INTERNATIONAL JOURNAL OF RESEARCH SCIENCE & MANAGEMENT

THE EVOLUTION OF E-BANKING: CHALLENGES AND OPPORTUNITIES IN INDIA

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Keywords: Electronic banking, Challenges and Opportunities in India, technology awareness, banking services.

Abstract
India is still in the early stages of E Banking growth and development. Competition and changes in technology and lifestyle in the last 15 years have changed the face of Banking. Today banking is known as innovative banking. Indian banking industry is the midst of an IT revolution. E- Banking, i.e. banking through electronic channels has gained increasing popularity in recent years. This system provides alternatives for faster delivery of banking services to a wide range of customers. Productivity enhancement, innovative products, speedy transactions seamless transfer of funds, real time information system, and efficient risk management are some of the advantage derived through the technology. Information technology has also improved the efficiency and robustness of business processes across banking sector. This study aims the concept and Scope of E Banking is still evolving several initiatives taken by Government of India as well as Country's Central Bank, the Reserve Bank of India have facilitated the development of E-Banking in India. This paper aims to present the E-Banking challenges and opportunities in India.

Introduction
Banking in India in the modern sense originated in the last decades of the 18th century. Among the first banks were the Bank of Hindustan, which was established in 1770 and liquidated in 1829-32; and the General Bank of India, established 1786 but failed in 1791.The largest and oldest bank still in existence, is the State Bank of India. It originated as the Bank of Calcutta in June 1806. In 1809, it was renamed as the Bank of Bengal. This was one of the three banks funded by a presidency government, the other two were the Bank of Bombay and the Bank of Madras. The three banks were merged in 1921 to form the Imperial Bank of India, which upon India's independence, became the State Bank of India in 1955. For many years the presidency banks had acted as quasi-central banks, as did their successors, until the Reserve Bank of India was established in 1935, under the Reserve Bank of India Act, 1934.

In 1960, the State Banks of India was given control of eight state-associated banks under the State Bank of India (Subsidiary Banks) Act, 1959. These are now called its associate banks. But at present only five associates for SBI Group. In 1969 the Indian government nationalised 14 major private banks. In 1980, 6 more private banks were nationalized.

The Indian banking sector is broadly classified into scheduled banks and non-scheduled banks. The scheduled banks are those which are included under the 2nd Schedule of the Reserve Bank of India Act, 1934. The scheduled banks are further classified into: nationalised banks; State Bank of India and its associates; Regional Rural Banks (RRBs); foreign banks; and other Indian private sector banks. The term commercial banks refer to both scheduled and non-scheduled commercial banks which are regulated under the Banking Regulation Act, 1949.

E-Banking -The concept:

Information Technology has become a necessary tool in today's organizations. Banks today operate in a highly globalized, liberalized, privatized and a competitive environment. In order to survive in this environment banks have to use IT. IT has introduced new business paradigm. It is increasingly playing a significant role in improving the services in the banking industry.

Online banking is an electronic payment system that enables customers of a financial institution to conduct financial transactions on a website operated by the institution, such as a retail bank, virtual bank, credit union or building society. Online banking is also referred as Internet banking, e-banking, virtual banking and by other terms.

E-banking is a brew of services that embody Internet banking, Mobile banking, ATM kiosks, Fund Transfer System, Real Time Gross Settlement (payment & allotment system), Credit/ Debit/Smart/Kisan Cards, Cash government services, as well as Data warehousing, Operational interpretation for MIS as well as Customer Relationship Management. The rigorous use of IT in the banking sector started immediately after the recommendations of the Committee on Financial System (Narasimham Committee, 1991) were implemented in 1991. The recommendations of the committee include, among others, free entry of private sector/ foreign banks. The private and foreign banks brought new technologies and rendered technology based world class quality services to customers through ATMs, credit cards and internet banking, which PSU banks, hitherto, were not even dreamed about. By offering world class quality services, these banks started snatching customers from PSU (Public Sector Undertaking) banks and they felt the heat and realized that if they do not follow the path of these banks, they would be thrown out from the banking scene within no time. Thus the use of technology in banking has resulted in availability of multiple delivery channels like ATMs,

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telebanking, internet banking, mobile banking, anywhere and anytime banking etc. Thus the term E-banking includes RTGS, NEFT, ECS, Credit cards and debit cards, Cheque truncation, ATM, Tele banking, Internet banking and Mobile banking. The concept and scope of e-banking is still in the transitional stage. E- Banking has broken the barriers of branch banking.

