IMPACT OF INFORMATION TECHNOLOGY ON BANKING INDUSTRY

MRS. BINDIYA TATER
Ph.D. Research Scholar
Suresh Gyan Vihar University, Jaipur
Email: bindiya.tater@gmail.com

DR. MANISH TANWAR
Assistant Professor, Deptt. Of Management,
B.J.S. Rampuria Jain College, Bikaner
Email: imanishtanwar@gmail.com

MR. NAVARATAN BOTHRA
Ph.D. Research Scholar
Madhya Pradesh Bhoj Open University, Bhopal
Email: bothra.navratan@gmail.com

Abstract

This paper addresses the general impact of Information Technology (IT) on the Banking industry. Advancement in technology is a means to enjoy economies of scale in production, development of new product and services, creation of knowledge, as well as to instill product quality and services efficiency. India's banking sector has made rapid strides in reforming and aligning itself to the new competitive business environment. As a result, the growth of investment in information technology (IT) has cause the acceptance of user decision-making process via IT and its usage, an increasingly critical technology implementation and management issue. The aim of this paper is to examine the applications of IT in the banking Industry. It brought to light the fact that IT has increased competition within the industry; Latest trends of IT in banking; IT application and system problems; Security of information systems is found to be very vulnerable; IT Fraud is also a major problem of the banking industry. The data for the study was collected from Published Literature, existing research, Interviewed bank IT, Reviewed current IT trends, Library Resources, annual Reports, Case studies and Other Archive Reports. The banking today has re-defined with the use of Information Technology and it is sure that the future of banking will offer services that are more sophisticated to the customers with the continuous product and process innovations. Thus, there is a paradigm shift “conventional banking to convenience banking” and “mass banking to class banking”.

Keywords: Information Technology, Application, Competition, Security, Fraud.
Introduction

India’s banking sector has made rapid strides in reforming and aligning itself to the new competitive business environment. Indian banking industry is the midst of an IT revolution. Information Technology has improved the speed and efficiency of banking operations particularly routine banking transactions and as a result has shape the nature of the services provided to customers. It 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. The flexibility provided by IT has help banks develop new products and improve the quality of current services offered to customers. Banks now use IT to transmit information, receive instructions and transact business. The quality, range and price of electronic services are an important part of any bank’s competitiveness in the global market place of today’s business environment. It facilitates the introduction of new delivery channels--in the form of Automated Teller Machines, Net Banking, Mobile Banking and the like. Examples of these transactions include deposits, withdrawal and transfer of funds between banks or countries and payment of bills. A simple transactional chain could involve the Customer Account, Recipient Clearing House, Paying bank and Payee Bank.

The banking sector has 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. The impact of IT on the banking industry is enormous; banks rely on IT for most of its operations and transactions. The banking industry is totally dependent on the use of IT for its delivery of a cost effective service and therefore, IT has become an integral part of every bank's business operations. The breakdown of the computer system, even for short period, is likely to prove enormously costly to any bank.

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. However, it should be noted that IT has not been all good to the banking industry; IT has brought down the barriers to entry - increasing competition. In as much as the price of IT is falling it is still very costly. It has also resulted partly in the lost of thousands of jobs.

Objective of the Study

The Objective of the study is to examine current IT application in the banking Industry, Recent trends of IT in banking Industry, Effect of IT over competition, it also addresses IT application and system problem, Security of IT systems and lastly IT risk and IT fraud.

Research Methodology

The data for the study was collected from Published Literature and existing research, Interviewed bank IT personnel to provide an insight into the impact of IT in banking industry, Reviewed
current IT trends in the banking industry, Library Resources, annual Reports, Case studies and Other Archive Reports.

Recent Trends of It In Banking Industry

The study forecasts trends in banking for a unique insight into the competitive forces that bankers will face in the next 10 years. It highlights the emerging business and technology innovations and societal trends that will propel and shape the industry’s transformation. According to the survey, the five key trends that will determine market success in 2015 are customers taking control, niche competitors, a new workforce, regulated transparency and sharp focus on technology. Sharad Bishnoi, Assistant Vice-president, Head, Business Process Re-engineering Group, HDFC Bank says, “Banking services require a high level of customer engagement and understanding of the requirements for a quality value proposition. These factors can be sustained long-term by adopting a customer-centric business strategy.”

