International Journal of Management, IT & Engineering
Vol. 7 Issue 4, April 2017,
ISSN: 2249-0558
Impact Factor: 7.119Journal Homepage: http://www.ijmra.us, Email: editorijmie@gmail.com
Double-Blind Peer Reviewed Refereed Open Access International Journal - Included in the International Serial Directories Indexed & Listed at: Ulrich's Periodicals Directory ©, U.S.A., Open J-Gate as well as in Cabell's Directories of Publishing Opportunities, U.S.A

E-Banking in India

Deepak Kumar
Assistant Professor (Commerce)
Kamla Lohtia Sanatan Dharam College
Ludhiana (Punjab)

Abstract

With the advancement in technology in the Banking Sector, the banks are no longer restricted to traditional banking rather they have shifted to E-Banking. The banks are offering various E-Banking products and services for banking operations that aim at improving the quality of services to customers. The traditional banking required customers to visit bank branches for availing various banking services, however now ATM, Internet Banking, Mobile Banking, Debit Card and many other IT enabled services are replacing the traditional methods of banking at a rapid pace. Availability of E-Banking services as per the convenience of customers has also resulted in the increased demand for banking services. The objective of this study is to examine the range of E-banking products and services available in the country along with various factors responsible for the increased demand for such services. In addition, the study highlights issues and challenges being faced in the context of E-Banking services.

Keywords: E-banking, Information Technology, E-banking Products and Services

Introduction

The economic strength of any country depends upon the efficiency of its financial system and banks are one of the oldest financial intermediaries in the financial system of a country (Sukmana & Kassim 2010). The Banking sector is one of the important pillars of the financial system, which plays a vital role in the success or failure of an economy. It is the lifeline of any modern economy. Banking sector performs the three basic functions: efficient operation of the payment system, mobilization of deposits and allocation of deposits to investment products. Today, banks are working not only for profits but are also participating in the nation’s building activities to bring about a significant socio-economic change. Over the years, the banking system has multiplied its activities in terms of volume, variety and geographical coverage to meet the growing needs of the society (Honohan 1997). It has played an effective role in the mobilization of saving of the economy, enlargement of entrepreneurial base and a significant increase in the banking habits of the people of all nations. Keeping these facts in mind, India cannot be considered as a healthy economy, if a sound and effective banking system is not established.

In a true sense, the meaning of bank is not specified in any of the regulations or acts. From different walks of life, the word ‘Bank’ has attained different meaning, such as, for a normal salary person, the bank is a saving institution while for a businessman, bank is a financial institution etc. In contemporary world, banks are financial institutions that deal or operate in money. They are the money traders that accept deposits from general public and provide loans to firms, households and government. Banks are not merely the traders of money they also create credit (Friedman 1999). The purpose of the present study is to examine the range of E-banking products and services offered by different banks in India and to study the various factors responsible for the growth of E-Banking along with issues and challenges being faced in the context of E-Banking.

Role of IT in Banking Sector

Technological developments in the area of telecommunications and information technology have revolutionized the banking industry. These developments include: new delivery channels and banking systems including Telephone Banking, Personal Computer Banking, Automatic Teller Machine (ATM), Mobile Banking, Internet Banking, Debit Card, Credit Card, Mobile Banking etc. The increasing popularity and interest in using the Internet is driven by its World Wide Web (www) subset and it has created great opportunities for many organizations, from small businesses to large corporations, including financial institutions (Lallmahamood 2007; Chau and Lai 2003; Rashid and AI-Qirim 2001). In particular, banks and financial institutions that have implemented World Wide Web (www) delivery of their services have captured a large share of the financial market (Tan and Teo 2000). Banks operate in a strategic information system environment which indicates that they are information-intensive and highly dependent on information technology as their core technology (Broadbent and Weill, 1993). The developments in information technology have had an enormous effect on the development of more user-friendly banking service and in an increase in the transaction and communication speed between banks and customers (Akinci, Aksoy and Atilgan 2004; Giannakoudi 1999). Banking was probably the first major service industry that adopted new information technologies extensively dating back to some four decades. Today, it may be considered a sector having outstanding experience in the field of automation and IT (De Wit, 1990; Bauer and Colgan 2001). Since the early 1990s, each Indian bank has made efforts for IT improvement. The first and foremost compulsion for this is the fierce competition. IT constructs an alternative channel for banks by which customers can easily make transactions anywhere – anytime via internet and reduce the need for financial intermediaries (Liao and Cheung, 2003). The development of IT has influenced all aspects of banking activities. IT has opened up new horizons for banks and has moved them from local to global frontiers (Mavri and Ioannou 2006). Development of IT has been substituting the computers for paper-based and labour-intensive methods and has also made easy customer's deposits, withdrawals and many internal operations.

