The IDRBT Foundation Day Lecture 2011

Role of Technology in Development of Banking

by

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It gives me great pleasure to be present here and to deliver the IDRBT Foundation Day Lecture 2011. Being here is a kind of home coming for me. As one who laid the foundation of this institution, I take great pride in the growth achieved by IDRBT. IDRBT is a unique institution which has through its research and product development contributed immensely to the induction and propagation of technology in the banking industry.
Technology by changing the production techniques results in improvement in productivity. History has shown that modern economic growth has been inspired by the rapid and persistent upgradation of technology and scientific knowledge. It is estimated that one-third to one-half of the growth experienced by the industrially advanced countries has come from technological progress. Thus technology has emerged as the principal driving force for long term economic growth. Economic growth results both from slow and steady improvements in technology as well as from “break through” innovations. Break through innovations are, however, unpredictable and such innovations when they come up
change the direction of the entire industrial structure.

Technological innovations of a fundamental nature started two centuries ago. They began with the revolution in the textile sector. We are now in the fifth or the sixth wave of innovations and the current technological innovations have ushered in the electronic age. Far reaching changes in computers and communications technology have altered our way of life. It is this change which has also fundamentally altered the way in which banking is being performed. The basic functions of banking have remained the same but the way in which banking services are provided has altered.
India is somewhat of a late comer to the technology revolution in banking. The process of computerization of the banking industry in India started in the mid-1980s. It had a difficult beginning. Unfortunately, the trade unions were opposed to it. They did not at that stage fully grasp the potential of technology. In those early days, we had to cripple the memory of computers and even called them as ‘advanced ledger posting machines’. Fortunately, there has been a significant change in attitude and the Indian banking industry is well on the road to using the full potential of computers and communications technology.
Let me take this occasion to trace briefly the evolution of technology adoption in Indian banking.

First, it started off with computerization of a few key functions and departments in principal branches through adoption of what I called earlier, advanced ledger posting machines. These 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
transformed the way banking was done in India both by bankers and customers.

Fifth, with the setting up of IDRBT, three most important technology infrastructures were created and these were INFINIT in 1999, the implementation of PKI based electronic data transfer and the Structured Financial Messaging System (SFMS) which facilitated the development of secured payment system practice in India.

Sixth, a slew of innovations in newer delivery channels like internet banking, mobile banking and pre-paid cards
issued by non-banking entities emerged. India also became a member of the Basle Committee of Payment Settlement systems.

The introduction of these various technology products has had a beneficial impact on both banks and customers. For the customers, the important benefits are Anywhere banking, Internet banking, ATM banking and Mobile banking. It has also facilitated the use of secured debit and credit cards. For the banks, the major benefits are centralization of customer information, centralized transaction process,
centralized accounting process, basic MIS reporting and real-time information availability.

The intermediation cost of the scheduled commercial banks has come down significantly from 2.59 per cent in 1991-92 to 1.71 per cent in 2010-11. The cost-income ratio has declined from 55.3 per cent in 1999-2000 to 45.21 per cent in 2010-11. The business per employee as well as the business per branch have increased several fold. Among the several factors which have contributed to these changes, technology ranks high.
IT has had a positive impact on the payment and settlement systems of the country. With some path-breaking initiatives having been implemented in this area, the “electronification” of payment system has become the hallmark of the decade that has gone by. Electronics based payments are superior to paper system in terms of traceability, efficiency, speed and safety. The introduction of the Real Time Gross Settlement (RTGS) system has resulted in not only compliance with international standards but also paved the way for risk-free fund transfers settled on a real time basis. The facility for inter-bank funds settlement through RTGS is today available across more than 88,000
branches of banks spanning more than 5,000 centres of the country, a coverage that has been perhaps not witnessed anywhere else in the world. In this context, I must point to the significant contributions made by IDRBT to promoting the electronic payment system in our country. As already noted, at the heart of IT enabled banking is the existence of a safe, reliable and effective communication network and messaging system. In India, such a backbone is being provided by IDRBT through Indian Financial Network-INFINIT-“a one-of-its-kind” initiative for the banking sector. This network, as mentioned earlier, was set up in 1999. It has now incorporated low cost yet reliable technologies in the form of
Multi-Pocket-Label Switch” (MPLS) technology in an effort to offer state-of-the-art network. Safety and security are still challenging problems in this context and I am quite sure that the faculty members of IDRBT will continue to focus on these issues. I must also refer here to the setting up of the National Financial Switch (NFS) for interconnecting ATMS by IDRBT. The system which is based on indigenous effort was well received and the Reserve Bank has decided to spin it off from IDRBT and hand it over to the National Payments Corporation of India (NPCI) which is continuing to maintain it on the basis of the benchmarks set up by IDRBT. Despite the progress in electronic payment system, the paper based instruments are
still in vogue, although the total value of the paper based clearing has been steadily declining, 59 per cent in volume of transactions and 10 per cent in value terms. This shows the progress which we have to make still.

All of us recognize that Indian banks joined the technology bandwagon rather late in comparison with other major countries. This has, however, been beneficial in one sense, since Indian banks have been able to leap-frog to latest versions of technology. Today one can look back with satisfaction at some of the innovative technology based products and services which banks offer. Techno-banking
has thus come to stay. What is the way forward as far as the use of technology in banking is concerned?