Liberalization and de-regulation process started in 1991-92 has made a sea change in the banking system. From a very-regulated environment to market driven competitive system. The pace of changes gained momentum in the last few years. Four trends change the banking industry world over, viz. 1) Consolidation of players through mergers and acquisitions, 2) Globalization of operations, 3) Development of new technology and 4) Universalisation of banking.

The traditional banking functions would give way to a system geared to meet all the financial needs of the customer. For example, utility service providers offering, bill payment services, supermarkets, or retailers doing basic lending operations. The competitive environment in the banking sector is likely to result in individual players working out differentiated strategies based on their strengths and market niches. For example, some players might emerge as specialists in mortgage products, credit cards etc. whereas some could choose to concentrate on particular segments of business system, while outsourcing all other functions.

International trade is an area where India’s presence is expected to show appreciable increase. With the growth in IT sector and other IT Enabled Services, there is tremendous potential for business opportunities. Banks use multiple delivery channels to suit the requirements and tastes of customers. While some customers might value relationship banking (conventional branch banking), others might prefer convenience banking (e-banking). Mergers and acquisitions would gather momentum as managements strive to meet the expectations of stakeholders.

Corporate governance in banks and financial institutions would assume greater importance in the coming years and this will be reflected in the composition of the Boards of Banks. Concept of social lending would undergo a change. Rather than being seen as directed lending such lending would be business driven. With SME sector expected to play a greater role in the economy, Banks will give greater overall focus in this area. With technology acting as a catalyst, it entails emergence of an integrated and diversified financial system

Human Resources Development would be another key factor defining the characteristics of a
successful banking institution. Employing and retaining skilled workers and specialists, retraining the existing workforce and promoting a culture of continuous learning would be a challenge for the banking institutions.

Mr. V Chandrasekhar, General Manager & Chief Technology Officer, Bank of Baroda

summarizes the key areas, which will get the emphasis in IT plans/Strategy of banks-

a. Networking of branches
b. secure messaging for launching funds transfer products.
c. Integrated Treasury Management System.
d. Focus on technology based initiatives for Intra-day liquidity Management.
e. Core Banking Solution implementation.

The survey goes on to predict that market changes will pose growing challenges for conventional banks. Sunny Bannered, Global Banking Leader for the IBM Institute for Business Value says, “By 2015, we will live in an intensely customer-centric market dominated by global mega banks and densely populated by specialist financial services providers. Technology will also drive fundamental changes in workforce disposition, which will have substantial follow-on effects for productivity, efficiency and profitability. These trends are already evident but as they become entrenched, there will be profound changes in the competitive drivers of global banking.”

Effect of IT Over Competition

The research brought to light the fact that IT has increased competition within the industry. Deregulation of the banking industry has introduced more competition but the low cost of computer technology has made it easier to enter the industry. Non-banks can now pick up off the shelf IT solutions for the services they want to provide. While entry of foreign banks is bound to affect the overall competitive situation in the market, much depends on the policy of the sovereign with regard to their entry/expansion, the existing share of domestic banks, etc. With regard to mergers, only very few foreign banks operating in India have gone through the process of global mergers. The impact of megamergers taking place at the global level on the competitive position of the Indian banking system has been minor, in view of foreign banks. At the same time, foreign banks have the potential, even without megamergers, to improve their market share, given their use of sophisticated technology and capability of introducing innovative products. Mergers of banks help to reduce the gestation period for launching/promoting new places of business, strengthen product portfolios, minimize duplication, gain competitive advantage, etc. It has recognized as a good strategy for enhancing efficiency, mergers ought to be aimed at exploiting synergies, reducing overlap in operations, right sizing and redeploying surplus staff by either retraining, alternate employment or voluntary retirement, etc. In addition, the expectation of their customers is very high and in response banks using IT to satisfy the demand for quality services and products. However, there is an increasing outside threat to the banking industry from the non-banking sector.
With increased global competition and the move towards a more universal type of banking, involving commercial banking, investment and other financial services, banc assurance that entails banking and insurance services in the same banking institution and other such services offering an array of services. Traditional banks have been struggling with several strategic changes to their livelihood. These include the steady decline in assets held in traditional banking products as a percentage of total wealth in the country and lower margin rates on those products as the increased commoditization of these products has accelerated. This has exacerbated by legislative changes that have allowed non-traditional competitors to enter the market for traditional banking products. Also, as shareholders have become more sophisticated and have demanded better returns on equity, financial institutions used mergers as a vehicle for improving return on assets.