Electronic Banking

Electronic Banking is the method of banking through which the banks provide the services of electronic transactions to their customers via internet. E-banking is a product designed for the purpose of online banking that enables the customers to have easy and safe access to their bank account. E-banking is a fast, safe, efficient and easy electronic service that enables customers to access their bank account and to conduct online banking services, 24 hours a day and 7 days a week (Liao and Cheung, 2002). With these E-banking services, one can save the time by carrying out banking transactions at any place and at any time, from his home or office, with a click of a button. E-banking is also known by many other names like e-banking, web banking, virtual banking, or online banking. E-banking uses electronic and telecommunications network for delivery of many banking products and services. By using his computer or mobile phone, a customer can access his account and conduct many business transactions, through e-banking. The various services under e-banking includes funds transfer, payment of bills, opening of online bank accounts, debit and credit card services, demat services, investment services etc.

Various Types of E-Banking Products and Services

The term E-Banking can be described as the provision of information or services by a bank to its customers, by using an information technology, via a computer, telephone or mobile phone (Daniel, 1999; Karjaluoto et al., 2002). E-Banking is a global interconnected network of networks providing a free exchange of information. It involves the most pragmatic use of IT as a medium of universal communication. It has brought tremendous change in society and has an immense influence on every aspect of life. E-Banking can increase the number of clients and the number of banking transactions which can lead to improvement of banking efficiency. Prominent products and services under E-Banking are:

- **Debit Card**

  Debit Card is a plastic card which provides an alternate method of payment. Its functionality is more similar to writing a cheque as the funds are withdrawn directly from the cardholder's bank account. In some countries, the debit cards hold a multipurpose by acting both as ATM cards for withdrawing money and as a cheque guarantee card. Online debit cards require electronic authorization of every transaction and the debits are reflected in the user's account immediately. The transaction may be additionally secured with a PIN authentication system. Debit cards are issued to customers having sufficient amount in their account. When the transaction is made by a customer, the amount is directly debited to the bank account of the customer. The cardholder can make an immediate payment for the goods purchased or services availed. Debit card can be used at all outlets like petrol pumps, jewellery shops, textile shops, hospitals, airlines, railways etc. Debit card can also be used for online payments (Caskey and Sellon, 1994).

- **Credit Cards**

In the case of credit cards, the issuer lends money to the consumer to be paid to the merchant. Credit card enables the customer to purchase goods or services within prescribed limits from certain authorized retail establishment without making immediate payments. Credit card is a type of an overdraft facility. It is inscribed with name, signature and date of validity. The banks which issue these cards, tie-up with international organizations like Master, Visa, Maestro, Cirrus, Diners, American Express, Discover etc. Credit card began to be used in USA as early as 1920s. Diner's Club introduced their credit card in 1950, the American Express Company in 1958 and Bank of America in 1959. Credit card issuers usually waive interest charges if the balance is paid in full each month but typically will charge full interest on the entire outstanding balance from the date of each purchase if the total balance is not paid (Ausubel, 1991).

- **ATM Cards**

Automated teller machine (ATM) was first installed by Barclays Bank in the United Kingdom (UK) in 1967 (Introna and Whittaker 2005; Giannakoudi 1999). ATMs allow customers to deposit money, withdraw cash, request a balance, pay bills etc. at any time. ATM services not only provide convenience for customers but also decrease operating costs for the bank (Rose and Hudgins 2008). ATM provides cash accessibility and account information. By the end of 1990, public and private sector banks came up with their own networks of ATM. Bank of India was the first nationalized bank which provided facility of ATM to its customers in Mumbai. Nowadays, ATM can be installed onsite or off-site.

