



THE INROADS OF INFORMATION TECHNOLOGY IN AUGMENTATION OF PRODUCT INNOVATION IN INDIAN BANKING SECTOR

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Abstract: The Indian banking industry is evolving rapidly, and is at the threshold of explosive growth. Changing customer needs, technology-enabled disruptive business models, and a progressive regulatory environment are driving fundamental shifts in the industry, fuelling innovation and forcing banks to reconsider their business strategies. The changes that new technologies have brought to banking are enormous in their impact on officers, employees, and customers of banks. Advances in information technology is allowing for delivery of banking products and services more conveniently and effectively than ever before - thus creating new bases of competition. Rapid access to critical information and the ability to act quickly and effectively will distinguish the successful banks of the future. Consistent management and decision support systems provide the bank that competitive edge to forge ahead in the banking marketplace. This paper emphasizes the paramount role played by information technology (though the applications are all pervasive) in the banking sector in respect of product innovation.

Keywords: Banking, Information Technology in Banking, Online Banking.

Introduction

In India, banking as an institution organized in the late 18th century and primarily catered to the needs of the British. Post-independence, the nationalization of major private sector banks in 1969 - an important milestone in the Indian banking system - made banking accessible to the unbanked population in India. The economic liberalization in the early 1990s ushered in the era of privatization wherein many new private banks - the 'new generation tech-savvy banks' - were launched. A few foreign banks commenced their India operations as well. All these banks were quick to leverage emerging technology, were competitive in wooing customers and winning them

over by providing professional services. This helped infuse a sense of urgency in public sector banks and older private sector banks to mend their ways, which in turn completely revitalized banking operations in India.

The rapid advancement in Information and Communication Technology (ICT) has had a profound impact on the banking industry and the wider financial sector over the last two decades and it has now become a tool that facilitates banks' organizational structures, business strategies, customer services and other related functions. The recent "IT revolution" has exerted far-reaching

impacts on economies, in general, and the financial services industry, in particular.

Within the financial services industry, the banking sector was one of the first to embrace rapid globalization and benefit significantly from IT development. The technological revolution in banking started in the 1950s, with the installation of the first automated bookkeeping machines at banks. This was well before the other industries became IT savvy. Automation in banking became widespread over the next few decades as bankers quickly realized that much of their labor-intensive information-handling processes could be automated with the use of computers. The first Automated Teller Machine (ATM) is reported to have been introduced in the USA in 1968, and it was only a cash dispenser. The advent of ATMs helped both to improve customer convenience and reduce costs, as before ATMs, withdrawing funds, accounts inquiries and transferring funds between accounts required face-to-face interaction between bank staff and customers.

Overall, technological innovation has brought about the speedy processing and transmission of information, easy marketing of banking products, enhancement of customer access and awareness, wider networking and, regional and global links on an unprecedented scale. IT development has thus changed the product range, product development, service channels and type of banking services, as well as the packaging of such services, with significant efficiencies not only in the banks, but also the ancillary and feeder services to banks. The financial services industry has thus become virtually dependent on IT development. Most banks make visible efforts to keep up with new systems and processes.

The development in information technology (IT) has enabled banks to provide more diversified and convenient financial services, even without adding physical branches. The development of Internet services, which is an extensive, low-cost and convenient financial network, has facilitated banking services to customers, anywhere and anytime. Along with Internet and Web-based services, a need for changing core banking architecture has emerged. The introduction of new core banking systems by some banks and their links with the improved telecommunication network has enabled banking transactions to be done on-line, in contrast to the batch-processing mode used earlier. The integration of e-trading with internet banking and banks' websites is also a notable feature. These IT advancements have enabled banks to gradually replace manual work by automated procedures with on-line real time processing.

