ORIGINAL RESEARCH PAPER

Information Technology

TECHNOLOGICAL DEVELOPMENTS IN INDIAN BANKING SYSTEM

KEY WORDS: Banking, internet banking, Reserve bank, structure

Dr. Sarang R. Javkhedkar — Assistant Professor Dr. Ambedkar Institute of Management Studies and Research, Deekshabhoomi, Nagpur – 440010

Dr. Anjali D. Shrungarkar* — Assistant Professor City Premier College Samarth Nagar Nagpur - 440023 *Corresponding Author

ABSTRACT

A bank is generally understood as an institution which provides fundamental banking services such as accepting deposits and providing loans. The banking sector plays a vital role in the development of one country's economy. The growth of banking sector depends upon the services provided by them to the customers in various aspects. The banking system in India should not only be hassle free but it should be able to meet the new challenges posed by the technology and any other external and internal factors. Banking services in India is found significant after the new economic reforms by using advancement in technology. A well-regulated banking system is a key comfort for local and foreign stake-holders in any country. Prudent banking regulation is recognized as one of the reasons why India was less affected by the global financial crisis. Banks can be broadly categorized as Commercial Banks or Co-operative Banks. Banks which meet specific criteria are included in the second schedule of the RBI Act, 1934. These are called scheduled banks. They may be commercial banks or cooperative banks. Scheduled banks are considered to be safer, and are entitled to special facilities like re-finance from RBI. Inclusion in the schedule also comes with its responsibilities of reporting to RBI and maintaining a percentage of its demand and time liabilities as Cash Reserve Ratio (CRR) with RBI.

1. INTRODUCTION

The core issues faced by banks today are on the fronts of customer's service expectations, cutting operational costs, and managing competition. Technology can help banks in meeting these objectives. Information Technology is central to banking. It has moved from being just a business enabler to being a business driver. In a manner the banking and financial services sector—being the early adopters of any new technology—defines the roadmap for future technology adoption. The Banking sector has been immensely benefited from the implementation of superior technology during the recent past, almost in every nation in the world. 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. India's banking sector has made rapid strides in reforming itself to the new competitive business environment. Indian banking industry is the midst of an IT revolution. Technological infrastructure has become an indispensable part of the reforms process in the banking system, with the gradual development of sophisticated instruments and innovations in market practices.

1.1. INDIAN BANKING SYSTEM

Indian banking industry has been divided into two parts, organized and unorganized sectors. The organized sector consists of Reserve Bank of India, Commercial Banks and Co-operative Banks, and Specialized Financial Institutions (IDBI, ICICI, IFC etc). The unorganized sector, which is not homogeneous, is largely made up of money lenders and indigenous bankers.

An outline of the Indian Banking structure may be presented as follows:-

- Reserve banks of India.
- Indian Scheduled Commercial Banks.
- State Bank of India and its associate banks.
- Twenty nationalized banks.
- Regional rural banks.
- Other scheduled commercial banks.
- Foreign Banks
- Non-scheduled banks.
- Co-operative banks.

Banks which meet specific criteria are included in the second schedule of the RBI Act, 1934. They may be commercial banks or co-operative banks. Scheduled banks are considered to be safer, and are entitled to special facilities like re-finance from RBI. Inclusion in the schedule also comes with its responsibilities of reporting to RBI and maintaining a percentage of its demand and time liabilities as Cash Reserve Ratio (CRR) with RBI.

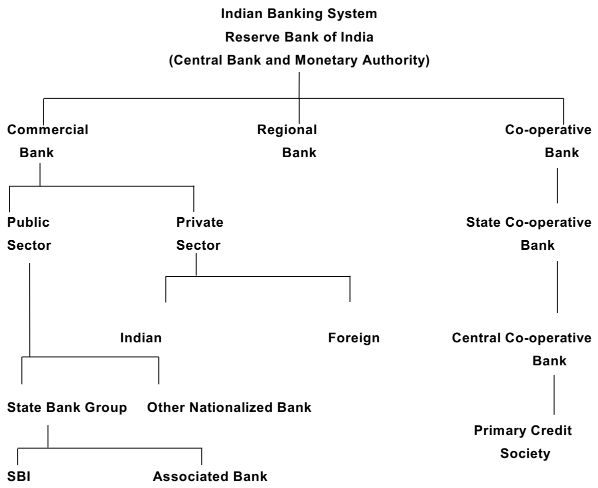

FIGURE - 1 - STRUCTURE OF INDIAN BANKING SYSTEM

1.Objectives of the Study

- To present the technological developments in Indian banking sector
- To examine recent trends and developments in banking sector

2.The Reserve Bank of India

The RBI is the supreme monetary and banking authority in the country and has the responsibility to control the banking system in the country. It keeps the reserves of all scheduled banks and hence is known as the "Reserve Bank".

