

## Technology in Banks – Responding to the Emerging Challenges<sup>1</sup>

Ladies and gentlemen, a very good morning. A central banker addressing an impressive gathering of technology experts on a topic which is their very own – to say the least, is a formidable task. In the current global financial context, though, I may not be surprised if many central banks, as regulators of banking and other financial institutions get more engaged with the technology aspects of the regulated institutions' operations.

2. It is not hard to miss the role played by greater technological integration in transforming the image of banking as model centric blackboxes, unrecognizable from the traditional brick-and mortar systems. Not surprisingly, the internal audit and financial reporting systems within the banks were not given similar focus probably because effective, real time data analytics requires huge data crunching that involves cost. It may be something to ponder that while a lot of focus is given to using technology to manage client and customer accounts at banks and the trading systems, the same level of sophistication does not extend to internal auditing, accounting and financial reports.

3. In India, the situation of the banks is quite different from the banks overseas particularly in developed markets. Indian banks are not facing huge write downs or losses and are still quite well capitalized. There may be a slowdown in credit but that is more a reflection of the broader economic slowdown-the impact of the real sector on the financial sector. In this context, for India the theme of the seminar, which refers to 'sustaining the growth momentum' is quite apt.

4. Globally, the IT spends of financial institutions are expected to go down drastically in 2009-10. In India, however, this could be an opportune moment for banks to focus on the internal processes and consolidate their IT platforms across functionalities to use technology as an effective strategic tool. It is also an opportunity for the technology companies to gear up to meet the demands of the domestic market for new technology as well as expanding existing technologies.

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5. The use of technology in India has undergone rapid transformation. The last two decades have witnessed a sea change in the nature of services offered by not only banks but also the financial sector and even the Government - all of which have had a positive impact on the customers of these organizations and the general public at large.

### **Technology and Payment Systems Initiatives**

6. Let me dwell briefly now on the various technological and payment systems developmental initiatives undertaken in the Indian banking and financial sector. Though, we are moving from 'brick and mortar' banking concepts to 'virtual' banking concepts gradually in view of IT penetration in every sphere of banking, banking with physical presence is going to stay in India due to the unique nature of the Indian banking and varied Indian demographic structure.

7. Starting from the Rangarajan Committee report in early 1990s which started the process of branch automation in banks, banks have witnessed a lot of changes on the technology front during the last 18 years. The banks in India started from a disparate IT infrastructure in general and moved over to consolidation and virtualization of databases and servers gradually over the years in order to achieve efficiency, cost reduction, improvement in customer services and to address the issues arising from competition from the other market players. Use of technology in a large but judicious way provides relief in the form of more effective work processes, reduced costs of processing and the capability to handle relatively large transaction volumes with remarkable ease. The Core Banking concept to a great extent emerged from this centralisation process and has since received a complete and focused attention from all the banks for its rapid implementation. The banks have also undergone a massive change in terms of improvement in the IT Communication network which has greatly facilitated not only the networking of the internal communication processes but the integration with the external payment systems gateways as well.

8. In regard to the implementation of 'Core Banking' and 'Electronic Banking' banks have made considerable progress in recent years as far as the centralization of customers' accounts are concerned; however, we can also think of making it more useful by expanding the coverage of Core Banking Systems (CBS) and all the essential services / banking products like treasury, Customer Relationship Management (CRM), Corporate Banking, Management Information Systems (MIS), etc. getting seamlessly integrated into the present CBS. The offering of

electronic banking service channels like Internet Banking, Mobile Banking, real time fund transfer, ATM Applications and other forms of upcoming electronic banking channels have become important vehicles of offering banking services in a cost-efficient manner with wide geographical spread; enhancing the banks' reputation and brand building addressing the competitive forces as well.

