is expected to initiate the electronic transaction process in the banking sector and will have far reaching results in terms of cost and speed of transactions between government- owned banks.

Thus efficiency, growth and the need to satisfy a growing tech-survey consumer base are three clear rationales for implementing E-banking in India. The four forces-customers, technology, convergence and globalization have the most important effect on the Indian financial sector and these changes are forcing banks to redefine their business models and integrate technology into all aspect of operation.

Challenges of the "E-Banking Revolution

Electronic banking is the wave of the future. It provides enormous benefits to consumers in terms of the ease and cost of transactions. But it also poses new challenges for country authorities in regulating and supervising the financial system and in designing and implementing macroeconomic policy.

Electronic banking has been around for some time in the form of automatic teller machines and telephone transactions. More recently, it has been transformed by the Internet, a new delivery channel for banking services that benefits both customers and banks. Access is fast, convenient, and available around the clock, whatever the customer's location (see illustration above). In addition, banks can provide services more efficiently and at substantially lower costs. For example, a typical customer transaction costing about \$1 in a traditional "brick and mortar" bank branch or \$0.60 through a phone call costs only about \$0.02 online.

Electronic banking also makes it easier for customers to compare banks' services and products, can increase competition among banks, and allows banks to penetrate new markets and thus expand their geographical reach. Some even see electronic banking as an opportunity for countries with underdeveloped financial systems to leapfrog developmental stages. Customers in such countries can access services more easily from banks abroad and through wireless communication systems, which are developing more rapidly than traditional "wired" communication networks.

The flip side of this technological boom is that electronic banking is not only susceptible to, but may exacerbate, some of the same risks—particularly governance, legal, operational, and reputational—inherent in traditional banking. In addition, it poses new challenges. In response, many national regulators have already modified their regulations to achieve their main objectives: ensuring the safety and soundness of the domestic banking system, promoting market discipline, and protecting customer rights and the public trust in the banking system. Policymakers are also becoming increasingly aware of the greater potential impact of macroeconomic policy on capital movements.

Limitations of the Study

This study suffers from few limitations.

- The study was restricted to Ranchi (Jharkhand)

- The sample size is 60. This may not be the true representation of total population.
- Perceptions, attitudes, and time constraints of the customers would have influenced their responses.

