

# Role of Information Technology in Banking Industry

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## Abstract

Technology has continuously played an important role in the working of banking institutions and the services provided by them. 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. Internet has significantly influenced delivery channels of the banks. Internet has emerged as an important medium for delivery of banking products and services. 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 a leaner 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.

**Keywords:** banking industry, banking business, technology innovation, information technology, MIS

## 1. Introduction

Technology has opened up new markets, new products, new services and efficient delivery channels for the banking industry. Online electronics banking, mobile banking and internet banking are just a few examples.

Information Technology has also provided banking industry with the wherewithal to deal with the challenges the new economy poses. Information technology has been the cornerstone of recent financial sector reforms aimed at increasing the speed and reliability of financial operations and of initiatives to strengthen the banking sector.

The IT revolution has set the stage for unprecedented increase in financial activity across the globe. The progress of technology and the development of worldwide networks have significantly reduced the cost of global funds transfer. It is information technology which enables banks in meeting such high expectations of the customers who are more demanding and are also more techno-savvy compared to their counterparts of the yester years. They demand instant, anytime and anywhere banking facilities.

IT has been providing solutions to banks to take care of their accounting and back office requirements. This has, how-

ever, now given way to large scale usage in services aimed at the customer of the banks. IT also facilitates the introduction of new delivery channels--in the form of Automated Teller Machines, Net Banking, Mobile Banking and the like. Further, IT deployment has assumed such high levels that it is no longer possible for banks to manage their IT implementations on a stand alone basis with IT revolution, banks are increasingly interconnecting their computer systems not only across branches in a city but also to other geographic locations with high-speed network infrastructure, and setting up local area and wide area networks and connecting them to the Internet. As a result, information systems and networks are now exposed to a growing number. Entry of new banks resulted in a paradigm shift in the ways of banking in India. The growing competition, growing expectations led to increased awareness amongst banks on the role and importance of technology in banking. The arrival of foreign and private banks with their superior state-of-the-art technology-based services pushed Indian Banks also to follow suit by going in for the latest technologies so as to meet the threat of competition and retain their customer base. Indian banking industry, today is in the midst of an IT revolution. A combination of regulatory and competitive reasons, have led to increasing importance of total banking automation in the Indian Banking Industry.

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Information Technology has basically been used under two different avenues in Banking. One is Communication and Connectivity and other is Business Process Reengineering. 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. In view of this, technology has changed the contours of three major functions performed by banks, i.e., access to liquidity, transformation of assets and monitoring of risks. Further, Information technology and the communication networking systems have a crucial bearing on the efficiency of money, capital and foreign exchange markets. Internet has significantly influenced delivery channels of the banks. Internet has emerged as an important medium for delivery of banking products & services. Detailed guidelines of RBI for Internet Banking has prepared the necessary ground for growth of Internet Banking in India.

## 2. Literature Review

**Nair, K.N.C (2006)** Banks will continue to find newer and innovative ways of using technology to serve their customers better. Technology advances like Data Mining and Business Intelligence will enable and empower branch personnel to realize higher customer life cycle value. Banking and financial services have undergone a dramatic transformation over the past decade. Banks today face unprecedented challenges to sustain their growth path, if not for survival. Some of the significant challenges the present-day bankers face include customer acquisition and retention, reducing cost of transactions, risk management, regulatory compliance like Basel II, etc. Effective use of technology, however, has greatly helped the banking sector to transform these challenges into opportunities. Technology absorption in banks may be broadly classified into three phases. In the first phase, banks targeted to reduce their operating costs through better efficiencies. To achieve that, they streamlined their back-office processing and eliminated error-prone manual input of data. Second, banks saw opportunities in serving their existing customers and attracting new customers by way of offering new products and services as well as enhancing the convenience and value of existing products and services. Third, with highly powerful data storage and analysis technologies, banks are able to develop and implement sophisticated risk- and information-management systems and techniques.

**Bhattacharya, A. (2006)** 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, Telebanking, 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 IT (Information 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'.