Technology investments

More than most other industries, financial institutions rely on gathering, processing, analyzing, and providing information in order to meet the needs of customers. Given the importance of information in banking, it is not surprising that banks were among the earliest adopters of automated information processing technology. The technological revolution in banking actually began in the 1950s, well before it began in most other industries, when the first automated bookkeeping machines were installed at a few US banks. Automation in banking became common over the following decade as bankers quickly realized that much of their labor-intensive, information-handling processes could be automated on the computer. A second revolution occurred in the 1970s with the advent of electronic payments

technology. Recognizing the importance of information security, the financial services industry during the late 1970s and early 1980s was also the first to implement encryption technologies on a widespread basis. The euphoria surrounding the Internet today seems very similar to that era, when the first nationwide credit card and electronic funds transfer systems were built.

While in hindsight it is clear that many of the earlier investments met those objectives, it is unclear whether today's most highly touted investments have done so, or will do so in the future. For example, the rush to set up Internet banks of a few years ago seems to have slowed, tempered by the experience of the few pioneers in this area, who found that although technology risks and hurdles are surmountable, the basic imperative of making a profit is often not. Smart cards are another example of an innovation that, although widely heralded several years ago as the next new personal banking device, has yet to be proved a convenient substitute for currency and coin.

As it is seen, the very recent admittedly mixed experience of the financial services sector with technologies - looking at the examples of Internet banking, on-line banking, smart cards, and ATMs - it seems that several lessons emerge. First, many of the investments have been made to automate existing processes, but the challenge of fundamentally rethinking the process from start to finish - the so-called core process redesign that is necessary to reap the full benefit of the current generation of technologies - has proved daunting. This is in part because many of the services that banks are attempting to automate currently are "joint goods", that is, the production and consumption of the product or service depend on the inputs or behaviors

of many players outside of the bank and even outside of the financial industry. For example, the flow of services from checks depends on a complex of economic factors, including consumers willing to write checks, merchants willing to accept them, and an infrastructure in place to clear and settle them. Attempting to automate part of the check process by imaging or to replace checks with a single instrument, such as the debit card, requires cooperation among all the organizations that support a checking transaction. Internet banks are another example of these interdependencies. Many Internet banks have discovered that they are using any savings in "brick and mortar" operating costs to pay "bounties", or fees, to other Internet sites that refer new customers and to operate call centers to field the customer inquiries that invariably arise.

Initially, the banks adopted systems developed in-house or used vendor provided systems on a decentralized basis, thus transforming manual systems to automated processes. However, most of the core-banking systems provided by different vendors were ad hoc solutions and on piecemeal basis, i.e. separate modules and technology platforms for key operations such as deposit mobilization and lending, trade finance, treasury operations, and more recently card transactions. Those who opted to implement new core-banking systems together with other sub systems and integrations may have made relatively large investments with sustainable gains to compensate costs. The arrival of new foreign and private banks with state-of-the-art technology-based services pushed other banks in Sri Lanka to move towards the latest technologies so as to retain their customer base and meet competition. The increasing competition in Sri Lanka's banking industry has widened the scope of the IT infrastructure

development to meet diversified demands made by numerous users. Today, customers of some banks enjoy services through Internet banking, Tele banking, Mobile telephone banking and Visa/Master Credit and Debit card facilities. The growing competition and expectations have also increased awareness amongst banks of the role and importance of technology in banking.

Advances in technology are allowing for delivery of banking products and services more conveniently and effectively than ever before - thus creating new bases of competition. Rapid access to critical information and the ability to act quickly and effectively will distinguish the successful banks of the future. The bank gains a vital competitive advantage by having a direct marketing and accountable customer service environment and new, streamlined business processes. Consistent management and decision support systems provide the bank that competitive edge to forge ahead in the banking marketplace.

Major IT applications: The advantages accruing from computerization are three-directional - to the customer, to the bank and to the employee.