It Applications and Systems Problems

"Banking system’s problems at heart of the bear case"

Following are the IT application and systems problem faced by the Banking Industry:

- lack of adequate operational infrastructure like telecommunication and power, upon which e-banking generally relies, instability of the banks to integrate their operations into the internet development process, absence of a clearly defined legal framework for internet banking, leaving banks with inadequate legal cover to provide the services. Data quality management is another problem to banking industry with legacy applications, real time usage, and volume of data.

Security of It Systems

Security implies sense of safety and freedom from danger or anxiety. When a banker takes a collateral security, say in the form of gold or a title deed, against the money lent by him, he has a sense of safety and of freedom from anxiety about the possible non-payment of the loan by the borrower. Data security is a major concern in the banking industry where over the years technology has been used to implement various standards to facilitate the implementation of security in the various transactions and internal processes in the industry.

The banking Industry and the computer security industry need to address these security challenges in close coordination with one another. Present systems of network security have been largely taken care of authorization, confidentiality, data integrity and non-repudiation. Level of security have been achieved by having a policy on server security that includes regular audits, penetration testing and vulnerability assessments. Security of network transmissions has been addresses by encryption that prevents their interception by ‘the man in the middle’.

RBI has also proposed implementation of negotiated dealing system (NDS), electronic clearing service (ECS) and electronic funds transfer (EFT). This would mean enhancing banking networks in terms of security by means of use of Public Key Infrastructure (PKI) and Digital...
Signatures. Though the Government had been promoting the usage of technology in our day-to-day lives for a long time, things are taking a concrete shape finally. The identification of certifying authorities, formation of a separate IT ministry, all are forward moving steps in this regard.

Privacy technology can be used to assure that consumers, merchant’s, and the transactions themselves remain confidential. For instance, companies sending important, secret information about their marketing strategy to one of its partners would like to keep that information private and out of the hands of its competitors. This technology will keep all

**Figure1: Payment Risk**

Information secure and can be applied to electronic cash, also known as “e-cash”. Syndicate Bank, a public sector institution that was established in 1925, is one of them. When RBI introduced the check, truncation system in NCR, Syndicate Bank's Delhi branch was quick to embrace the change and undertook project. Kumar says he overcame user resistance and secured their buy-in by training them in the new system and holding multiple workshops. Another extremely critical aspect of this project, says Kumar, was security. The bank took around six months to test because it wanted to obviate any possible risks. They created a comprehensive information security framework to ensure that there was no problem in scanning checks and finally processing it at the RBI gateway.

CCTV equipment and network infrastructure to create a modern, state-of-the-art surveillance system that enables you to monitor activities at any number of branch office from a central location One which is sophisticated enough to visually verify alarms to your security staff, yet simple enough for bank staff to install and maintain without receiving special training. Axis bank provides you with cost-effective network video solutions that are easy to use and offer all the functionality and reliability needed to protect staff and assets, verify the bank’s transactions and
prevent time being wasted on attending to false alarms.

**It Risk and It Fraud**

Meanwhile, banks – the custodians of most of our cash - are offering their customers new and more convenient ways to manage funds. Telephone banking, Internet banking and Mobile banking have been added to traditional branch service delivery. In each case, the goal is to deliver information and payment services as quickly as possible. Moreover, every time a new delivery channel or payment service is made available, it has to be secured with encryption, usernames, passwords and PINs. This means more identity information that must be remembered, recorded and stored, compounding the already large amounts of data with the potential for compromise.

Fraudsters know their real financial opportunities lie in consumer and business bank accounts, where the combination of compromised access security data and on-line electronic payments offers them instant access to funds. Stolen electronic money, like ATM cash, delivers 100 cents on the dollar, a much higher return than stolen goods that must be resold at highly reduced prices.

