Changing face of Indian Banking Sector through Information and Communication Technology: A critical Review

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Introduction

Information and communication technology has changed the contours of three major functions performed by banks, i.e., access to liquidity, transformation of assets and monitoring of risks. Information technology and the communication networking systems have a crucial bearing on the efficiency of money, capital and foreign exchange markets. The Software Packages for Banking Applications in India had their beginnings in the middle of 80s, when the Banks started computerizing the branches in a limited manner. The early 90s saw the plummeting hardware prices and advent of cheap and inexpensive but high-powered PCs and servers and banks went in for what was called Total Branch Automation (TBA) Packages. The middle and late 90s witnessed the tornado of financial reforms, deregulation, globalization etc. coupled with rapid revolution in communication technologies and evolution of novel concept of 'convergence' of computer and communication technologies, like Internet, mobile / cell phones etc.

Technology is emerging as a key driver of business in the financial services industry. The advancements in computing and telecom have revolutionized the financial industry and banking on the net is fast catching on. Banks are developing alternative channels of delivery like ATMs, tele-banking, remote access, internet banking, etc. The payment and settlement system is also being modernized. RBI is actively pursuing the objective of establishing a Real Time Gross Settlement (RTGS) system on par with other developed economies. Customers realizing the benefits of technology are demanding more for less. Information Technology enables sophisticated product development, better market infrastructure, and implementation of reliable techniques for control of risks and helps the financial intermediaries to reach geographically distant and diversified markets. Internet has significantly influenced delivery channels of the banks. Internet has emerged as an important medium for delivery of banking products and services.

The customers can view the accounts; get account statements, transfer funds and purchase drafts by just punching on few keys. The smart card's i.e., cards with microprocessor chip have added new dimension to the scenario. An introduction of 'Cyber Cash' the exchange of cash takes place entirely through 'Cyber-books'. Collection of Electricity bills and telephone bills has become easy. The up-gradation and flexibility of Internet technology has extraordinary opportunities for the banks to reach out to its customers. No doubt banking services have undergone drastic changes and so also the expectation of customers from the banks has increased greater.

IT is increasingly moving from a back office function to a prime assistant in increasing the value of a bank over time. IT does so by maximizing banks of pro-active measures such as strengthening and standardizing banks infrastructure in respect of security, communication and networking, achieving inter branch connectivity, moving towards Real Time gross settlement (RTGS) environment the forecasting of liquidity by building real time databases, use of Magnetic Ink Character Recognition and Imaging technology for cheque clearing to name a few. Indian banks are going for the retail banking in a big way

The key driver to charge has largely been the increasing sophistication in technology and the growing popularity of the Internet. The shift from traditional banking to e-banking is changing customer's expectations.

Review of Literature

The following studies on Information technology in banking sector related directly or indirectly have been reviewed:

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Dr. C. Rangarajan (Chairman Economic Advisory Council to the Prime Minister, **2011)**
The IDRBT Foundation Day Lecture 2011, delivered lecture on "Role of Technology in Development of Banking" as the technology has emerged as the principal driving force for long term economic growth. Here Dr. C. Rangarajan tries to trace briefly the evolution of technology adoption in Indian banking in three ways, first, the computer systems were designed to take care of the accounts related functions of the banks which were at the heart of banking operations and which had assumed great significance in terms of the need for accuracy and control. Second, the next progress was towards branch automation. This enabled setting up of "Single Window Service" facilities which were focused on the customers. Third, there was the emergence of network based operations which were aimed at providing interbank connectivity. Fourth, an important stage in the evolution of the user friendly technology arrived with the deployment of ATMs and the adoption of Core Banking Solution which radically 7 transformed the way banking was done in India both by bankers and customers.

R. K. Uppal (2011)
In their paper "E-Age Technology–New Face of Indian Banking Industry: Emerging Challenges and New Potentials" analyzes the performance of major banks in terms of productivity and profitability in the pre and post e-banking period. Under the regime of banking sector reforms, IT Act of 1999 gave new dimensions to the Indian banking sector. IT has created transformation in banking structure, business process, work culture and human resource development. It has affected the productivity, profitability and efficiency of the banks to a large extent. The paper concludes that performance of all the banks under study is much better in post-e-banking period and further foreign banks are at the top position, whereas the performance of the public sector banks is comparatively very poor.

KPMG, "Technology enabled transformation in Banking", The Economic Times Banking Technology, Conclave 2011:
The article has concluded that Information technology in banking is fast evolving. From enabling banking services to driving transformation in the industry, Information technology holds a promise to change the face of banking in the next few years. New entrants are looking to leverage their existing strengths in the Indian banking arena. The opportunity available to these entrants through leveraging their understanding of technologies and markets they operate in, promises innovative business models with a focus on delivering customer value. The pace of change aided by regulatory directions will push banks to direct their strategies to a customer centric focus over the next four years.