For the customer: Banks are aware of customer's need for new services and plan to make them available. IT has increased the level of competition and forced them to integrate the new technologies in order to satisfy their customers. They have already developed and implemented a certain number of solutions among them:

- **Self-inquiry facility:** Facility for logging into specified self-inquiry terminals at the branch to inquire and view the transactions in the account.
- **Remote banking:** Remote terminals at the customer site connected to the

respective branch through a modem, enabling the customer to make inquiries regarding his accounts, on-line, without having to move from his office.

- **Anytime banking:** Anywhere banking: Installation of ATMs which offer non-stop cash withdrawal, remittances and inquiry facilities. Networking of computerized branches inter-city and intra-city, will permit customers of these branches, when interconnected, to transact from any of these branches.
- **Tele Banking:** A 24-hour service through which inquiries regarding balances and transactions in the account can be made over the phone.
- **Electronic Banking:** This enables the bank to provide corporate or high value customers with a Graphical User Interface (GUI) software on a PC, to inquire about their financial transactions and accounts, cash transfers, cheque book issue and inquiry on rates without visiting the bank. Moreover, LC text and details on bills can be sent by the customer, and the bank can download the same. The technology used to provide this service is called electronic data interchange (EDI). It is used to transmit business transactions in computer-readable form between organizations and individuals in a standard format.
- **Mobile Banking:** Mobile banking is a system that allows customers of a financial institution to conduct a number of financial transactions

through a mobile device such as a mobile phone or personal digital assistant.

- As information is centralized and updates are available simultaneously at all places, single-window service becomes possible, leading to effective reduction in waiting time.

For the bank: During the last decade, banks applied IT to a wide range of back and front office tasks in addition to a great number of new products. The major advantages for the bank to implement IT are:

- Availability of a wide range of inquiry facilities, assisting the bank in business development and follow-up.
- Immediate replies to customer queries without reference to ledger-keeper as terminals are provided to Managers and Chief Managers.
- Automatic and prompt carrying out of standing instructions on due date and generation of reports.

- Generation of various MIS reports and periodical returns on due dates.
- Fast and up-to-date information transfer enabling speedier decisions, by interconnecting computerized branches and controlling offices.

For the employees: IT has increased their productivity through the followings:

- Accurate computing of cumbersome and time-consuming jobs such as balancing and interest calculations on due dates.
- Automatic printing of covering schedules, deposit receipts, pass book / pass sheet, freeing the staff from performing these time-consuming jobs, and enabling them to give more attention to the needs of the customer.
- Signature retrieval facility, assisting in verification of transactions, sitting at their own terminal.
- Avoidance of duplication of entries due to existence of single-point data entry.

Types of innovative Banking Products & Services

<p>E-BANKING: Enable people to carry out most of their banking transactions using a safe website which is operated by their respected bank. Services:</p> <ul style="list-style-type: none"> • Online Account Services • Online Funds Transfers • Online Bill Payments 	<p>CORE BANKING:</p> <ul style="list-style-type: none"> • Depositing and lending of money • Core banking solution • Knowing customers needs • Retail and commercial banking
<p>CORPORATE BANKING: Financial Services to large Corporate & MNC's. Services:</p> <ul style="list-style-type: none"> • Overdraft facility • Domestic and international payments • Project Financing • Channel financing • Letters of guarantee • Working capital facility for domestic & 	<p>INVESTMENT BANKING: A specific division of banking related to the creation of capital for other companies. Investment banks underwrite new debt and equity securities for all types of corporations. Investment banks also provide guidance to issuers regarding the issue and placement of stock. Services:</p> <ul style="list-style-type: none"> • Raising Capital • Corporate Finance