An automated teller machine is a computerized telecommunication device that provides the customer of a financial institution with access to financial transactions in a public space without the need for a human clerk or a bank teller. In modern ATM, the customer is identified by inserting a plastic card with a magnetic strip and a chip that contains a unique card number and security information. Most ATMs are connected to interbank networks enabling people to also withdraw and deposit money from machines. Today, customers are using ATM in place of bank transactions (Alagheband 2006). An ATM provides quick customer service with lesser cost and that too free from human errors etc.

- **Smart Cards**

A smart card or an integrated circuit card can be defined as any pocket-sized card with embedded integrated circuits which can process information. This implies that it can receive input which is processed by way of the ICC applications and delivered as an output. Smart card provides a means of effecting business transactions in a flexible, secure and standard way with minimal human intervention. It has the capacity to store customer's work-related information, personal information and can be periodically recharged. Mondex and visa cash cards are examples of smart card.

- **Mobile Banking**

Mobile Banking is the term used for performing balance checks, account transactions, payments, debit/credit card services, demat services etc. via a mobile device such as a mobile phone. Mobile banking is the extension of I-banking facility. Now the customers are no longer required to visit a bank to carry out different kinds of banking transactions since, they can use mobile banking facilities. Banks provide mobile banking services to their clients in three ways as listed below:

a.) **Mobile Banking over Wireless Application Protocol (WAP):** The customers can download the mobile application of the concerned bank on their smartphones and then use it to avail various services provided by the bank. They need to register for mobile banking separately and receive their login credentials to use mobile banking applications, simply known as mobile apps. The major mobile banking services are access accounts, balance enquiry, e-passbook, account statement, fund transfer, bill payment, demat services, investment services, debit/credit card services, branch locator etc.

b.) **Mobile Banking over SMS (also known as SMS Banking):** Most banks offer mobile banking services over SMS. The customers need to sign up for this service, known as SMS Banking, by registering their mobile number. Then, they can send SMS to the bank to inquire about their account balance, check the mini account statement, etc. The bank then replies with an SMS that contains the information requested by the customer. The customers do not need to own a smartphone or internet access to avail SMS banking services. Banks have a specific phone number registered and an SMS format that the customers need to follow to avail of this service.

c.) **Mobile Banking over Unstructured Supplementary Service Data (USSD):** Banks offer mobile banking over USSD service to people who do not own a smartphone or have access to the internet. They can simply use USSD codes provided by the banks to avail banking services. The customers dial a prefix code and click send. Then, they receive a menu containing the banking services such as balance enquiry, mini account statement, etc. that they can avail using their phone. This service is quite popular in rural areas where most people do not own smartphones and do not have access to the internet. The most common form of mobile banking is over WAP.

- **Telebanking**

Telephone banking was first introduced by Seattle First National Bank in the United States (US) in the late 1970s (Shapiro 1999). Telephone banking is more cost-effective than ordinary branch banking and the process increases customer convenience as well as expanding access to a wide variety of services for customers (Mols, Bukh and Nielsen 1999). However, telephone banking lacks visual verification (Giannakoudi 1999) and customers cannot perform self-banking activities by using telephone banking (Guru et al. 2001). The telebanking system enables banking transactions to be carried out by means of a telecommunication network. Under telebanking system, a customer is authorized to use the banks' special telephone numbers. This system accepts only tone dialed input or suitable voice response message (Kaptan and Choubey 2003).

- **Electronic Fund Transfer**

  In 1994, EFT system was introduced on the basis of the recommendation of the "Saraf Committee" appointed by RBI to cater to issues related to the use of technology. The scheme has been in operation since February 1996. EFT enables the customer to transfer money instantly from one bank account to another bank at any branch of any member bank in any other city (Jain 2006). Under this system, the sender and the receiver may be located in different cities. The distance is no longer a constraint in providing customer service.