2.1.Public Sector Banks:

- State Bank of India and its Associates (8)
- Nationalized Banks (19)
- Regional Rural Banks Sponsored by Public Sector Banks (196)

2.2.Private Sector Banks:

- Old Generation Private Banks (22)
- Foreign New Generation Private Banks (8)
- Banks in India (40)

2.3.Co-operative Sector Banks:
- State Co-operative Banks
- Central Co-operative Banks
- Primary Agricultural Credit Societies
- Land Development Banks
- State Land Development Banks

2.4.Commercial banks:
Commercial banks comprising public sector banks, foreign banks, and private sector banks represent the most important financial intermediary in the Indian financial system. The changes in banking structure and control have resulted due to wider geographical spread and deeper penetration of rural areas, higher mobilization of deposits, reallocation of bank credit to priority activities, and lower operational autonomy for a bank management. Public sector commercial banks, dominate the commercial banking scene in the country. The largest commercial Banks in India is SBI.

2.5.Cooperative Bank:
These banks play a vital role in mobilizing savings and stimulating agricultural investment. Co-operative credit institutions account for the second largest proportion of 44.6% of total institutional credit. The co-operative sector is very much useful for rural people. The co-operative banking sector is divided into the following categories.
- State co-operative Banks
- Central co-operative banks
- Primary Agriculture Credit Societies

2.6.Development Banks:
A development bank: may be defined as a financial institution concerned with providing all types of financial assistance to business units in the form of loans, underwriting, investment and guarantee operations and promotional activities-economic development in general and industrial development in particular. A development bank: is basically a term lending institution. It is a multipurpose financial institution with a broad development outlook.

Development Banks mostly provide long term finance for setting up industries. They also provide short-term finance (for export and import activities) –

- Industrial Finance Co-operation of India (IFCI)
- Industrial Development of India (IDBI)
- Industrial Investment Bank of India (IIBI)
- Small Industries Development Bank of India (SIDBI)
- National Bank for Agriculture and Rural Development (NABARD)
- Export-Import Bank of India

3.The Role of Reserve Bank of India - Banker's Bank
The Reserve Bank of India (RBI) is the central bank of India, and was established on April 1, 1935 in accordance with the provisions of the Reserve Bank of India Act, 1934. Since its inception, it has been headquartered in Mumbai. Though originally privately owned, RBI has been fully owned by the Government of India since nationalization in 1949. RBI is governed by a central board (headed by a Governor) appointed by the Central Government.RBI has 22 regional offices across India. The Reserve Bank of India was set up on the recommendations of the Hilton Young Commission.

4.Technologies and Technological Tools used in Banking Sector
The advancement in technology, especially internet and information technology has led to new ways of doing business in banking. These technologies have cut down time, working simultaneously on different issues and increasing efficiency. The platform where communication technology and information technology are merged to suit current needs of banking service solutions. Here, computer software is developed to perform core operations of banking like recording of transactions, passbook maintenance, and interest calculations on loans and deposits, customer records, balance of payments and withdrawal. This software is installed at different branches of bank and then interconnected by means of communication lines like telephones, satellite, internet etc. It allows the user (customers) to operate account from any branch if it has installed core banking solutions. This new platform has changed the way banks are working. General banking functions will include deposit accounts, loans, mortgages and payments. Banks make these services available across multiple channels like ATMs, Internet banking, and branches through technological development.

4.1.Credit Card:
Credit Card is "post paid" or "pay later" card that draws from a credit line-money made available by the card issuer (bank) and gives one a grace period to pay. If the amount is not paid full by the end of the period, one is charged interest

4.2.Debit Cards:
Debit Card is a "prepaid" or "pay now" card with some stored value. Debit Cards quickly debit or subtract money from one's savings account, or if one were taking out cash. Every time a person uses the card, the merchant who in turn can get the money transferred to his account from the bank of the buyers, by debiting an exact amount of purchase from the card. To get a debit card along with a Personal Identification Number (PIN).

