



A CRITICAL STUDY ABOUT THE IMPLEMENTATION OF COMPUTERIZATION IN BANKING SECTOR

Satish Kumar G*, Dr. Devesh Kumar

*Research Scholar, Dept. of Commerce, Himalayan Garhwal University, Uttarakhand (India)
Associate Professor, Dept. of Commerce, Himalayan Garhwal, University, Uttarakhand (India)

ABSTRACT

One of the big steps in enhancing the effectiveness of banking services has been computerization and the introduction of core banking solutions. After liberalization, the new private sector banks and most of the international banks began operations in the mid-nineties, and they were the leaders in embracing technology. Because of historical documents and procedures, embracing technology was a laborious and daunting process for the public sector and the old private sector banks. It is important to note, however that nearly 98 per cent of public sector bank branches are currently completely computerized and nearly 90 per cent of branches are on a core banking network. RBI has released detailed guidelines on mobile banking and prepaid (stored value cards, keeping in touch with international practices and considering the distribution in India of mobile telephony. Systemically relevant payment and settlement systems have also been set up by the RBI, such as the Real Time Gross Settlement System (RTGS) and other retail payment systems, such as the Electronic Clearing Systems (Credit and Debit Clearing), the National Electronic Funds Transfer System (NEFT), the National Electronic Clearing System (NECS), the Regional Electronic Clearing System (RECS), which have changed the way of transferring. At the centre of their respective systems, all of these have protection and safety.

Keywords:

*Internet banking,
Computerization, Banks,
mobile banking.*



INTRODUCTION

The term banking is characterized as 'acceptance, for lending or investment purposes, of public deposits of money, payable on request or otherwise and withdrawal by cheque, draught, order or otherwise.' [Section 5(b), Banking Regulation Act, 1949.] This definition's key characteristics are as follows:

1. A banking business must serve both the basic roles of a) receiving deposits and (b) lending or investing in deposits. If the aim of the deposit is not to lend or invest, the firm would not be considered a banking company.
2. The phrase public money deposit is relevant. The bank considers money as a deposit and not much else.
3. The banker does not, of his own accord, refund the money. On demand made by the latter or according to the agreement reached between the two parties, the deposited money should be repayable to the depositor.

Indian Banking Structure

There is an apex bank in each nation that regulates and monitors the operations of commercial banks. In India, the central bank is the Reserve Bank, which plays a very important role in directing commercial banks' operations. The banking sector and the day-to-day work of banks are influenced by these guidelines. This directly or indirectly affects the system for protecting banks from fraud. Under the Ministry of Finance of the Government of India, the Reserve Bank of India operates.

It is possible to classify the planned banks in India into two broad categories. There are commercial banks on time and cooperative banks on schedule.

Depending on the ownership and control of the board, commercial banks in India fall into several sub-categories. Public sector banks are the first group, and they are further divided into three sub-categories:



- The State Bank of India and its 6 affiliated banks are SBI & its associates.
- Nationalized banks are the second group.
- The third are other banks in the public sector that only include IDBI Bank.

The three above are collectively referred to as Public Sector Banks, which have reached their current role in India in three phases: first the conversion of the then existing Imperial Bank of India into the State Bank of India in 1955, followed by the formation of its seven subsidiary banks; later, one was merged and six still function independently. The State Bank of India was established under the State Bank of India Act, 1955, the State Bank of India (Subsidiary Banks) Act, 1959 Second, on July 19, 1969, the nationalization of major commercial banks and last on April 15, 1980, the nationalization of 6 more. The New Bank of India, one of them was later merged with the Punjab National Bank. Thus, in Indian commercial banking, 26 banks form the public sector. Nationalized banks were formed under the 1970 & 1980 Acts on Banking Companies (Acquisition and Transfer of Businesses).

Private banks belong to the second group. These are divided into two categories: first, private sector banks, which existed before the guidelines for the establishment of new private sector banks were published in 1993, are referred to as old private sector banks, 13 in total, and second, 7 in number, belong to new private sector banks. In January, 1993, the Reserve Bank of India released guidelines for setting up private sector banks in India. The goal of these guidelines is to ensure that new banks from the outset are financially viable and technologically up to date. They are regulated by the provisions of the 1949 Reserve Bank of India Act and the 1949 Banking Regulation Act and comply with the guidelines provided by the Indian Reserve Bank. Foreign banks approved by the Government of India and RBI to set up branches in the country are the third group.