Evolution of e-banking

E-banking came into being in UK and USA in1920s. It became prominently popular during1960s through electronic funds transfers and credit cards. The concept of web-based banking came into existence in Europe and USA in the beginning of 1980s. It has been estimated that around 40 percent of banking transaction would be done through Net.

E-Banking in India:

In India e-banking is of fairly recent origin. The traditional model for banking has been through branch banking. Only in the early 1990s there has been start of non-branch banking services. The good old manual systems on which Indian Banking depended upon for centuries seem to have no place today. The credit of launching internet banking in India goes to ICICI Bank. Citibank and HDFC Bank followed with internet banking services in 1999. Several initiatives have been taken by the Government of India as well as the Reserve Bank to facilitate the development of e-banking in India. The Government of India enacted the IT Act, 2000 which provided legal recognition to electronic transactions and other means of electronic commerce. The Reserve Bank is monitoring and reviewing the legal and other requirements of e-banking on a continuous basis to ensure that e-banking would develop on sound lines and e-banking related challenges would not pose a threat to financial stability. A high level Committee under chairmanship of Dr. K.C. Chakrabarty and members from IIT, IIM, IDRBT, Banks and the Reserve Bank prepared the „IT Vision Document-2011-17‟, for the Reserve Bank and banks which provides an indicative road map for enhanced usage of IT in the banking sector.

Need/Importance of the study

New technologies set off a process of change. That, in turn, poses its own set of challenges to institution as well as to consumers. IT is not yet a very comfortable choice for millions. Therefore, if we are to encourage IT proliferation, we must facilitate a change in customer mindsets and attitudes. Adoption of E banking is a major challenge. Thus, satisfaction of the banking customers as well as an area of growing interest to researchers, managers and policymakers which will through light to the role of e-banking from the perspective of the customers. Researches in this emerging area will be helpful for providing suggestions and recommendations towards the implementation and challenges of e-banking.

Objectives of the study

1. To identify the Evolution of E-banking in India
2. To identify various e-banking benefits and services/products adopted by Indian banks.
3. To study and analyze the progress made by Indian banking industry in adoption of technology.
4. To highlights the Opportunities and challenges associated with E-Banking in Indian context
5. Finally to make some recommendations for future development of E-banking.

Review of literature

The importance of electronic based banking products is increasing day by day. A review of existing literature reveals the impact, challenges, trends and development made by E-banking in the Indian banking sector.. The reports briefly summarized below:

Aggarwal (2003),in his paper 'E banking for comprehensive E- Democracy: An Indian Discernment', looked for such avenues and evaluated that e-banking could play significant role in E-democracy for successful online bill payment, online brokerage, account management anywhere banking ,and finally concluded that e-banking services provide one stop service and informational unit that provide great benefits to banks, customers, employers and government.

Raghavan (2006) opined that at present, over 85% of the finished payment transactions are electronic and traditional way of doing banking at the branch level has relatively little importance to electronic banking users. Many banks, including PSU banks, would have online ATMs, phone banking, virtual banking, e-banking, Internet banking, etc. by 2020.

Mohan (2006) remarked that Indian banking is at the threshold of a paradigm shift and a significant development has been achieved by banks in offering a variety of new and innovative e-banking services to customers today, which was not thought of before. However, public sector banks have not been able to harness the benefits of computerization.

Uppal and Chawla (2009) found that the customers of public sector, private sector and foreign banks in Ludhiana district of Punjab are interested in e-banking services, but at the same time are facing problems like inadequate knowledge, poor network, lack of infrastructure, unsuitable location, misuse of ATM cards and difficulty to open an account. Indian customers' perception in the context of e-banking has been examined by **Reeti Agarwal et al (2009)** and found that people in the age group of 31-45 years using e-banking most frequently. Respondents opined that using e-banking for balance inquiry to be the most useful, closely

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followed by inter-account transfer of funds and they found e-banking least useful for lodging complaints. Slow transaction speed was found to be the most frequent problem faced, closely followed by non-availability of the server while using e-banking.
Sharma (2009) opined that 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 context.
Kumar and Sinha (2009) cited various instances of hacking and phishing attacks reported throughout India. They remarked that cyber crimes prove that e-banking has several loopholes that can be easily exploited and users need to be extra cautious while making online transactions.
Shukla and Shukla (2011) stated that E-banking offers a higher level of convenience for managing one's finances even from one's bedroom. However, it continues to present challenges to the financial security and personal privacy.
Customers are advised not to share personal information like PIN numbers, passwords etc with anyone, including employees of the bank; change ATM PIN and online login and transaction passwords on a regular basis; ensure that the logged in session is properly signed out.
Mishra (2011) provided useful tips to ensure safety of IB transactions. IB users are advised not to reply to any mail, phone call or letter, asking for the IB information like login id or password, and not to click on any link provided in any mail, claiming to be the link for the bank's website are the important tips, among others.