4.3.Automatic Teller Machine:
The ATM's are used by banks for making the customers dealing easier. ATM card is a device that allows customer who has an ATM card to perform routine banking transaction at any time without interacting with human teller. It provides exchange services. This service helps the customer to withdraw money even when the banks are closed. This can be done by inserting the card in the ATM and entering the Personal Identification Number and secret Password. It allows the customers
- To transfer money to and from accounts.
- To view account information.
- To order cash.
- To receive cash.

4.4.Direct Banking:
A direct bank is a bank without any branch network. It offers its financial services by: * Telephone banking * Online banking * Automated teller machines (often through interbank network alliances) * Mail banking * Mobile banking etc. The ability to transact banking accurately and in the privacy of the use any time of the day has made direct banking an attractive alternative to visiting local financial institutions.

4.5.Online Banking:
Within the change in the time the rise of the new internet era has contributed a lot in the life style of the people living on the earth. Internet is bringing so much changing in peoples life that they can get whatever they think by sitting at home and without making any efforts. This is the benefit of using internet. As we can see everything from home accessories to beauty products, brands, services, consultants, gaming to online selling are done through internet. You only need to type the key word which you require and get the results at glance. Same is the case with banking.

4.6.Internet Banking:
Financial services accessed via the Internet's World Wide Web. An Internet bank exists only on the Internet, the global network of computer networks without any "brick and mortar" branch offices. By eliminating the overhead expenses of conventional banks, Internet banks theoretically can pay consumers higher interest rates on savings than the national average.

4.7.Electronic Funds Transfer (EFT):
The system called electronic fund transfer (EFT) 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.

4.8.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. Tele-banking is extensively user friendly and effective in nature.

4.9.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. The potential of mobile banking is limitless and is expected to be a big success. 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.

4.10.E-Banking:
E-banking refers to electronic banking. It is like e-business in banking industry. E-banking is also called as "Virtual Banking" or "Online Banking". E-banking is a result of the growing expectations of bank's customers. E-banking involves information technology based banking. Under this I.T system, the banking services are delivered by way of a Computer-Controlled System. This system does involve direct interface with the customers. The customers do not have to visit the bank's premises. Interactive Voice Response (IVR) is a software application that accepts a combination of voice telephone input and touch-tone keypad selection and provides appropriate responses in the form of voice

4.11.Wireless Banking:
Wireless banking comes under e-banking. Wireless application protocol (WAP) is an application environment and set of communication protocols for wireless devices designed to enable manufacturer, vendor, and technology-independent access to the Internet and advanced telephony services. WAP is a global standard and is not controlled by any single company. Various banking transactions offered in WAP environment by banks. It has similar architecture like SMS banking.

4.12.Mobile banking
(also known as M-Banking, m-banking, SMS Banking) is a term used for performing balance checks, account transactions, payments, credit applications and other banking transactions through a mobile device such as a mobile phone or Personal Digital Assistant (PDA).

4.13.Phone banking
also known as tele-banking, has brought revolution in the banking industry.It is another electronic banking channel, which enables 24 hour banking for the customers. In addition, the customer can access the banking services from home or office or business place. As a 24-hour Customer Contact Center offer service round the clock. Just pick up the phone and call. Whether it is something as urgent as a stop payment or you simply want to know your balance just give us a call. Our toll free number gives you access to your account, from anywhere... anytime. And what's more, this facility comes to you absolutely free of cost.

4.14.Inter-Switch Banking:
Inter-Switch Banking – Inter-switch, an electronic payment transaction and switching firm, has implemented a card-less ATM cash deposit solution. It is real time system with immediate effects of deposited amount shown in your account. Technology integration helps clients realize the business value from information technology and use this as an enabler for organizational success. Inter-switch can work with clients to provide appropriate technology and ensure the resulting solution delivers the requisite benefits.

4.15.Branchless Banking:
Branchless Banking (BB) represents a significantly cheaper alternative to conventional branch-based banking that allows financial institutions and other commercial actors to offer financial services outside traditional bank premises by using delivery channels like retail agents, mobile phones etc. BB can be used to substantially increase the financial services outreach to the un-banked communities. These guidelines are being issued as part of the broader strategy to create an enabling regulatory environment to promote branchless banking. The primary audience of these guidelines is deposit-taking financial institutions (bank and non-bank) desirous to undertake branchless banking. However, as financial institutions cannot take on BB without the help of other market players like telecom companies, technology service providers, agents etc., these guidelines are also helpful for other parties to understand their roles and responsibilities.