<p>international trade</p> <ul style="list-style-type: none"> • Advisory Services (Mergers, Acquisitions, Taxation issues) • Asset Custody 	<ul style="list-style-type: none"> • Sales & Trading • Advisory Services (Mergers and Acquisitions)
<p>RURAL BANKING: It provides & regulates credit services for the promotion & development of rural sector mainly agriculture, SSI, cottage and village industries, handicrafts and many more.</p>	<p>NRI BANKING This facility is designed for diverse banking requirements of the vast nri population spread across the globe. Services:</p> <ul style="list-style-type: none"> • NRE (Non Resident External Account) • NRO (Non Resident Ordinary Account) • FCNR (Foreign Currency Non Resident Account)
<p>RETAIL BANKING It refers to banking in which banks execute transaction directly with individual, rather than corporate banks. It is also known as 'One stop shop'. Services:</p> <ul style="list-style-type: none"> • Saving and checking accounts • Mortgage • Housing Finance • Auto Finance • Consumer Durable Loans • Personal Loans • Educational Loans • Credit Cards 	

Trends in Product Innovations in Banking Sector

The current economic scenario gives banks an opportunity to identify channels that are most important to their customers, and provide a positive experience across them. Banks are shifting their customers from high-cost to lower-cost channels, thus reducing their total cost-to-serve. There is a growing trend to achieve a seamless multi-channel integration by banks who want to make their customer interactions channel-agnostic. This will help banks leverage their distribution networks by offering the right products to the right customer segment through a desired channel, resulting in overall cost savings and an enhanced customer experience. Banks also face highly saturated markets where product and price no longer remain the key differentiators, thus pushing up retention costs.

Innovations around better and faster delivery of the right products to a customer will help banks provide a differentiated customer experience, thus supporting better customer retention.

Banks globally are investing in enterprise mobile financial service solutions to deliver more mobile-based banking services and reduce the overall cost of operations. As the adoption rate of online banking continues to increase globally, banks are expected to increase their online marketing presence by leveraging technologies such as Web 2.0 and social networks, which have evolved as an integral part of the banking channel mix. Banks are also increasingly spending on Customer-centric analytical tools to better understand client buying and channel usage patterns, which can help build and improve customer relationships. Banking customers are increasingly

expecting more convenience, accessibility, personalization, and reliability across the distribution channel network. Banks need to deliver these features by leveraging innovative technologies and solutions for a seamless and personalized experience. There is a clear demand for banks to invest in their channel networks to make them more customer-centric and user friendly, while in the process improving the channel efficiencies for better return on investment and increased profitability.

KEY TRENDS

These changes have led to the emergence of five key trends across retail banking channels:

1. Increased online market presence using advanced technology platforms such as Web and social networks.
2. Investment in enterprise mobile financial service solutions to drive innovation and reduce costs.
3. Increased push towards web-based activities to put the online channel on an equal footing with branch networks.
4. More emphasis on seamless multi-channel integration to better serve clients and gain competitive edge.
5. Increased spending on customer analytics tools to improve customer relationships.

The banking industry is going through a period of rapid change to meet competition, challenges of technology, and the demands of the end users. Clearly technology is a key differentiator in the performance of banks. It doesn't stretch one's imagination to understand that the scale and complexity of banking has undergone tremendous

changes in the last 20 years. From the Indian perspective, the evolving banking paradigm presents unique opportunities and challenges. The reason in India is a country with huge population and the demographic growth of India is such that it is going to become the most populated country very soon. Channel technologies can bring about closer integration between the rural and urban populace.

Conclusion

IT development has undoubtedly brought-in enormous benefits to banks, particularly in terms of productivity increases, cost reduction through labour saving and increased profitability. Consequently, IT development in banks has become more products centric and retail and wholesale IT products have positively influenced productivity and profitability. IT use has increased outputs and reduced costs as both IT capital investments and IT human resources have a positive relationship to productivity. Banks should stay ahead of the game and sustain growth by taking bold decisions to survive and beat competition. The time has come to move towards a customer-centric approach, as customers should be given an opportunity to enjoy their share of benefits stemming from IT development. This would increase banks' competitiveness through differentiation and customer service improvement, reduced transaction costs, better risk avoidance, and maintaining a stable customer base and market share.

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