Research design

Research design is the plan, structure and strategy of investigations conceived to obtain answers to research questions and to control variance. The research design constitutes the blue print for the collection, measurement and analysis of data. It helps the researcher in the allocation of his limited resources by posing crucial choices.
Research methodology & database:
The study is based on descriptive analysis and various secondary information sources and includes different literature reviews, case studies, published sources of data collected from various research papers, journals and magazines, and report on Trends and Progress of Banking in India published by Reserve Bank of India, Mumbai, and also includes websites of banks.

Features of electronic banking

1. Easy Electronic Fund transfer facility.
2. Better efficiency in Customer relationship management.
3. Making the Payments of bills like electricity, telephone bills, and mobile recharge.
4. It introduces virgin & innovative banking products & services.
5. It can view of balance of accounts and statements;
6. E-banking can bring doorstep services.
7. Balance and transaction history search.
8. Transaction history export.
9. Order mini statements.
10. Mobile banking.
11. Pay anyone payments Multi Payments.
12. SMS banking services.

Problems of electronic banking

1. A Customer may have to face some risky transaction & frauds.
2. Failure or interruption of power supply cause to break down in e-banking.
3. Financial Loss of heavy income at times of settlement of higher magnitude.
4. Cost to be incurred for training the staff may not be profitable.
5. Customers may have to face continuous availability of internet in some remote areas.

E-Banking and its greater services

To cope with the pressure of growing competition, Indian commercial banks have adopted several initiatives and e-banking is one of them. Indian banks offer to their customers following e-banking products and services:
(A)**Benefits of E-Banking towards Customers:**

1. **Accessibility:** Customers accounts can easily be accessible with an E-banking account. Convenience acts as a tremendous psychological benefit all the time.
2. **Anytime anywhere banking**: E-banking provides 24 hours service to the customers for anytime, anywhere banking, which means customers can access E - Banking services 7 days a week, 24 hours a day.

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3. **Cash free shopping:** A customer can shop without any need of carrying paper money with him.
4. **ATM withdrawal:** Customer can withdraw at any time through ATMs that are now widely available throughout the country. Besides withdrawing cash customers can also have mini banks statements, balance inquiry at these ATMs.
5. **Bill payment:** E banking has also greatly helped in payment of utility bill. Now there is no need to stand in long queues outside banks for his/her purpose.
6. Brings down "Cost of Banking" to the customer over a period a period of time.
7. On-line purchase of goods and services including online payment for the same.

(B) Benefits of E-Banking towards Banking Industry:

1. **More customers**: Better service levels and strategic marketing initiatives, banks are able toreach out to more customers than possible through traditional banking through physical location branches.
2. **Cost savings:** Banks save a significant amount of operational capital from not having to open physical location branches in new locations. These savings are passed onto the consumer in the form of reduced or no fees for inter-bank and even intra-bank money transfers, no fees for online payment of utilities' bills, and cash-back options on frequent use of online-applied bank creditcards.
3. **Boundary less services**: Banks can provide their services to customers without any geographic barrier. Adoption of information technology enabled tools helped banks in reducing operational costs, infrastructure cost, staffing etc and helped to reduce customer waiting time in branches resulting in highly satisfied customers.
4. Reduces customer visits to the branch and thereby human intervention.
5. Inter-branch reconciliation is immediate thereby reducing chances of fraud and misappropriation
6. On-line banking is an effective medium of promotion of various schemes of the bank, a marketing tool indeed.

(C) Popular services covered under E-Banking:

The popular services covered under E-banking include :-

1. Automated Teller Machines,
2. Credit Cards,
3. Debit Cards,
4. Smart Cards,
5. Electronic Funds Transfer (EFT) System,
6. Cheques Truncation Payment System,
7. Mobile Banking,
8. Internet Banking,
9. Telephone Banking, etc.