Phishing attacks have grown exponentially over the last several years. Millions of spam emails are delivered every day. Although spam filters block many, it is inevitable that the best-designed emails can still get through and deceive unwary recipients. Even a small number of consumers tricked into compromising their bank account details, passwords can generate millions in losses, and the effect on these individuals is traumatic. In some countries, liability for losses resides with the victims, because laws and regulations requiring refund of stolen money from credit or debit cards do not cover retail bank accounts. In 2006, two UK banks announced that they were not obliged to refund their customers’ stolen funds if it was discovered that the customer had given away their own secret data. It is much more likely however, that a customer’s details will be compromised by organized hacking attacks or the action of bribed, threatened or criminal insiders who have direct online access to customer records.

Russian fraudsters, who used ATM card information (including PINs) which were stolen from a compromised third party banking system, have again hit Citibank. With Ukrainian confederates, $2 million was stolen in cash from ATMs around New York over a period of months in late 2007, and then laundered through various methods back to Russia.

In the absence of universal, proven biometric identification methods institutions have to admit that new ways must be found to secure customer transactions. European banks are now looking at two-factor authentication devices that generate one-time passwords to secure online banking access. The device illustrated only works with the issuer’s own cards, which means multiple card owners might require more than one device. Already other issuers are proposing ‘out-of-band’ password generation – by mobile phone for example – to avoid the need for bulky physical devices. In fact, security and fraud management is one of the top 10 strategic IT priorities identified worldwide by Financial Insights for 2006. Recent research from Financial Insights’
European practice indicates that security-enhancement technologies, data warehousing, and content/document management technologies are among the top investment priorities for European banks. For the former, the Basel Committee on Banking Supervision has released many documents, which outline voluntary codes by which banks can regulate their internal controls and risk management processes, especially in regards to Credit and Operational Risk.

Table 1: Risk Source and Dimensions In Electronic Shopping Context

<table>
<thead>
<tr>
<th>Source of risk</th>
<th>Risk dimension</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product</td>
<td>Performance risk</td>
<td>Dissatisfaction of the consumer in relation to expectations concerning product quality</td>
</tr>
<tr>
<td>Remote transaction</td>
<td>Time risk, Financial risk, Delivery risk</td>
<td>Time spent for purchasing includes a bad purchase Loss of money in bad purchase or purchase of a item can end up being higher than expected Fear of not receiving the product on time or long waiting period</td>
</tr>
<tr>
<td>Internet</td>
<td>Social risk, Privacy risk, Payment risk</td>
<td>Use of the Internet for purchase item may cause disagreement with other family members or friends. Personal information might be used for the other purposes Fear of giving credit card number to others.</td>
</tr>
<tr>
<td>Website</td>
<td>Source risk</td>
<td>Fear of credibility and reliability of website and web-services provider</td>
</tr>
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Financial institutions protect their information by instituting a security process that identifies risks, forms a strategy to manage the risks, implements the strategy, tests the implementation, and monitors the environment to control the risks.

Statistical Data Miner helps banks and financial institutions to anticipate and quickly detect fraud and take immediate action to minimize costs. With sophisticated data mining tools, it is possible to examine millions of transactions to spot patterns and detect fraudulent transactions.

Conclusion

The banking today has re-defined and re-engineered with the use of Information Technology and it is sure that the future of banking will offer services that are more sophisticated 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 person to bank for his variety of needs and requirements.

It has not been a smooth sailing for banks keen to jump onto the IT bandwagon. There have been impediments in the path like the obduracy once shown by trade unions who felt that IT could turn out to be a threat to secure employment. Further, the expansion of banks into remote nooks and corners of the country, where logistics continues to be a handicap, proved to be another stumbling stock. Another challenge the banks have had to face concerns the inability of banks to
retain the trained and talented personnel, especially those with a good knowledge of IT. It is becoming increasingly imperative for banks to assess and ascertain the benefits of technology implementation. The fruits of technology will certainly taste a lot sweeter when the returns are measurable in absolute terms but it needs precautions in addition to the safety nets.

References

Journal


Magazine


Books


**Annual Report**


**Internet Web Sites**