Data Analysis & Interpretation:-

Demographics

Table 1: Age wise classification of respondents

Graduate	Post Graduate	Others
15	40	5

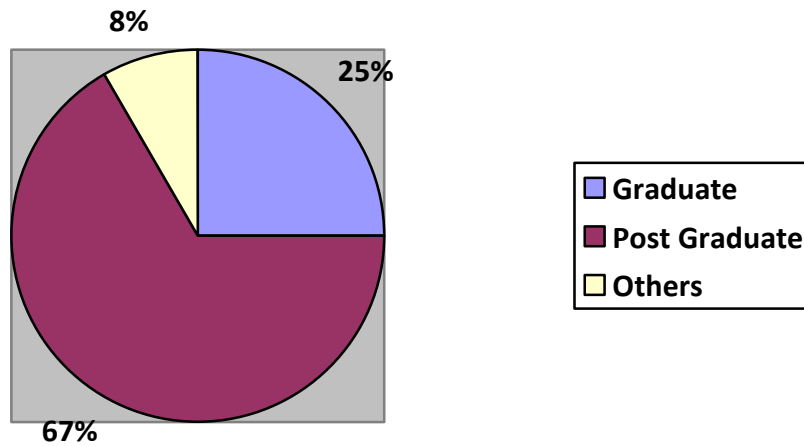


Table 2: Type of relationship with bank

Savings a/c	Demat A/c
42	18

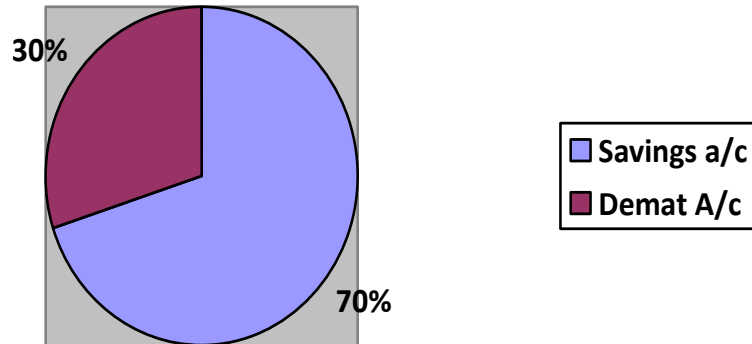


Table 3: Time period associated with the bank

< 1yr	1 – 3 yrs	3 – 5 yrs	> 5 yrs
19	24	10	7

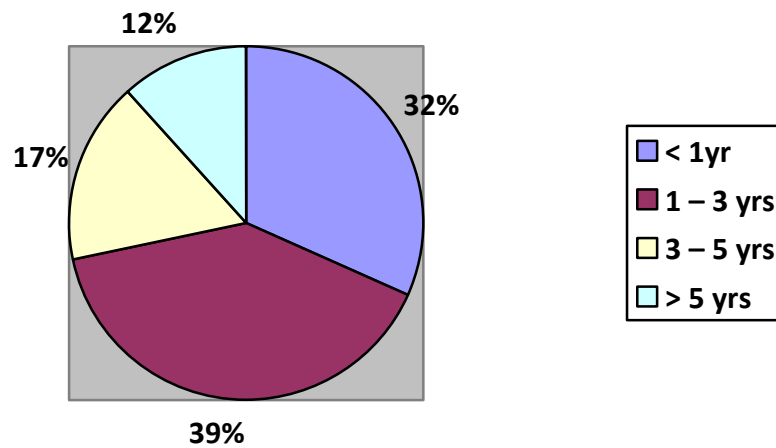


Table 4: Respondents ATM service usage

Regularly	Once in a Week	Once in a Month	Never
40	5	13	2

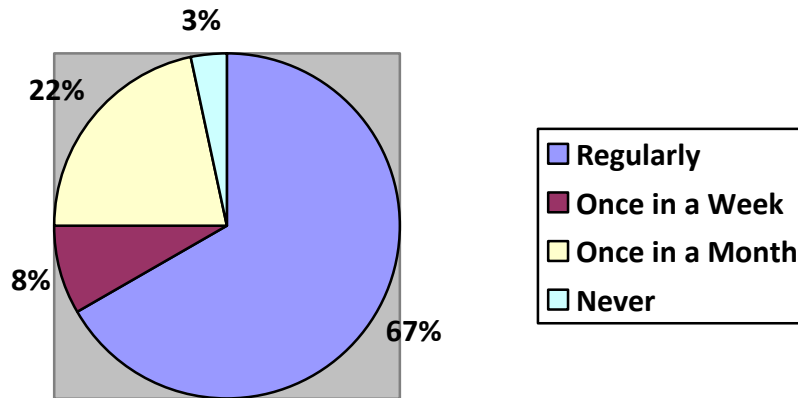
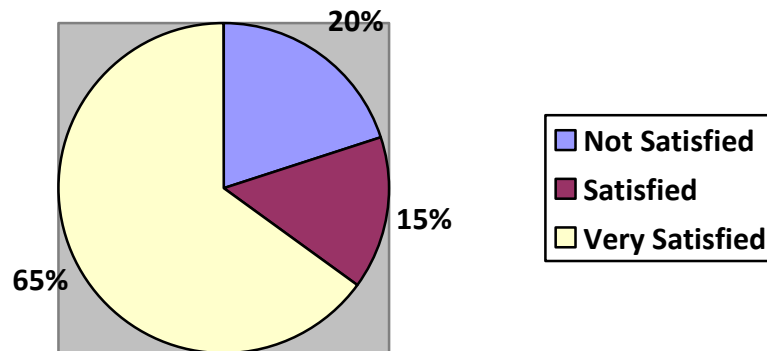


Table 5: Level of Satisfaction with ATM service

ATM Banking Services	Not Satisfied	Satisfied	Very Satisfied
ATM Banking Services	12	9	39