Analysis and Interpretation:

Growth of banking in India of scheduled commercial banks:

By 2013 the Indian Banking Industry employed 1,175,149 employees and had a total of 109,811 branches in India and 171 branches abroad and manages an aggregate deposit of Rs.67504.54 billion (US$1.1 trillion or €1.0 trillion) and bank credit of Rs.52604.59 billion (US$820 billion or €780 billion). The net profit of the banks operating in India was Rs.1027.51 billion (US$16 billion or €15 billion) against a turnover of Rs.9148.59 billion (US$140 billion or €140 billion) for the financial year 2012-13

On 28 Aug, 2014,Pradhan Mantri Jan Dhan Yojana (Hindi: प्रधानमंत्री जन धन योजना, English: Prime Minister's People Money Scheme) is a scheme for comprehensive financial inclusion launched by the Prime Minister of India, Narendra Modi.Run by Department of Financial Services, Ministry of Finance, on the inauguration day, 1.5 Crore (15 million) bank accounts were opened under this scheme. By 15 July 2015, 16.92 crore accounts were opened, with around Rs.20288.37 crore (US$3.2 billion) were deposited under the scheme, which also has an option for opening new bank accounts with zero balance.

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Table I- showing number of banks in India

Important indicators	As on 31st March						
	2006	2007	2008	2009	2010	2011	2012
SBI Group	8	8	8	7	7	6	6
State-owned banks	20	20	20	20	20	20	20
Private sector banks	28	25	23	22	22	21	21
Foreign banks	29	29	28	31	32	34	34
Regional rural banks	133	96	91	86	82	82	82
Non-scheduled Commercial banks	4	4	4	4	4	4	4
Scheduled Commercial banks	218	179	171	166	165	165	169

Source: Statistical table relating to Banks in India/RBI. (2011-12)

It is an important to note that presently almost 98% of branches of Public sector branches are fully computerized and within which almost 90% of branches are on CBS (Core Banking Solution) platform.

Technological development of E-Banking in India

Up gradation of technology, innovation and mordernisation are the key factors of having excellence in banking sector. Technological innovation not only enables a broader reach for consumer banking and financial services, but also enhances its capacity for continued and inclusive growth. The different ways on which internet delivery of financial services and products are given below –

a) **Automated Teller Machine (ATM):-**ATM is a modern device introduced by the banks to enable the customers himself to deposit or to withdraw cash without visiting the bank branches. The system is known as, Any Time Money or Any Where Money, because it enables the customers to withdraw money from the bank from any of its ATMs round the clock from any city, state, across the country and even from outside the country. ATM reduces the work pressure of bank's staff and avoids queues in bank premises.

A major technological development, which has revolutionized the delivery channel in the banking sector, has been the Automated Teller Machines (ATMs). HSBC was the first bank to introduce ATM in India in 1987. Later new private sector banks have taken the lead in introducing ATMs in a big way and the public sector banks also pursued the installation of ATMs all over the country. In 1998 India had just 500 ATMs, but now as per the data provided by the Ministry of Finance, and RBI Mumbai has shown below in Table –II.

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Table II- showing the growth of bank group-wise ATMs of Scheduled Commercial banks in India

Bank Group	Years (As at end -March)								
	2010-2011			2011-2012			2012-2013		
	On-Site ATMs	Off-site ATMs	Total No. of ATMs	On-Site ATMs	Off-site ATMs	Total No. of ATMs	On-Site ATMs	Off-site ATMs	Total No. of ATMs
1.Public Sector Banks	**29795**	**19692**	**49487**	**34012**	**24181**	**58193**	**40241**	**29411**	**69652**
1.1.Nationalise banks *	15691	9145	24836	18277	12773	31050	20658	14701	35359
1.2. SBI Group	14104	10547	24651	15735	11408	27143	18708	13883	32591
2. Private Sector banks	**10648**	**13003**	**23651**	**13249**	**22830**	**36079**	**15236**	**27865**	**43101**
2.1. Old Private sector banks	26411	1485	4126	3342	2429	5771	4054	3512	7566
2.2. New Private sector banks	8007	11518	19525	9907	20401	30308	11182	24353	35535
3.Foreign Banks	**286**	**1081**	**1367**	**284**	**1130**	**1414**	**283**	**978**	**1261**
All SCBs (1+2+3)	**40729**	**33776**	**74505**	**47545**	**48141**	**95686**	**55760**	**58254**	**114014**