Regional Rural Banks, added to the Indian banking scene since October 1975, are the fourth group. In the various states of India, 196 regional rural banks with a network of branches operate. In accordance with the provisions of the Regional Rural Banks Act, 1976, these banks were established by the government of India. The central government shall define the local limits under which it operates when setting up rural banks at the request of commercial banks.



Under the Co-operative Societies Acts of various States, cooperative banks have been created. There are two tier-based cooperative banks: the urban cooperative bank and the rural cooperative bank. Two types of rural cooperative banks are long-term and short-term rural cooperative banks. The short-term rural cooperative bank is the state's apex organization, while the district-level central/district cooperative bank operates and the village-level primary societies operate. Only some provisions of the Banking Regulation Act apply to cooperative banks, with the consequence that the Reserve Bank of India has partial power over co-operating banks.

History of Computerization of Indian Banks and Role of RBI

Computerization became widespread right from the end of the sixties in the Western world. Main Frame computers have been used widely by public sector establishments and large private sector organizations. Mini Computers became popular in the late seventies and then personal computers in early eighties, this was then followed by the introduction of many software's developed in high level languages and concurrent advancement in networking technology. This has encouraged the widespread use of personal computers in offices and commercial organizations to process various forms of data and information. In our country, the Organized Labor Unions did not support the installation of computers in public sector offices; computerization was therefore limited to key science research organizations, technical institutes and defence agencies. The first public sector organization to embrace computerization for operational efficiency was Indian Railways. In 1967, with the goals of R&D in the fields of electronic communication, control, instrumentation, automation and information technology, The Electronics Corporation of India Ltd. was set up. Later in 1976, CMC Ltd (Computer Maintenance Corporation of India Ltd.) was set up to take care of Main Frame Computers maintenance operations installed in several organizations in India to serve the void created by IBM leaving India as a result of the then Central Government Directive. TCS (Tata Consultancy Services), which began operating in 1968, was the first major private sector venture in this field. Subsequently, a few IIT Delhi batch-mates led the way in 1980 to launch a major IT education centre in India to provide information technology training and their efforts culminated in the establishment of NIIT in 1981. In 1986, Aptech Computer Education was set up following NIIT's successful experiment.



Before computerization of significant magnitude took place and the subject became popular among academically brilliant students, they began to pursue graduate and post-graduate courses in computer engineering, which were initiated by many engineering and technical institutes. This led to computer education becoming popular in India. Indian students were drawn to the booming hardware and software industry in the west, which led to the migration of many brilliant young minds for better opportunities to

Today, India is a major force in this field and it possesses numerous talents in the field of software development, but at the same time, we are still back a decade to the extensive use of computerized services in the country and to bring the facility to the realms of the common man.

In 1987, under T, a committee on 5 "Communication Network for Banks and SWIFT Implementation" was created. N. A. Iyer, Executive Director, Reserve Bank of India and the committee made the following recommendations:

1. Setting up the 'BANKNET' X.25 based packet switching network to be jointly operated by the Reserve Bank and the banks of the public sector. It proposed that the four IBM Mainframes' computer system capabilities (installed at four metres for cheque processing operations) could be used by BANKNET for data communication with additional equipment during the daytime.

2. The implementation of BANKNET will take place in two stages. The computer systems available at the Public Sector Banks Head Offices in the four metropolitan cities in Phase I will be linked to the four IBM Mainframe servers. In the second step, connectivity could be progressively expanded over a three-year period to eight to ten banking-intensive centres and to a hundred centres.

The listed applications were:

- Transfers of inter-bank funds to banks' own and consumer accounts;
- Transfers of inter-branch funds to banks' own and consumer accounts; Chest money transactions;
- purchases by the government;
- Enhancements to payment processes via the facilitation of automatic clearing
- Any branch banking services, etc.



3. In order to send and receive foreign financial messages, India should join the SWIFT (Society for Worldwide Interbank Financial Telecommunication) network.