	Not Satisfied	Satisfied	Very Satisfied
Variety of Transactions	48	7	5

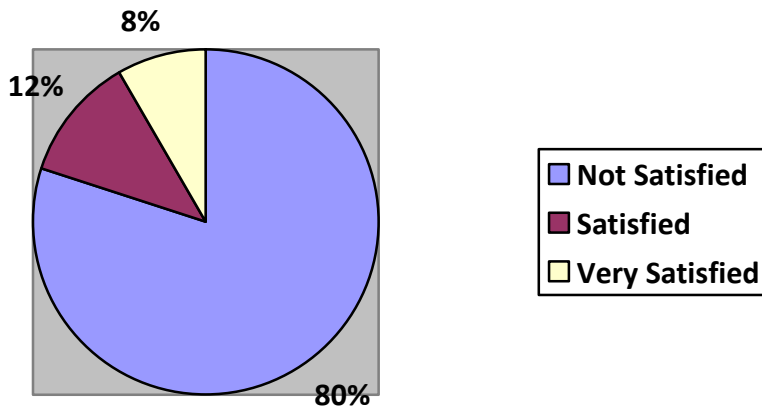


Table 6: Telephone-banking Usage

Regularly	Once in a Week	Once in a Month	Never
3	7	13	37

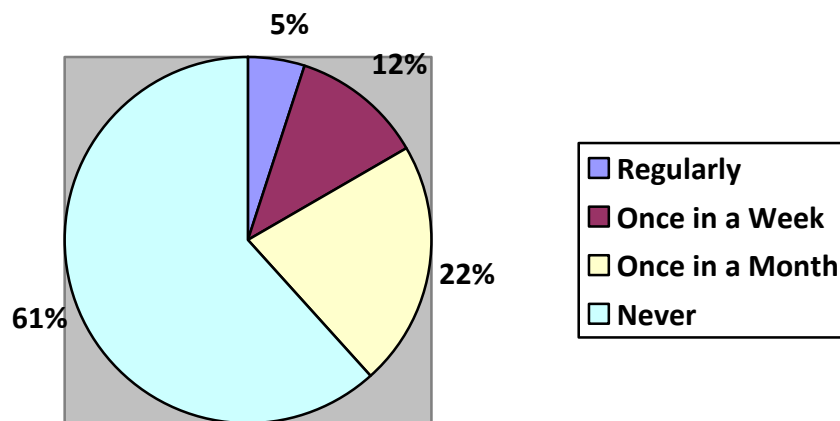


Table 7: Level of satisfaction related to Internet banking

At Cyber Café	At Home	With Mobile Phone
33	8	19

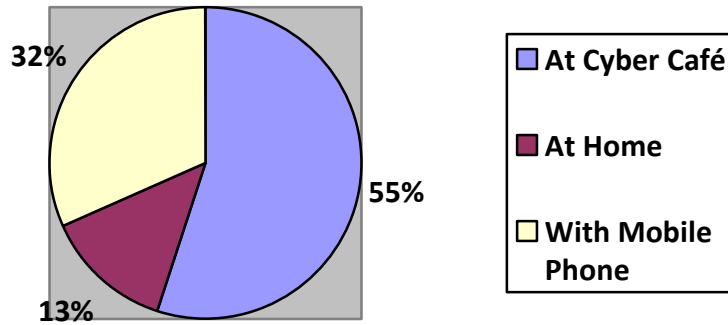


Table 8: Customers using IVRS

Regularly	Once in a Week	Once in a Month	Never
27	9	3	21

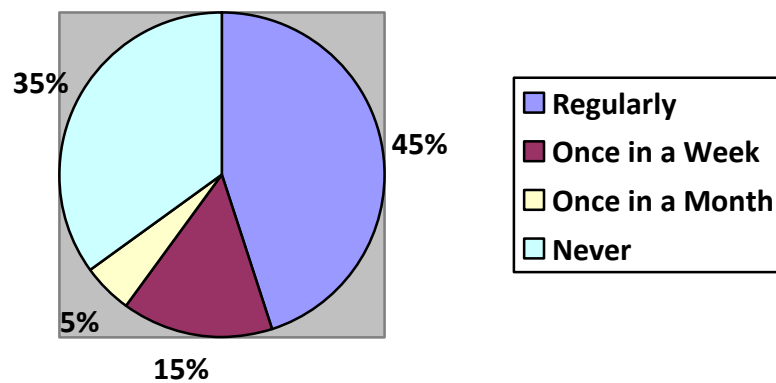
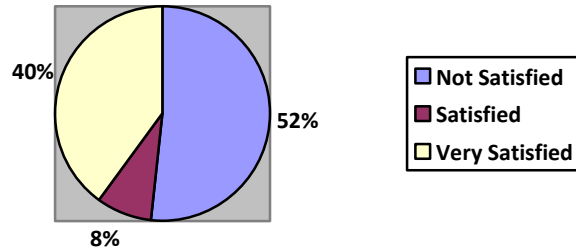
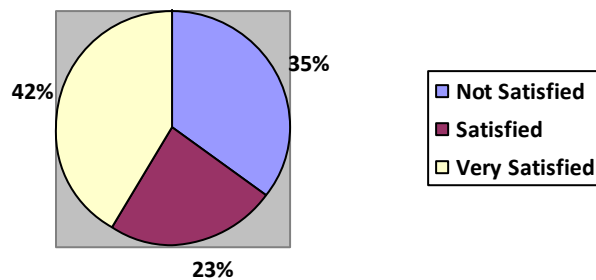