Source: Report on trend progress of Banking in India, RBI, Mumbai,.(2011,2012,2013).
Note: * Include IDBI Bank Ltd.(2010-11), * Excluding IDBI Bank Ltd.(2011-12), * Excluding IDBI Bank Ltd.(2012-13)

Branches and ATMs of Scheduled Commercial Banks as of end December, 2014

Bank type	Number of branches	On-site ATMs	Off-site ATMs	Total ATMs
Nationalised banks	33,627	38,606	22,265	60,871
State Bank of India	13,661	28,926	22,827	51,753
Old private sector banks	4,511	4,761	4,624	9,385
New private sector banks	1,685	12,546	26,839	39,385
Foreign banks	242	295	854	1,149
TOTAL	***53,726***	***85,134***	***77,409***	***1,62,543***

b)Debit card and Credit card:- It is a card which designate to customer to withdraw own money from the bank in any time that is to say, used for cash withdrawal from ATM, funds transfer, paying bills, accessing details account information, changing PIN etc. Debit card allows the holder to spend only what is in his account. It is also called plastic money. The most important difference between Credit card is a post paid card and the holder of the card is empowered to spend money wherever and whenever he wants with his credit card within the limits fixed by his banks.

ISSN: 2349- 5197
Impact Factor (PIF): 2.138

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Table III- showing the bank group-wise outstanding number of Debit card and Credit card issued by Scheduled Commercial banks(SCBs)

Bank Group	**Years (As at end -March)**					
	Outstanding No. of Debit card(in millions)			**Outstanding No. of Credit card(in millions)**		
	2011	**2012**	**2013**	**2011**	**2012**	**2013**
1.Public Sector Banks	170	214.6	260.6	3.08	3.1	3.5
1.1.Nationalise banks*	80	103	118.6	0.78	0.84	0.9
1.2. SBI Group	90	112	136.4	2.3	2.22	2.6
2. Private Sector banks	53	60	67.3	9.32	9.7	11.1
2.1. Old Private sector banks	12	13.9	15.4	0.04	0.04	0.04
2.2. New Private sector banks	41	46	51.9	9.28	9.63	11.1
3.Foreign Banks	3.9	3.8	3.3	5.64	4.92	5
All SCBs (1+2+3)	**228**	**278.4**	**331.2**	**18.04**	**17.65**	**19.5**

Source: Report on trend progress of Banking in India, RBI, Mumbai,.(2011,2012,2013).
Note: * Figures may not add up to the total due to rounding off. * Excluding IDBI Bank Ltd.(2012-13)

Table III showing Bank Group-wise outstanding number of Debit cards and Credit cards issued by scheduled commercial banks as at the end of March 2011,2012, and 2013. In 2010-11, Public sector banks have highest number of debit cards issued by the industry has increased from 170 million in 2010-11 to 2060.60 million in 2012-13. Nationalized banks (118.6 million) and SBI group(136.4 million) have high percent of cards issued as compared to Private sector banks (67.3 million) in 2012-13. The share of new private sector banks is higher as compared to old private sector banks. Foreign banks have (3.3 million) in 2012-2013 of debit cards issued.

Table III also shows outstanding number of Credit cards issued by scheduled commercial banks as at the end of March 2013. The number of credit cards issued has increased from 3.08 million in 2010-11 to 3.50 in 2011-2012. In 2012-13 the total card issued in case of private sector banks is highest (11.1) in comparison to 2010-2011 (9.32). The share of Public sector banks is just 17.07% and that of foreign banks have 19.5 million in 2012-13 of credit card issued.

c) Real time gross settlement (RTGS): is a mechanism of transferring funds from one bank to another on a 'real time' and on 'gross' basis settlement. Under RTGS, the minimum amount of fund transfer is Rupees Two Lakhs (3100 US $) and there is no limit to the maximum amount. RTGS transactions are interbank as well as between customers through bank accounts. RTGS transfers are instantaneous unlike National Electronic Funds Transfer (NEFT) where the transfers are batched together and affected at hourly intervals. RBI allows the RTGS facility for transfers above Rs1 lakh. The RBI window is open on weekdays from 9 am to 4.30 pm; on Saturdays from 9 am to 12.30 pm

d) Electronic funds transfer (EFT):-The system automatically transfers money from one account to another. This system facilitates speedier transfer of funds electronically from any branch to any other branch. In this system the sender and the receiver of funds may be located in different cities and may even bank with different banks. Funds transfer within the same city is also permitted. The scheme has been in operation since February 7, 1996, in India.

e) National electronic fund transfer (NEFT):- Introduced in October 2005, is a nation-wide electronic payment system that uses a secure mode of transferring funds from one bank branch to another bank branch. There is no limit either minimum or maximum on the amount of funds that could be transferred using NEFT. The fund transfer takes place in hourly batches - there are eleven settlements from 9 am to 7 pm on week days and five settlements from 9 am to 1 pm on Saturdays.