- **Internet Banking**

  Internet banking enables the customer to do the banking transactions through bank's website on the internet. Through Internet banking one can access accounts and general information on bank products and services. It brings the bank to your computer. Internet Banking has introduced international standards and best practices (Mathur 2007). Internet banking usually offers the facilities like Bank statement, Electronic bill presentment and payment, transfer of funds, sale and purchase of investments, demat services, credit/debit card services, repayment of loans etc. Internet banking is defined as an internet portal through which the customers can use different kinds of banking services from bill payment to making investment (Pikkarainen et al. 2004).

- **NEFT**

  NEFT system was introduced by RBI. It was set up in 2005 as a major step in the direction of setting up and operating a national level payment system. It is a secured network which uses the structured financial messaging solution. NEFT brings efficiency in transfer of funds and reduces risk. NEFT is a country wide system by which an individual, firm or company can electronically transfer funds from one place to another place in a particular period of time.

- **RTGS**

RTGS is an electronic based settlement of interbank and customer-based transactions. RTGS system was introduced by RBI to enhance the efficiency of cheque clearing system. Under this system, the funds are transferred from one bank to another on "Real Time" and "Gross Basis". Settlement on "real time" basis means that there is no waiting period. "Gross basis" means that the transactions are settled on one to one basis. The minimum amount in RTGS is 2 lakhs and there is no upper limit.

- **IMPS**

The IMPS full form stands for Immediate Payment Service. This is an inter-bank electronic fund transfer system. It enables the customer to transfer funds from one account to another bank account. The beneficiary account is credited immediately when a fund transfer request is made from the side of the customer. IMPS is different from NEFT and RTGS as it is available 24/7 and 365 days regardless of bank holidays. IMPS started in 2012 is managed by NPCI (National Payments Corporation of India).

- **UPI**

UPI is Unified Payment Interface and just like your email id, this can be taken as your financial address. Similar to your bank account, this remains unique to every individual and will help you to transfer and receive funds instantly. Like IMPS, UPI is an instant real-time payment system developed by National Payments Corporation of India in 2016. UPI is a quick and easy way to send and receive money using a Virtual Payment Address (VPA) without entering additional bank information.

Factors responsible for the growth of E-Banking

These days e-banking practices in India have caught significantly faster pace, but still as compared to western countries, usage of E-banking is significantly low. In recent years, banks have attempted to create IT infrastructure to enhance the e-banking operations. Number of studies have been conducted highlighting the factors responsible for growth of E-banking. Various factors which are responsible for the growth of e-banking are as follows.

1. **Anytime-Anywhere Access:** Channel convenience is a factor which plays a crucial role in adoption of E-banking as it helps the customers to have easy access of E-banking services 24x7 and, thus, leads to time-saving. (Liao and Cheung, 2002).
2. **Enhanced Services:** E-banking provides enhanced services to customers. Banks regularly invest in new online products and interactive customer care mode is available to instantly solve queries. (Tan and Teo, 2000).
3. **Cost Efficiency:** Banks are delivering banking services through E-Banking at transaction costs far lower than traditional brick and mortar branches. (Gerlach, 2000; Jun and Cai, 2001).
4. **Promotion:** Extensive promotion and advertisements about e-banking helps in creating awareness among masses.
5. **Tech Savvy:** Nowadays customers, being tech savvy are able to perform E-Banking transactions quickly and safely.
6. **Security and Privacy:** Nowadays, banks are assuring their customers about security and privacy which boosts confidence of the customer to use E-Banking. Banks safely maintain the information of the customer without any kind of leakage. (Liao and Lin, 2008; Poon, 2008).
7. **Integrated Environment for E-banking Transactions:** With the advent of electronic banking, companies have an integrated environment in order to administer their accounts, to be informed about their loans and other liabilities, to pay their suppliers and employees, to pay their taxes and insurance fees and to perform a variety of business transactions (Angelakopoulos and Mihiotis, 2011).