4.16.National Electronic Funds Transfer (NEFT):
National Electronic Funds Transfer (NEFT) is a nation-wide system that facilitates individuals, firms and corporate to electronically transfer funds from any bank branch to any individual, firm or corporate having an account with any other bank branch in the country.

- In order to issue the instruction, the transferor should know not only the beneficiary's bank account number but also the IFSC (Indian Financial System Code) of the concerned bank.
- IFSC is an alpha-numeric code that uniquely identifies a bank-branch participating in the NEFT system. This is a 11 digit code with the first 4 alpha characters representing the bank, and the last 6 numeric characters representing the branch. The 5th character is 0 (zero). IPSC is used by the NEFT system to route the messages to the destination banks / branches
- Real Time Gross Settlement (RTGS): 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 Rs. 1lakhs. The RBI window is open on weekdays from 9 am to 4.30 pm; on Saturdays from 9 am to 12.30 pm

5.Role of Information Technology (IT) In Banking Sector

- Banking environment has become highly competitive today. To be able to survive and grow in the changing market environment banks are going for the latest technologies, which is being perceived as an 'enabling resource' that can help in developing learner and more flexible structure that can respond quickly to the dynamics of a fast changing market scenario.
- It is also viewed as an instrument of cost reduction and effective communication with people and institutions associated with the banking business.
- Information Technology enables sophisticated product development, better market infrastructure, implementation of reliable techniques for control of risks and helps the financial intermediaries to reach geographically distant and diversified markets.

5.1.Benefits of Technologies used by banking sector in India:
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 also.

5.1.1.Benefits of Technologies

- Anywhere Banking no matter wherever the customer is in the world. Balance enquiry, request for services, issuing instructions etc., from anywhere in the world is possible.
- Managing funds in real time and most importantly, 24 hours a day, 7 days a week, as Anytime Banking.
- Convenience acts as a tremendous psychological benefit all the time.
- Brings down "Cost of Banking" to the customer over a period a period of time.
- Cash withdrawal from any branch / ATM.
- On-line purchase of goods and services including online payment for the same.
- Innovative, scheme, addresses competition and present the bank as technology driven in the banking sector market.
- Reduces customer visits to the branch and thereby human intervention

- Inter-branch reconciliation is immediate thereby reducing chances of fraud and misappropriation.
- On-line banking is an effective medium of promotion of various schemes of the bank, a marketing tool indeed.
- Integrated customer data paves way for individualized and customized services.

CONCLUSION

The main focus of all the banks in world is to provide quick and efficient services to their customers by reducing transaction cost and time which is beneficial for customer as well as bank. The banking today is re-defined and re-engineered with the use of Information Technology and it is sure that the future of banking will offer more sophisticated services to the customers with the continuous product and process innovations. Thus, there is a paradigm shift from the seller's market to buyer's market in the industry and finally it affected at the bankers level to change their approach from "conventional banking to convenience banking" and "mass banking to class banking". The shift has also increased the degree of accessibility of a common man.

REFERENCES

Books-

1. B.P.Gupta, V.K.Vashistha, H.R.Swami, Banking and Finance, [Ramesh Book Depot, Jaipur-New Delhi (2012).]
2. S.B. Verma ; E- Banking and Development of Banks, [Deep & Deep Publications, New Delhi ,2014]

Web Sites –

3. www.rbi.org.in
4. http://www.moneycontrol.com/news/press-release/reporttrendprogressbankingindia-2010-11_617218.html
5. http://www.mbaknol.com/business-finance/recent-trends-in-indian-banking-sector/
6. http://www.articlesbase.com/information-technology-articles/it-emergence-recent-trends-in-banking-industry-of-india-1981838.html
7. B.P.Gupta, V.K.Vashistha, H.R.Swami, Banking and Finance, [Ramesh Book Depot, Jaipur-New Delhi (2012).]
8. S.B. Verma ; E- Banking and Development of Banks, [Deep & Deep Publications, New Delhi ,2014]
9. www.rbi.org.in
10. http://www.moneycontrol.com/news/press-release/ reporttrendprogressbankingindia-2010-11_617218.html
11. http://www.mbaknol.com/business-finance/recent-trends-in-indian-banking-sector/
12. http://www.articlesbase.com/information-technology-articles/it-emergence-recent-trends-in-banking-industry-of-india-1981838.html