Dr. Kanhaiya Singh, Dr. U. S. Pandey, Priya Gupta (2011)
In their paper "Technological innovation in Indian banking sector-Use of its product" focuses on the way transformation is affecting the banking sector and the way use of IT products have changed the face of banking in India. It reveals current environment of the banking industry; the factors that have brought changes in the industry; and the way these changes have contributed to the development of banking. This paper concludes that financial market has turned into a buyer's market. Banks are have now bloomed into one-stop Supermarkets. Their focus is shifting from mass Banking to Class banking with introduction of value added and customized products.

Dr.SatishTanajiBhosale and Dr. B.S. Sawant (2011)
In their article "Technological Developments in Indian Banking Sector" analyzes that significant role in development of Indian economy. So banks need to optionally leverage technology to increase penetration, improve their productivity and efficiency, deliver cost-effective products and services, provide faster, efficient and convenient customer service and thereby, contribute to the overall growth and development of the country. Technology enables increased penetration of the banking system, increases cost effectiveness and makes small value transactions viable. Besides making banking products and services affordable and accessible, it's simultaneously ensures viability and profitability of providers.

Statement and Rationale of the study
India is highly populated country; it is difficult to provide physical banking services to each and every citizen of India. Indian Government is working very hard since years in encouraging and educating the citizens with computer knowledge due to which there is a large possibility to see a bright future for ICTin banking sector in India. In this study, Researcher tried to examine the various facets of e-banking services. The procedure of traditional banking system is highly time-consuming. Hence, providing banking services through Information technology at high level will change the working pattern of Bankers as well as the customers in terms of Customer Service and Banking Services. The

study will help to analyses the customer satisfaction; it will also include the current acceptance of banking with technology in the society and willingness to adopt it further.

Objective of the study

This study covered the following objectives:

1) To study and examine the evolution of ICT in Indian banking sector.
2) To understand the latest trends of technological advancement and its application and its impact on functioning of banking sector.
3) To study the challenges and opportunities of ICT applications and its scope in Indian banking sector.
4) To study the pros and cons of ICT adoptions in Indian banking sector.

Research Methodology

The study is based on secondary sources of the data. The data for the study is collected from various secondary sources such as published annual reports of RBI and other selected official websites, Books, Magazines, Journals, Newspapers, Published/Unpublished articles, Internet websites etc. The nature of the study is analytical and descriptive.

Evolution of IT in Indian banking sector

After the industrial revolution, the information revolution has been hailed as the most significant development in this country. Financial institutions including banks have used Information Technology to achieve the followings are ability to handle large volumes of business with the desired level of efficiency, Maximizing profitability of operations and Exercising a strict vigil on costs. International banks have achieved the objectives. Now they are engaged to get returns from the investments in IT.

Computers and communications technologies enable international banks and financialinstitutions to expand their reach and to offer technology based products to a wide spectrum of clientele. During the current decade, banks in India are exploiting the political of IT in some areas. They are collection, storage and processing of information in administrative office, toning up book-keeping efficiency at branches by computerizing back office operations, Full branch computerization and Setting up Automatic Teller Machines. In the Indian scenario, the private banks have adopted a strategy to get the quality business in the retail segment. A conventional lending business was of no use, they have started exploiting technology advancements to capture the business of customers in the urban and metropolitan centers. A well-established player in the banking area has started taking serious note of these developments.

In the context, it is worthwhile to trace the changing expectations of customers over the last few years. In the olden times the account holders were largely satisfied with the services dispensed by the branch of a bank. They are Receipt and payment of cash as and when needed, Collection of instruments, local as well as outstation, Remittance facilities such as Demand Draft, Advances against securities such as gold and Safe deposit locker facility.

Pros and Con's

Dimensions of IT Innovation	***Limitations for electronic-only retail commercial banking***	***Potential for electronic-only retail commercial banking***
Innovation in Service Offering	• Each new technological innovation accounts for (proportionally) smaller reductions in price differentials. • Bank customers remain unwilling to pay for interfaces for the new technology, while merchants expect to share the revenue of new payment Media through lower commission Charges. • Defection rates remain low thanks to the inertia of bank customers, which has been historically high. • Unknown brand name and associated high marketing expenditure (to attract long-term core deposits)	• Greater price transparency. • Greater convenience to customers (including congenial resolution of customer complains through electronic media). • Each customer segment interacts with the bank through the most cost effective distribution channel. • Innovations (such as smart cards and digital cash) that circumvent banks‟ proprietary networks with alternative distribution or payment systems. • Creation of new customer

		segments and improved relationship banking.
Operational Function Innovation	• The possibility of scale economies make it very hard for potential entrants to catch up, even with technically better systems. • Continued importance of contextual non - standardized elements to assess risk • The potential for fraud, money laundering and systemic failure requires supervision, regulation and minimum capital requirement. • More specialized (and expensive) labor force.	• Enhanced financial performance due to reductions in overhead expenses (i.e. no retail branch network) which are not offset by reductions in revenue or increases in other expenses. • Standardization of activities in payment and lending services eliminates the uniqueness of banks' proven expertise and ability to control losses from payment activities efficiently. • Access to a much wider base of depositors and high rates of asset growth.