Issues and Challenges of E-Banking

Despite having so many benefits of E-Banking and the numerous efforts by banks in this direction to make banking easy and convenient, there are many issues and challenges being faced in the context of E-banking. Some of those are discussed below:

1. **Threat of Security:** In spite of enhanced security and brimming cyber laws, customers refuse to adopt e-banking services because of security threats. E-Banking frauds like spyware, phishing, internet theft, spamming etc. are still very much persisting.
2. **Issue of Privacy:** Customers do feel the threat of loss of private information due to technical weakness.
3. **Lack of Knowledge:** Although banks are floating numerous promotion schemes and offer technical assistance, even then there is lack of knowledge regarding the use of E-Banking and lack of preparedness by customers and banks in technological adoption. (Nidhi, 2016).
4. **Lack of Infrastructure:** Insufficient infrastructure for the setting up of Electronic delivery networks is still a big problem. Even internet is a major constraint in many areas of India.
5. **Governance Issues:** The managements and governing bodies of banks are facing several challenges in adoption, management, information technology and security governance of E-banking (Tsiakis et al, 2011).
6. **No Face to Face Communication:** Somehow, customers do give more importance to face to face communications as communication through an internet might not be the best base for establishing bank and customer relations. (Clark and Mills, 1993).

Conclusion

The transition from the 'Brick and mortar' structure to 'click and order' model of the banking system started with the emergence of Information Technology. The recent developments in the area of IT have expanded the scope for offering quality products and services in the area of E-Banking. Incredible E-Banking services are playing a key role for achieving the dream of cashless society in India. All the banking transactions can now be processed swiftly and effortlessly using different modes of E-Banking. Updated and improved technology, round the clock access, reduced cost of services are the key factors for the growth of E-banking during the recent years. This shift has resulted in manifold increase in penetration of banking transactions. However still, in a country like India, E-banking services are supplementary to the existing branch banking system and not a total substitute for it. The banks are still striving hard to overcome the various issues and challenges in the area of security, privacy, governance and IT infrastructure to push the adoption of E-Banking products and services in times to come.

References

Akinci, S., Aksoy, Ş. & Atilgan, E. (2004). Adoption of Internet Banking among Sophisticated Consumer Segments in an Advanced Developing Country. *International Journal of Bank Marketing*, 22(3), 212-232.

Alagheband, P. (2006). *Adoption of Electronic Banking Services by Iranian customers* (Masters Dissertation), Lulea University of Technology, Sweden.

Angelakopoulos, G., & Mihiotis, A. (2011). E-banking: Challenges and Opportunities in the Greek Banking Sector. *Electronic Commerce Research*, 11(3), 297-319.

Ausubel, L. M. (1991). The Failure of Competition in the Credit Card Market. *The American Economic Review*, 50-81.

Bauer, C., & Colgan, J. (2001). Planning for Electronic Commerce Strategy: An Explanatory Study from the Financial Services Sector. *Logistics Information Management*, 14(1/2), 24-32.

Broadbent, M., & Weill, P. (1993). Improving Business and Information Strategy Alignment: Learning from the Banking Industry. *IBM Systems Journal*, 32(1), 162-179.

Caskey, J. P., & Sellon, G. H. (1994). Is the Debit Card Revolution Finally here? *Economic Review-Federal Reserve Bank of Kansas City*, 79, 79-79.

Chau, P. Y., & Lai, V. S. (2003). An Empirical Investigation of the Determinants of User Acceptance of Internet Banking. *Journal of Organizational Computing and Electronic Commerce*, 13(2), 123-145.

Clark, M. S., & Mills, J. (1993). The Difference Between Communal and Exchange Relationships: What it is and is not. *Personality and Social Psychology Bulletin*, 19(6), 684-691.

Daniel, E. (1999). Provision of Electronic Banking in the UK and the Republic of Ireland. *International Journal of Bank Marketing*, 17(2), 72-83.

De Wit, G. R. (1990). The Character of Technological Change and Employment in Banking: A Case Study of the Dutch Automated Clearing House (BGC). *New Explorations in the Economics of Technical Change*, *Pinter*, *London*.

Friedman, B. M. (1999). The future of Monetary Policy: The Central Bank as an Army with only a Signal Corps? *International Finance*, 2(3), 321-338.

Gerlach, D. (2000). Put Your Money Where your Mouse is. *PC World*, 18(3), 191-197.

Giannakoudi, S. (1999). Internet Banking: The Digital Voyage of Banking and Money in Cyberspace. *Information and Communications Technology Law*, 8(3), 205-243.

Guru, B. K., Vaithilingam, S., Ismail, N., & Prasad, R. (2001). Electronic Banking in Malaysia: A Note on Evolution of Services and Consumer Reactions. *Electronic Banking*, 135-147.