**Goi, C. L. (2005)** E-banking has to be a delivery channel that replicates and replaces many of the physical functions a bank currently performs. Hence, the E-banking now becomes a virtual banking counter that the individual and corporate customer to carry out the regular activities. Even E-banking services more to electronic-based, but, it still strongly support banking activities, therefore communication, transaction and distribution (Peterson, Balasubramanian and Bronnberg, 1997). There are number of challenges need to be faced by Malaysian banks, however, the opportunity in this industry is high due to the current trend especially application and development of ICT.

**Nyangosi Richard, Dr. Arora J.S. (2009)** Studied that the offers vital managerial and policy implication for Kenyan commercial banking industry as well as other financial institutions willing to offer banking services through ATM technology /distribution channel. This empirical study examined the adoption

behavior of Kenyan commercial bankers. The findings revealed that among the e-channels surveyed, ATM was the most adopted technology by the banks.

**Dr. Vanniarajan T. (2008)**, Studied an empirical analysis of the services quality factors determining the customer's satisfaction, using a structural model—results of the present study reveal that the important service qualities in commercial banks are credibility, customization, service consistency, access, services components, tangibility and innovation.

**Saurabh, Taggar Rashi, Dr. Giri sunil (2009)**, observed that self service options have penetrated deep into the market and are being used by users to a great extent. The frequency of using self service options is far greater than going for traditional banking methods. The customers have a perception that self service options save time, reduce traveling, are 24 hr available, update accounts instantly and are attractive to use.

**Biswas Nigamananda (2010)**, Highlighted the benefits obtained through adopting technology in banking services. The synergy between computer and communication technology has really changed the banking milieu. Technological advancements throw new challenges to the employees in the banking sector. Banking technology must provide excellent and secured services to customers for the sustained development of this sector.

**Buddhika S.A. (2010)**, the objective of this study was to find out customer perception about the prevailing service quality levels at private sector banks situated in hambantota and find out the influence of customer demographics on service quality. Research concludes that there is an influence of customer demographics on customer satisfaction and on customer perceived service quality.

**Dr.Kaur Amrinder (2010)**, studied the public sector banks in relation to foreign banks. The comparative study of the satisfaction level of the customers of public sector banks and foreign banks reflects two view points. The study brings out that sizable number of customers is satisfied with the public sector banks largely because of their traditional approach and mind set towards banking and present attention provided by them.

### 3. A Total System Approach

An individual's behaviour can be analyzed keeping in view his psychological framework, interpersonal-orientation, group influence and social and cultural factors; thus, individual's nature is quite complex and organizational behaviour by applying systems approach tries to find solutions for this complexity.

Critical factors of innovative organizational culture

An extensive list of critical factors of organizational culture was consolidated from literature reviews by a recent study. It embedded beliefs and behaviours found from innovative organizations suggested by other researchers and is depicted in Figure 1.

**Figure 1:** Critical factors and elements of innovative organization

Factors	Organizational Climate (OCL)	Organizational Characteristics (OCH)	Organizational Context (OCO)
Elements	Risk Orientation (RO)	Formalization (FO)	Learning Ability (LA)
	External Orientation (EO)	Centralization (CE)	Organizational Slack (OS)
	Achievement Orientation (AO)	Specialization (SP)	

They are divided into three categories of factors, namely, Organizational Climate (OCL), Organizational Characteristics (OCH), and Organizational Context (OCO). OCL represents the top management beliefs and commitments to provide an atmosphere to improve the innovativeness of an organization. OCH represents the structural characteristic of an organization that contributes to the innovativeness, while OCO represents the abilities of an organization to maintain as a learning organization and sustains the competitive edge. It also refers to the availability of sufficient slack of an organization. Each category of factors has several elements as recounted below.

#### 3.1 Organizational Climate (OCL)

This factor involves three well-known elements, they are risk orientation (RO), external orientation (EO) and achievement orientation (AO). These three elements are influencing the innovativeness of organizations. The organizational climate is closely allied with culture and is reflected by the practices of peoples, procedures and rewards systems. Two dimensions of climate influence the innovation process of organizations. They are communication and freedom to express opinions.

#### 3.2 Organizational Characteristics (OCH)

Organizational characteristics, in terms of formalization (FO), centralization (CE) and specialization (SP) moderate the relationship between characteristics and innovativeness. Formalization refers to the degree of using written job description for all classes of employees in an organization. It also refers to the degree of

using written policies and procedures to guide the actions of employees.