Table 9: Respondents level of satisfaction on IVRS

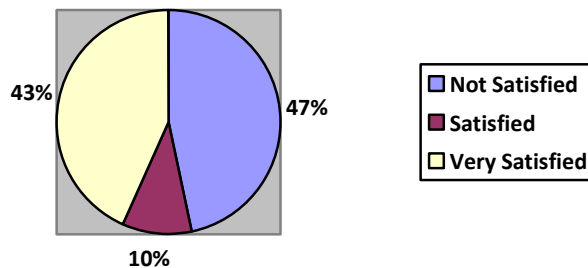
	Not Satisfied	Satisfied	Very Satisfied
Understandable	31	5	24



	Not Satisfied	Satisfied	Very Satisfied
Transactions	21	14	25



	Not Satisfied	Satisfied	Very Satisfied
User- friendliness	28	6	26



Findings

ATM usage was found regular and more than once in a week. On the contrary, 1/4 of the respondents never used IVRS. Usage of the internet banking and telephone banking was found notably average.

ATMs that are nearer to their home are preferred. Home is the preferred place for most, of the respondents to access internet banking.

Customers expressed satisfaction with the overall ATM banking services. However, they were not satisfied with the transaction varieties offered by current banking ATMs.

The overall level of satisfaction on Internet banking was found unsatisfactory and they expressed their inconvenience on issues like content sufficiency, page setup, ease of use and visual design. On the other hand, they were satisfied with variety of transactions and loading speed of web pages.

The customers were not satisfied with IVRS. Surprisingly, all attributes like understandable menu, choice of transactions, user friendliness and faster service were rated unsatisfactory.

Suggestions

On the basis of our study related with the Single Window Concept, we found that there is lot of possibilities of improvement in this area as many aspects are yet to be discovered.

However the problems that need to be resolved in order to implement this systems are as follows:

1. Infrastructure:

Information and Communication Technology (ICT) infrastructure is prior most to offer and to implement Single Window Concept. Communication infrastructure such as Internet, WAN, Telephone lines must be adequate for e-banking. Especially, Internet is the major problem because of Low bandwidth and low speed.

Another major problem is frequent Electric Power disruption. This will create lot of problems in e-banking activities which are basically depending on power supply. It will force the banks to depend on generators results in high operational cost.

These problems are considered as obstacles for the expansion of e-banking services in the country.

2. Establishment Expenses:

Initially, banks have to invest huge amount of money in order to provide e-banking services. They have to buy and install the required systems and facilities which lead increased establishment expense. For well-established banks like State Bank Of India, the establishment cost may not be a problem. But for small and new banks, it is very difficult to invest such huge amount.

3. Lack of Skilled Manpower:

In order to offer and maintain e-banking services without any fault, banks need skilled manpower.

4. Legal Framework:

Legal framework is plying a crucial role in facilitating e-banking system and in its growth.

5. Socio-Cultural Aspects:

There is a resistance to changes among customers and some staff members. This is mainly because of lack of awareness on new technologies and its benefits. The fear of risk is also another reason for their resistance. In case of staff members, the lack of training and sticking with existing structure are the problems.

The overall satisfaction level of customers on e-banking services is found unsatisfactory. Customers' expressed their inconvenience on issues like Demand Drafts (DD) transactions, Cheque encashing, BOND payments etc.

Hence, in near future banks claiming to be fully CBS (Core Banking Service), must focus on developing of a Single Window System concept, where the customers can have all their banking transactions done easily and conveniently.

Conclusion

From all of this, we have learnt that information technology has empowered customers and businesses with information needed to make better investment decisions. At the same time, technology is allowing banks to offer new products, operate more efficiently, raise productivity, expand geographically and compete globally. A more efficient, productive banking industry is providing services of greater quality and value.

E-banking has become a necessary survival weapon and is fundamentally changing the banking industry worldwide. Today, the click of the mouse offers customers banking services at a much lower cost and empowers them with unprecedented freedom in choosing vendors for their financial service needs. No country today has a choice whether to implement E-banking or not given the global and competitive nature of the economy. The invasion of banking by technology has created an information age and commoditization of banking services. Banks have come to realize that survival in the new e-economy depends on delivering some or all of their banking services on the Internet while continuing to support their traditional infrastructure.

The rise of E-banking is redefining business relationships and the most successful banks will be those that can truly strengthen their relationship with their customers.

Without any doubt, the international scope of E-banking provides new growth perspectives and Internet business is a catalyst for new technologies and new business processes. With rapid advances in telecommunication systems and digital technology, E-banking has become a strategic weapon for banks to remain profitable. It has been transformed beyond what anyone could have foreseen 25 years ago.

Two years ago, E-banking was a strategic advantage, nowadays; it is a business reality, if not a necessity.

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