4. BANKNET should aim to imitate SWIFT in data protection, encryption, and authentication matters, and globally agreed SWIFT message standards should be implemented by BANKNET.

The recommendations for international interconnectivity of computers and cross-border transactions were then adopted by Shri T. N. A. Iyer, Executive Director, Reserve Bank of India Committee on Communication Networks for Banks and SWIFT implementations; branches were linked to the Society for Worldwide Interbank Financial Telecommunication (popularly known as S.W.I.F.T). The Local Area Network of branches was developed using internal captive networks with branch locations, while the RBINET had major branches.

SCOPE OF RESEARCH

Since all banks follow the RBI standards and bank computerization is carried out from time to time in compliance with the recommendations of the committees appointed by the Central Bank, their computerization policy in the branches of a particular bank is therefore the same everywhere.

RESEARCH METHODOLOGY

It is the instrument used by the investigator for the proper conduct and presentation of research results and the achievement of research goals. The researchers studied the banking system in India for a thorough and comprehensive evaluation of the computerization of banks in India.

RESULTS AND DISCUSSION

Information Communication

In order to understand the effect of communication technology on financial services, the foundation of communication technology needs to be understood. The Local Area Network, the Wide Area Network and Satellite Technology had a significant impact on the financial services sector, especially commercial banks. As is the case within a single Integrated Circuit chip, the distance through which



data travels within a device can range from a few thousandths of an inch to as much as several feet along the back panel of the main circuit board. Digital data can be distributed over such small distances, as direct, over simple copper conductors. However, data also has to be transmitted to very long distances outside the local circuitry, as a result of which accurate transmission becomes increasingly difficult between the source of a message and the increase in its destination. The exchange of data between two devices through some type of transmission medium is Data Communications. Communicating devices must be part of a network system consisting of a mixture of hardware and software in order for data communication to occur. The performance of a data communication system relies on four main features: distribution, precision, timeliness and jitter. There are five components of a data communication system: Message (Data / Information in various types, such as text, numbers, images, audio and video), Sender, Receiver, Medium of Transmission and Protocol (set of rules that govern data communications).

Internet Connectivity

There are mainly two ways of connection methods:

- **Off-Line (Dial-up) Connectivity:** To establish connection, you must first find an Internet Service Provider (ISP) that has an Internet server and offers SLIP / PPP account. Get telephone number and account from the service provider, then you can run windows-based Internet programs on your stand-alone PC. Requirements for dial-up connection are: Hardware: PC, Telephone Connection and High-Speed Modem

Software: Net browser with TCP/IP Others: An account on an Internet server

- **On-Line Connectivity:** On-line connection provides dedicated Internet access that requires substantial initial investment in equipment. The main continuing cost is a flat annual fee for the use of the line; the annual fee varies from the line capacity. The line capacity is the factor that determines how many users can connect simultaneously.



• **On-Line Connection Through Leased Line:** This is terrestrial link through PSTN of DoT in India. In this, the user's system gets connected to an Internet server by a dedicated telephone line. The leased line data circuits are available for different data transmission speeds viz.,

19.2 Kbps to 20 Mbps etc. Requirements for leased line connection are: Hardware: PC, leased line and Modem

Software: Net browser with TCP/IP

Others: IP address, an account with service provider and a Router

• **On-Line Connection Through VSAT:** This is a wireless connection. In this user's computer system is connected to VSAT (very Small Aperture Terminal). VSAT communicates to the destination via a Satellite. The data transfer speed of the communication link is based on the capacity of the communication channel allocated to the individual user site by the Master Control Station. Requirements of VSAT connection are:

Hardware: PC, VSAT and PES (Personnel Earth Station) Software: Net browser with TCP/IP

Others: IP address, an account with service provider and a Router

Intranet: An intranet is a private computer network that uses technologies such as Internet Protocol (TCP/IP), networking (IP network), HTTP (web services), SMTP (e-mail), and FTP (file transfer) to safely share some part of the information of an organization within that organization. There is no technological distinction between the Internet and the intranet, except that access to the intranet is not permitted by all. It is a closed network implementation of Internet technology, or literally, a private Internet extension restricted to an entity. It offers a reasonably cost-effective way for organizational networks and distributed data to be connected and controlled. It can host several private websites and is an important part of internal communication and collaboration and a focal point.