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Table IV- showing the volume and value of electronic transaction by Scheduled Commercial banks(SCBs)

Type of Transaction	Volume (in Millions)			Value (in billions)		
	Year			Year		
	2010-11	2011-12	2012-13	2010-11	2011-12	2012-13
ECS Credit	117	121.5	122.2	1817	1838	1771
ECS Debit	157	165	177	736	834	1083
Credit Cards	265	320	397	755	966	1230
Debit Cards	237	328	469	387	534	743
NEFT	132	226	394	9321	17904	29022
RTGS	49	55	69	484872	539308	676841

Source: Report on trends and progress of Banking in India, RBI, Mumbai,.(2011,2012,2013). Note: % change could be slightly different as absolute numbers have been rounded off to million or billion.

f) Tele banking: Tele banking refers to banking on phone services. A customer can access information about his/her account through a telephone call and by giving the coded Personal Identification Number (PIN) to the bank. This service is provided by phone. To access an account, it is required to dial a particular telephone number and there are several options of services such as:

- Checking account balance
- Funds transfer between current, savings and credit card account
- Bill payments
- Stock exchange transaction
- Receive statement via fax
- Loan payment information

g) Internet Banking (IB)

Internet Banking: Internet banking involves use of internet for delivery of banking products and services. In internet banking, any inquiry or transaction is processed online without any reference to the branch (anywhere banking) at any time. **• Benefits of Internet Banking:** • Reduce the transaction costs of offering several banking services and diminishes the need for longer numbers of expensive brick and mortar branches and staff. • Increase convenience for customers, since they can conduct many banking transaction 24 hours a day. • Increase customer loyalty. • Improve customer access. • Attract new customers.
• Easy online application for all accounts, including personal loans and mortgages

h) Mobile Banking: - Mobile Banking: A new revolution in the realm of e-banking is the emergence of mobile banking. On-line banking is now moving to the mobile world, giving everybody with a mobile phone access to real-time banking services, regardless of their location. It provides a new way to pick up information and interact with the banks to carry out the relevant banking business. Booking and paying for travel and even tickets is also expected to be a growth area. This is a very flexible way of transacting banking business.

i) *KYC:* - *KYC* means "*Know Your Customer*". It is a process by which *banks* obtain information about the identity and address of the customers. This process helps to ensure that *banks*' services are not misused. The *KYC* procedure is to be completed by the *banks* while opening accounts and also periodically update the same.

j) Electronic statements :- With the wider access to the Internet and online banking, bank statements (also known as electronic statements or e-statements) can be viewed online, and downloaded or printed by the customer. To reduce the cost of postage and the generation of paper bank statements, some financial institutions encourage their customers to receive bank statements electronically, for example by charging a fee for paper statements. This may be as attachments to emails or, as a security measure, as a reminder.

Digital India – E Banking is an important part of digital India. Most banks today want to become digital banking leaders—after all, that's where the customers are. And for much of the past decade as digital banking has taken hold, most leading traditional banks have incorporated strong digital strategies.

Adoption of banking technology

The IT revolution has had a great impact on the Indian banking system. The use of computers has led to the introduction of online banking in India. The use of computers in the banking sector in India has increased many fold after the economic liberalisation of

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1991 as the country's banking sector has been exposed to the world's market. Indian banks were finding it difficult to compete with the international banks in terms of customer service, without the use of information technology.
The RBI set up a number of committees to define and co-ordinate banking technology. These have included:

1. In 1984 was formed the Committee on Mechanisation in the Banking Industry (1984) whose chairman was Dr. C Rangarajan, Deputy Governor, Reserve Bank of India. The major recommendations of this committee were introducing MICR technology in all the banks in the metropolises in India. This provided for the use of standardized cheque forms and encoders.
2. In 1988, the RBI set up the Committee on Computerisation in Banks (1988) headed by Dr. C Rangarajan. It emphasized that settlement operation must be computerized in the clearing houses of RBI in Bhubaneshwar, Guwahati, Jaipur, Patna and Thiruvananthapuram.
3. In 1994, the Committee on Technology Issues relating to Payment systems, Cheque Clearing and Securities Settlement in the Banking Industry (1994) was set up under Chairman W S Saraf. It emphasized Electronic Funds Transfer (EFT) system, with the BANKNET communications network
4. In 1995, the Committee for proposing Legislation on Electronic Funds Transfer and other Electronic Payments (1995) again emphasized EFT system.