Honohan, P. (1997). Banking System Failures in Developing and Transition Countries: Diagnosis and Predictions. *BIS Working paper 39*, Bank for International Settlements.

Introna, L., and Whittaker, L. (2005). *Power, Cash and Convenience: The Political Space of the ATM. Working Paper No. 054.* The Department of Organization, Work and Technology, Lancaster University.

Jain, P. M. (2006). E.-payments and E-Banking. *Indian Banker*, 1(3), 108-113.

Jun, M., & Cai, S. (2001). The key determinants of Internet Banking Service Quality: A Content Analysis. *International Journal of Bank Marketing.* 19(7), 276-91.

Kaptan, S. S. & Chaubey, N.S. (2003). *Indian Banking in Electronic Era*. New Delhi: Sarup & Sons.

Karjaluoto, H., Mattila, M. & Pento, T. (2002). Factors Underlying Attitude Formation Towards Online Banking in Finland. *International Journal of Bank Marketing*, *20*(6), 261-272.

Lallmahamood, M. (2007). An Examination of Individual's Perceived Security and Privacy of the Internet in Malaysia and the Influence of this on their Intention to use E-Commerce: Using an Extension of the Technology Acceptance Model. *The Journal of Internet Banking and Commerce*, 12(3), 1-26.

Liao, Z. & Cheung, M. T. (2002). Internet-based E-banking and Consumer Attitudes: An Empirical Study. *Information & Management*, 39(4), 283-295.

Liao, Z. & Cheung, M. T. (2003). Challenges to Internet E-banking. *Communications of the ACM*, 46(12), 248-250.

Liao, J. and Lin, T. (2008). Effect of Consumer Characteristics on their Acceptance of Online Shopping; Comparisons Among different Product Types. *Computer in Human Behavior*, 24 (1), 48-65.

Mathur, S. K. (2007). Indian IT Industry: A Performance Analysis and a Model for Possible Adoption. *Munich Personal RePEc Archive*, 1-113.

Mavri, M., & Ioannou, G. (2006). Consumers' Perspectives on Online Banking Services. *International Journal of Consumer Studies*, 30(6), 552-560.

Mols, N. P., Nikolaj D. Bukh, P., & Flohr Nielsen, J. (1999). Distribution Channel Strategies in Danish Retail Banking. *International Journal of Retail & Distribution Management*, 27(1), 37-47.

Nidhi, K. (2016). E-Banking in India: Challenges and Opportunities. *International Journal of Science Technology and Management*, 5(8), 809-815.

Pikkarainen, T., Pikkarainen, K., Karjaluoto, H., & Pahnila, S. (2004). Consumer Acceptance of Online Banking: An Extension of the Technology Acceptance Model. *Internet research*, 14(3), 224-235.

Poon, W. C. (2008). Users' adoption of E-banking Services: The Malaysian Perspective. *Journal of Business & Industrial Marketing*, 23(1), 59-69.

Rashid, M. A., and AI-Qirim, N. A. (2001). E-Commerce technology adoption framework by New Zealand small to medium size enterprises. *Research Letters Information Mathematical Science*, 2(1), 63-70.

Rose, P. S., & Hudgins, S. C. (2008). *Bank Management & Financial Services*. McGraw-Hill Education.

Shapiro, J. (1999). Innovation in Financial Services Case Study: Home banking. *Massachusetts Institute of Technology*. MIT IPC Working Paper, 99-004.

Sukmana, R., & Kassim, S. H. (2010). Roles of the Islamic Banks in the Monetary Transmission Process in Malaysia. *International Journal of Islamic and Middle Eastern Finance and Management*, *3*(1), 7-19.

Tan, M., & Teo, T. S. (2000). Factors Influencing the Adoption of Internet Banking. *Journal of the Association for Information Systems*, 1(1), 5.

Tsiakis, T., Chatzipoulidis, A., Kargidis, T., & Belidis, A. (2011). Information Technology Security Governance Approach Comparison in E-banking. *International Conference on Security Technology*, (pp. 75-84). Berlin, Heidelberg: Springer.