### 3.3 Organizational Context (OCO)

The organizational context consists of organizational slack (OS) and learning abilities (LA). Considerable study exists on innovativeness points out that learning abilities are the key factor of organizations. Organizational learning enables an organization to sustain its competitive advantages in the market segments and it is a critical factor in acquiring new technologies. Organizational slack is a key contributor to innovativeness of an organization.

## 4. Data Analysis

**Table 1:** Response of the bank employees with respect to satisfaction working in fully computerized set up

Sl No	Response of bank employee	Number of bank employees				Percentage
		18-30	31-45	Above 45	Total	
1	Yes	24	48	20	92	61%
2	No	2	10	19	31	21%
3	Can't Say	4	12	11	27	18%
Total		30	70	50	150	100%

Source: field work

From table 1 It has been observed that maximum number of 92 bank employee that is 61% of the total sample are satisfied with the fully computerized set up includes the 24 employees with age of 18-30 and there total sample size is 30 out of 150 respondents which shows good satisfaction level of employees for computerization i.e 80% of the age group between 18-30 years, another category of age between 31-45 there satisfaction level is also near to the satisfactory which is 68.57% of the same age group but satisfaction level age group above 45 is something negative which is only 20 employees out of 50 employees and 40% of the same age group and 31 bank employees are not satisfied with the fully computerized set up in state bank of India. 27 employees unable to say anything with the satisfaction of their working after fully computerized set up.

**Table 2:** Response about training programme before/ after the computerization of banks.

Sl. no.	Particular	Number of bank employees				%
		According to their age				
		18-30	31-45	Above 45	Total	
1	YES	24	48	28	100	67%
2	NO	6	22	22	50	33%
Total		30	70	50	150	100%

Source: field work

From table 2, It has been observed that maximum number of 100 bank employee that is 67% of the total sample are satisfied with the training programme before and after computerization includes the 24 employees with age of 18-30 and there total sample size is 30 out of 150 respondents which shows good satisfaction level of employees for computerization i.e. 80% of the age group between 18-30 years, another category of age between 31-45 there satisfaction level is also near to the satisfactory which is 68.57% of the same age group but satisfaction level age group above 45 is not satisfactory which is only 28 employees out of 50 employees and 56% of the same age group and 50 bank employees are not satisfied with the training programme before and after computerization in state bank of India includes 6 employees between age group of 18-30, 22 employees between age group of 30-45 and 22 employees more than 45 age group

**Table 3:** Response for clarity of role/responsibility/ instructions/guidelines for different functionaries at the computerized branches.

Sl. no.	Particulars	Number of bank employees				%
		According to their age				
		18-30	31-45	Above 45	Total	
1	Adequate	19	50	28	97	65%
2	inadequate	5	10	15	30	20%
3	just sufficient	6	10	7	23	15%
Total		30	70	50	150	100%

Source: field work

From table 3, It has been observed that maximum number of 97 respondents have clarity of role/responsibility/instructions/guidelines for different functionaries at the computerized branches which is 65% of the total response 30 respondents have inadequate about clarity of role/responsibility/instructions/guidelines for different functionaries at the computerized branches which is 20% of the total response and 23 respondents have just sufficient for clarity of role/responsibility/instructions/guidelines for different functionaries at the computerized branches which is 15% of the total response

## 5. Conclusion

Most of the banks are clearly defined technology related strategy and vision. They are also setting aside big budgets for technology. The potential benefits and opportunities of putting in place the new technological platforms are many, like improved customers experience, enhanced product delivery, product innovations, better cross selling of products, streamlining operations, reducing the transaction cost, better risk management controls. It has been observed from the data analysis that maximum number of

92 bank employee that is 61% of the total sample are satisfied with the fully computerized set up includes the 24 employees with age of 18-30 and there total sample size is 30 out of 150 respondents which shows good satisfaction level of employees for computerization i.e., 80% of the age group between 18-30 years, another category of age between 31-45 there satisfaction level is also near to the satisfactory which is 68.57% of the same age group but satisfaction level age group above 45 is something negative which is only 20 employees out of 50 employees and 40% of the same age group and 31 bank employees are not satisfied with the fully computerized set up in state bank of India. 27 employees unable

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