Challenges in E-Banking

1. **Implementation of global technology**: There is a need to have an adequate level of infrastructure and human capacity building before the developing countries can adopt global technology for their local requirements. In developing countries, many consumers either do not trust or do not access to the necessary infrastructure to be able to process e-payments.
2. **Strengthening the public support**: In developing countries, in the past, most e-finance initiatives have been the result of joint efforts between the private and public sectors. If the public sector does not have the necessary resources to implement the projects it is important that joint efforts between public and private sectors along with the multilateral agencies like the World Bank, be developed to enable public support for e-finance related initiatives.
3. **Confidentiality, integrity and authentication**: These three are the very important features of the banking sector and were very successfully managed all over the world before the coming of internet. Communication across an open and thus insecure channel such as the internet might not be the best base for bank-client relations as trust might partially be lost.
4. **Customer Satisfaction**: In today's competitive world, satisfaction of customers is a major challenge for the banking sector because customers have alternative choices in various types of services provided by banks.
5. **Availability of Personnel services**: In present times, banks are to provide several services like social banking with financial possibilities, selective up gradation, computerization and innovative mechanization, better customer services, effective managerial culture, internal supervision and control, adequate profitability, strong organization culture etc.
6. **Non- Performing Assets (NPA)**: Nonperforming assets are another challenge to the banking sector. Vehicle loans and unsecured loans increases N.P.A. which terms 50% of banks retail portfolio was also hit due to upward movement in interest rates, restrictions on collection practices and soaring real estate prices. So that every bank have to take care about regular repayment of loans.
7. **Competition**: The nationalized banks and commercial banks have the competition from foreign and new private sector banks. Competition in banking sector brings various challenges before the banks such as product positioning, innovative ideas and channels, new market trends, cross selling. Skilled and specialized man power is to be utilized and result oriented targeted staff will be appointed.
8. The most serious threat faced by e-banking is that it is not safe and secures all the time. There may be loss of data due to technical defaults.
9. There is lack of proper infrastructure for the installation of e-delivery channels.

Opportunities

1. Internet banking facilities: It gives an ever-growing market both in terms of number of potential customers and geographical reach. Latest Technology and productive development has made access to Internet both cheaper and faster. The purchasing power and need for quality service of this segment of consumers are considerable. Anybody accessing Internet is a potential customer irrespective of his or her location. Thus, any business targeting final consumers cannot ignore the business potential of Internet.

2. Unique opportunities: Internet offers a unique opportunity to register business presence in a global market. Its effectiveness in disseminating information about one's business at a relatively cost effective manner is tremendous. Time sensitive information can be updated faster than any other media. A properly designed website can convey a more accurate and focused image of a product or service than any other media. Use of multimedia capabilities, i.e., sound, picture, movies etc., has made Internet as an ideal medium for information dissemination.