Recent Developments in Indian banking sector through ICT

A Model Tech Bank

The objectives of a model high tech bank are to enhance efficiency through cost reduction and additional revenue generation and to offer better customer service. The architectural components through which they aim to achieve these objectives are a core, centralized database, multi-channel delivery of products and services, use of self-services, STP, e- and m- commerce products and e-based private wealth management services.

Core Banking Solution

Central to any modern banking technology based product and service offerings of a bank is common data base of its customers to have a unified, consistent and up to date view. It is also critical for full compliance with regulatory requirements. The Reserve Bank in October 2002 in its Mid Term review of monetary policy recommended to bank to put in place a core or centralized solution.

ATMs

ATMs are on top of the agenda of any bank desiring multi-channel delivery capabilities. They are the key elements of any self-service offering strategy of bank. Elsewhere they helped reduce cost and increase revenue besides offering better customer service.

Cards

Banks in India have graduated from issuing proprietary cards to card networks and onwards to co-branded cards. They have also gone through the charge debit-credit syndrome. They are on the verge of moving over to multi-application smart cards. Cards are an important segment of multi-channel delivery mechanism of many banks.

Internet Banking

Core to the cost efficient 'anytime and anywhere banking' is the internet banking. Elsewhere 'internet only' banks were tried out but could not survive, as the customers wants the comfort of physical presence of bank employees to interact with. Innovative ideas like customers chatting online with an internet boot, a robot based on artificial intelligence could not carry them too far.

M-banking

Mobile phones have the potential to become the omnipresent data device beating the personal computers so said an expert. Their capacity for transactional and information services delivery is tremendous. Mobile industry is unveiling services and value adds that will propel the mobile technology to the forefront of ordinary people's everyday life.

E-commerce

As businesses have become more efficient internally and have embraced such ideas as enterprise resource planning and straight through processing, it has become even more critical for banks to provide services that support the new corporate culture. While credit remains the key offering of

banks to the corporate, delivery of fee based services and information to them is increasingly becoming strategically important.

Challenges Ahead:

- Meet customer expectations on service and facility offered by the bank.
- Customer retention.
- Managing the spread and sustain the operating profit.
- Retaining the current market share in the industry and the improving the same.
- Completion from other players in the banking industry.
- System re-engineering to enable. Defines and implemented efficient processes to be able to reap benefits off technology to its fullest potential.
- Managing technology, security and business risks.

How to meet challenges:

- Inward clearing data uploading and processing.
- Audit from the remote location.
- Sending mails and statement of accounts to customers and completion of non-mandatory field in newly opened accounts.
- Single window system.
- Customer relationship management (CRM) application.
- Data warehousing.
- Revised account opening from for capturing complete customer/account data as per CBS requirement.
- Centralization of functions.

Conclusion

Initiation of Information Technology and Communications networking system is set to change the operating environment of banks drastically. Technology has already enabled some of the banks to introduce innovative products to their customers in the form of ATM facility, Tele-banking, Home Banking, 'Anytime' and 'Anywhere' banking, etc. Technology can also be harnessed in automating and networking the branches that will ensure timely flow of information and aid decision making process .The banks that can adopt and absorb the new technology faster will have a competitive edge over their rivals.

The changes brought about by ICT (Information and Communication Technology), new products, more sophisticated customers, changing cost structures, and enhanced competitive pressures have all combined to transform the structure of the banking industry. And with further development of new technologies, the industry will likely continue to evolve.

Customers of banks have felt the positive impact of technological solutions implemented by banks. The customers of banks of today have a virtual menu of options as far as delivery channels are concerned and all these are the benefits of technology.

With the most visible benefits happening in the areas of payments for retail transactions, a variety of cards, Automated Teller Machines, Electronic based funds transfers, Internet banking, Mobile banking are all some of the latest technology based payment solutions, which have gained large acceptance amongst the Indian banking public. With technological solutions rapidly evolving, more new products and services may soon become the order of the day.

Though infrastructure and communication advancements remain an area of concern, in the rural areas, standards are being formulated to make banking a secure and pleasant experience and banks have bridged the divide caused by distances by offering 'Anywhere and Anytime banking'.

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