1. Financial inclusion: Technology adoption has enabled the authorities to further the cause of financial inclusion. I was myself privileged to Chair a Committee on the subject a few years ago. Several studies have shown that only a small percentage of the total rural households has access to institutional banking facilities. One of the biggest challenges therefore relates to the extension of the coverage of banking services to the remotest parts of our country and to the most vulnerable sections. Technology provides the scope for
affordable financial inclusion. Harnessing technology holds the key for faster reach even more than the brick and mortar model. The best way offered for inclusive banking would be through twin-routes - mobile banking through a bank-led model and banking correspondent model. While BC could drastically cut the cost by obviating the need to open bank premises, it is technology which is going to give the proverbial last mile connectivity to the untouched segment.

The continuous availability of banking services with reliable and secured banking transactions is at the heart of the problem. I would like to emphasise that technology can and should make significant impact on this important socio-
economic programme. I must, however, admit at this point that the progress of the BC model has not been to the desired extent. It is more to do with the human factor than with technology.

There are today 700 million mobile connections in place. For achieving financial inclusion it may be worthwhile to piggy-back on the mobile telephony platform. Just as ATM/SMART card technology permits a bank customer to authenticate one self and then conduct banking transactions in a secured fashion, it is perhaps worthwhile to consider whether the ubiquitous mobile phone that is already in the
hands of most Indians can be used for authentication and banking transactions in a secured fashion.

2. Enhancing the secured network: I have already made the point that security is at the root of technology centric banking. I have also noted some of the important developments in this area. The advent of low cost and all pervasive communication channels such as internet has made communication more efficient, but not necessarily safe and secure. Today the world is grappling with issues such as computer virus, hacking, etc. It is important that these issues are addressed effectively. Needless to say that IDRBT has an
important role to play here. With the Government planning to implement an E-Payment Gateway for a single point distribution of all the payments, the need for a secured network for transmission of such information becomes essential. IDRBT may explore the possibility of connecting the secured INFINIT with the Government NICNET so that the entire sensitive massive financial transfers take place under a secured environment.

3. Capability of handling large volumes: Financial transactions have increased phenomenally. Does our payment system have the ability to run millions of payments
instructions daily? We need to think in terms of next generation products which could handle any amount of volume with due scalability facilities.

4. Fraud monitoring and prevention: The Reserve Bank has recently come out with the recommendations of a Working Group on Information Security, Electronic Banking, Technology Risk Management and Cyber Frauds. Implementation of the recommendations calls for an assessment of the nature and scope of activities supported by technologies engaged by banks. In this electronic age speed in detecting frauds has become extremely important. The
response has to be with the same blinding speed as the fraud committed. Or else, the fund could vanish in no time.

5. Business Continuity Plan: Technical experts are familiar with the processes to be kept ready for activation in response to any disaster that may strike. With the complexities of modern banking, the BCP is a must for every bank. I must recall at this juncture an incident of a major bank in the country not being able to extend the banking services during the greater part of the day on account of BCP not working fully well. That this problem did not result in a systemic issue is hardly any solace. To put in place an
adequate Business Continuity Plan (BCP) by every bank has become imperative.

Having indicated some of the major areas of concern in the application of banking technology, let me now list a few areas which will facilitate the adoption of technology in banking.

- The first issue relates to data quality and consistency which do not reflect levels of comfort. This needs urgent resolution. It is time that banks and financial institutions look at common data standards and protocols so as to make the information systems truly interoperable and facilitate easy
data flow. Information governance is emerging as a distinct discipline and this deserves much more attention.

- Banks have accumulated lot of IT infrastructure over the years. They should now actively explore consolidation to improve efficiency and minimize costs.

- IT governance is an important component of corporate governance and banks should put in place necessary processes and organizational structures to improve performance as well as compliance.

- Notwithstanding outsourcing, banks should develop in-house IT skills and deepen and broaden the IT management and leadership competencies. Banks have become
increasingly dependent on third party IT service providers for all technology needs, to the extent that in many cases service providers are in control of the banks technology agenda. This is an undesirable development and it is critical that banks develop strong in-house competency on how to frame the technology agenda and then hold IT vendors accountable to deliver to that agenda.

- IT-Business alignment needs special attention to derive better value from IT investments.
• Information is a key operative as well as strategic asset and banks should develop information systems to facilitate free flow of information across the entire organization.

• Technology deployment should be accompanied by process changes to derive enduring benefits.

• Despite large base of mobile phones, mobile banking is yet to pick up momentum. Mobile banking has huge potential and the stakeholders need to collaborate much more proactively for common benefit.

• There has to be a constant update in the industry of the latest that happens on the technology front. Banks should always look ahead in leveraging the ever expanding tech world. Some
of these tools are not only cost effective saving huge capex of the banks but also reach the customers at a very effective cost and on a platform with which the customer is familiar. I hope IDRBT builds a platform for the knowledge dissemination on not just the technology but how to harness it. Exposing Indian banks to global best practices in technology management and vendor management is extremely important.

IDRBT was created as a sequel to the recommendations of the Committee on “Technology Upgradation in the Banking Sector” constituted by the Reserve Bank of India. After a
decade and a half, I had the privilege of leading an Expert Committee which was entrusted with the task of redefining the role of IDRBT. I am happy to know that IDRBT has taken several steps to implement the recommendations of this Committee and this should enable IDRBT to reposition itself as an academic institute with a practical bias. I am also glad to know that IDRBT has enhanced its faculty strength and has established strong links with the banking industry and RBI. Its visibility today is higher and I congratulate Shri Sambamurthy and his team on the excellent initiatives they have taken to enable IDRBT to play a leadership role.
IT offers immense opportunities to significantly improve efficiency and effectiveness of the functioning of banks. IT will be a tool not only to improve the operational efficiency of banks but also to serve customers better which in any way is the ultimate aim and objective of all banks. I am quite sure that IDRBT will play its role in steering banking industry in the direction of choosing the right path of technology adoption.

Let me wish you all success in your future endeavours.