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3. Costs: Cost is an important issue in an e-venture. It is generally accepted that the cost of overhead, servicing and distribution, etc. through Internet is less compared to the traditional way of doing business. Although the magnitude of difference varies depending on the type of business and the estimates made, but there is unanimity that Internet provides a substantial cost advantage and this, in fact, is one of the major driving forces for more number of traditional businesses adapting to e-commerce and pure e-commerce firms to sprout.
4. The quality of service: It is a key feature of any e-commerce venture. The ability to sell one's product at anytime and anywhere to the satisfaction of customers is essential for e-business to succeed. Internet offers such opportunity, since the business presence is not restricted by time zone and geographical limitations. Replying to customers' queries through e-mail, setting up (Frequently Asked Questions) FAQ pages for anticipated queries, offering interactive help line, accepting customers' complaints online 24 hours a day and attending to the same, etc. are some of the features of business.
5. Cost of communication: Cost of communication through WWW is the least compared to any other medium. Many a time one's presence in the web may bring in international enquiries, which the business might not have targeted. The business should have proper plans to address such opportunities.
6. Multiple Channels: Banks can offer so many channels to access their banking and other services such as ATM, Local branches, Telephone/mobile banking, video banking etc. to increase the banking business.
7. Retail Lending: Recently banks have adopted customer segmentation which has helped in customizing their product folios well. Thus retail lending has become a focus area particularly in respect of financing of consumer durables, housing, automobiles etc., Retail lending has also helped in risks dispersal and in enhancing the earnings of banks with better recovery rates.
8. Indian Customers: The growing Indian banking sector with its strong home country linkages, seek a unique combination of Indian ethnicity and global standards that offers a valuable nice opportunities for Indian banks. The biggest opportunity for the Indian banking sector today is the Indian costumers. Demographic shifts in terms of income level and cultural shifts in terms of life style aspirations are changing the profile of the Indian customer. This is and will be a key driver of economic growth going forward. The Indian customers now seek to fulfill his lifestyle aspirations at a younger age with an optimal combination of equity and debt to finance consumption and asset creation. The consumer represents a market for a wide range of products and services he needs a mortgage to finance his house, an auto loan for his car, a credit card for on-going purchases, a bank account, a long term investment plan to his children’s higher education, pension plans for his retirement, a life insurance policy the possibilities are endless and this consumer does not live just in India’s top ten cities. He represents across cities, towns and villages i.e. in rural areas. Consumer goods companies are already tapping this potential it is for the banks to make the most of the opportunity to deliver solutions to this market.

Recommendations/Suggestions

In order to increase and achieve the level of mutual trust between banks, websites and customers, the following strategies should be applied by banks.

1. Banks should ensure that online banking is safe and secure for financial transaction like traditional banking.
2. Banks should organize seminar and conference to educate the customer regarding uses of online banking as well as security and privacy of their accounts.
3. Banks must emphasize on the convenience that online banking can provide to people, such as avoiding long queue, in order to motivate them to use it.
4. Banks must emphasize the cost saving that online can provide to the people, such as reduce transaction cost by use of online banking.
5. Special arrangements should be made by banks to ensure full security of customer funds. Technical defaults should be avoided by employing well trained and expert technicians in field of computers, so that loss of data can be avoided.
6. Employees of banks should be given special technical training for the use of e-banking so that they can further encourage customers to use the same.
7. Seminars and workshops should be organized on the healthy usage of e-banking especially for those who are ATM or computer illiterate.
8. E-banking services should be customized on basis of age, gender, occupation etc so that needs and requirements of people are met accordingly.
9. Government should make huge investments for building the infrastructure.

Conclusion

The banking industry has been a leader in the e-business world in recent years. The e-banking revolution has fundamentally changed the business of banking by scaling borders and bringing about new opportunities. In India also, it has strongly affected the strategic business considerations for banks by significantly cutting down costs of delivery and transactions. On the basis of the

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analysis, it can be concluded that the emerging payment system in India for large value transactions is RTGS, ECS for bulk payments and NEFT for one to one fund transfer. Among the card based payment systems debit card is more popular than credit cards. The number of ATMs in India, particularly in rural areas, is on the rise and customers irrespective of their profile have started accepting ATM as a channel for banking transactions, both internet and mobile banking is gaining popularity but considering the rapid penetration of mobile phones in India, the potential for delivering banking services through mobile phones is immense compared to internet as a delivery channel. However, it has been hounded by negative issues like identifying thefts and phishing attacks which are the reason why there are still some customers who are worried of using electronic channels for conducting banking transactions

Several initiatives taken by the government of India, as well as the Reserve Bank of India (RBI), have facilitated the development of E-banking in India. The government of India enacted the IT Act, 2000, which provides legal recognition to electronic transactions and other means of electronic commerce. The RBI has been preparing to upgrade itself as a regulator and supervisor of the technologically dominated financial system. It has issued guidelines on risks and control in computer and telecommunication system to all banks, advising them to evaluate the risks inherent in the systems and put in place adequate control mechanisms to address these risks. It covers various issues that fall within the framework of technology, security standards, and legal and regulatory issues. Banks are making sincere efforts to popularise the e-banking services and products. Younger generation is beginning to see the convenience and benefits of E-banking. In the years to come, E-banking will not only be an acceptable mode of banking but will also be the most preferred mode of banking.

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