Extranet: Although intranets are usually limited to the organization's employees, clients, vendors, or other approved parties may also access extranets. Extranets extend a private network to the Internet with specific access, authorization and authentication requirements (AAA protocol).



Benefits of Intranet and Extranet:

The benefits are as given below: -

- **Workforce Productivity:** Users of intranets can access data stored in any database that the organization wishes to make accessible, at any time and from anywhere inside the company workstations, subject to security provisions, improving the capacity of employees to perform their jobs quicker, more efficiently, and with trust that they have the right information. It also aims to enhance the services that consumers get.
- **Time:** Intranets enable organizations to distribute data to staff as and when necessary.
- **Communication:** Vertically and horizontally, intranets may act as important communication instruments within an organization. Intranets are useful for communicating strategic projects that within the enterprise have a global scope. Employees have the ability to stay up to date with the organization's strategic focus by presenting this information on the intranet. You can communicate through chat, email, and/or blogs.
- **Web Publishing:** allows for the preservation and convenient access to cumbersome organizational information personnel guides, benefit records, company rules, business practices, and newsfeeds within the company using web technologies.
- **Business Operations and Management:** Intranets are also used as a forum for the creation and implementation of software within the internet-connected organization to facilitate business operations and decisions.
- **Cost-Effective:** Instead of maintaining physical documents such as procedure guides, internal phone list and requirement forms, users may access information and data through a web browser. This will potentially save the company cash on printing and duplicating papers.
- **Improve collaboration:** All approved users can access information quickly, which allows teamwork.



- **Cross-Platform Capability:** For Windows, Mac and UNIX, standard-compliant web browsers are open.
- **Promote A Shared Corporate Culture:** inside the intranet, each user has the right to access the same information.
- **Immediate Updates:** The rules, requirements, and criteria will change when working with the public in any capacity. Intranets make it possible to provide "live changes to the audience so that they are kept up to date, which may limit the liability of an organization.
- **Supports A Distributed Computing Architecture:** The intranet can also be connected, such as a time keeping system, to the management information system of a corporation.

Intranet Application: The main feature of the business application of the intranet is the ease of incorporation of processes. For example, a bank have installed an elaborate integrated information systems on the intranet and they are performing the usual accounting job, maintaining the consumer database and incorporating credit card, loans etc from the same web application.

CONCLUSION

The Indian banking industry is in a transformative process. Due to a combination of competitive and regulatory factors, significance has been given to complete automation in the banking industry in India. There have been immense changes in the banking scenario in India and banks are facing vigorous competition in the post-liberalization climate. Fifteen years ago, the banking that is prevalent today could not be conceived and information technology became the foundation of all banking activities. With the assistance of information technology, new and creative products and services are coming out of the banks. Due to complete automation of banking transactions, uninterrupted service is assured to customers 24x7 days. With the help of plastic cards, bank customers can now enjoy the convenience of carrying out their financial transactions and accessing their bank accounts and transactions from their appropriate locations through telephones, cell phones



and the Internet.

The banking industry is service-oriented, previously the banking services merely accepted deposits and lent advances to the poor along with some ancillary services and the major portion of the profit used to come from the difference between the interest rate deposits and advances. But the spread between the two is substantially reduced in the deregulated and competitive climate, as the bank needs profit to increase the value of all stakeholders at the same time; hence the banks now rely on non-interest income from their ancillary services, which are primarily IT-dependent. The banks have now updated their technology platform to meet Global Banking Technology, which is increasingly changing the banking industry and growing its ability to access the unbanked in order to provide enhanced and rapid customer service.

Furthermore, facilities such as Anywhere and Anytime Banking, the proliferation of services provided by ATM networks, IT allowing instant bank remittances, customer payments, mobile payments, etc., have made banking almost ubiquitous. In relation to computerization in banks, a range of suggestions have been put forward in the related chapters. Many of them are fundamental and relevant and, along with some other key recommendations, are outlined below with broad policy implications.

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