9. We have also seen the developments in the communication network and messaging system in India as a whole in the form of Indian Financial Network (INFINET), Structured Financial Messaging System (SFMS), VSAT connectivity, cable and leased line connection, fiber optics channels, etc. There have been marked improvements in the Indian payment and settlement systems in the form of popularizing and strengthening of Real Time Gross Settlement (RTGS), Centralised Fund Management System (CFMS), Electronic Clearing System (ECS), National Electronic Fund Transfer (NEFT), Cheque Truncation, National Financial Switch (NFS), developments and initiatives at Clearing Corporation of India Ltd. (CCIL) platform, ATMs, electronic banking channels etc. to name a few.

10 The facility for inter-bank funds settlement through RTGS is available today across more than 53,000 branches of banks spread across the length and breadth of the country. Today while we have settled close to 100,000 transactions in the RTGS, the average is around 60,000 per day. Therefore the volume of transactions per branch is still in single digits. At the same time the country is clearing paper cheques close to 50 lakhs per day, with the so called High Value Clearing clocking large volumes. The high value clearing which settles on T+0 basis was introduced in this country when we did not have any electronic products. Today this clearing entails high levels of operational risk. It is time that we migrate this to electronic mode. RBI would soon be coming out with an approach document in this regard.

11. However, despite the use of electronic methods of payments, the use of cheques will continue. In order to improve efficiency, reduce operational risk and time taken for cheque processing, the Reserve Bank has initiated steps to introduce a Cheque Truncation System (CTS). A pilot project has commenced in the National Capital Region in Delhi where processing volumes have picked up substantially and about 70% of the cheques are being routed through the CTS. We are now expanding the CTS to other centres. Ultimately the whole country would be connected through 6 or 7 Grids. The next grid is planned for Chennai covering the southern centres.

12. RBI set up an exclusive institution called the Institute for Development Research in Banking Technology more popularly known as IDRBT at Hyderabad in 1997, which implemented, in 1999, the Closed User Group network – the INFINET – as mentioned by me earlier. This was aimed at sharing expensive IT resources so as to achieve the economies of scale. One of the notable achievements of the IDRBT has been the implementation of Public Key Infrastructure (PKI)-based electronic data transfer with very high security levels. It also developed a messaging standard called SFMS with security features far superior to even SWIFT which hastened the computerization efforts in the financial sector. Today INFINET has migrated to the latest MPLS technology in an effort to offer state of the art network.

### **Technological Risk Factors**

13. All these technological developments as mentioned earlier have undoubtedly led to greater efficiency and speed which has resulted in enhanced customer satisfaction. At the same it has opened a floodgate of concerns due to the risk factors involved in the implementation. Let me now discuss some of these important risk factors involved in this regard. If we glance across some of the major frauds across countries, it is evident that many institutions and banks have suffered a great deal of loss either due to the deficiencies in the internal control processes of the IT implementation or due to the deficiencies in the software and hardware itself. These frauds were perpetrated usually by a single person by taking advantage of the lax internal control processes, in spite of the technology safeguards put in place to check such deficiencies. It reminds and cautions us of the fact that technology is not an end in itself and at most is a facilitator, to be used optimally and judiciously.

14. Another set of IT risks which are gaining importance these days are related to software and hardware glitches in the technology implementation. To name a few such risks like, ‘Phishing’, ‘SQL Injection’, ‘Advance Fee frauds’, Database and Server Hacking, Network attacks, ‘Denial of Service’ attack, Web Defacing, Cross Site scripting, IP Spoofing, Man-in-the Middle Attacks etc. have resulted in huge losses for the banks and customers across the globe. Particularly in recent times, security experts and the federal government in the US are warning that scam artists are leveraging public concern over the global financial crisis to steal sensitive financial data and spread malicious software.

15. Credit card frauds are also on the rise. Large numbers of customers' accounts and credit card holders' accounts have been compromised in the past resulting in not only financial loss, but also legal risk and reputational loss in the market. These electronic windows irrespective of the usage percentage and pattern have opened a new gate into the banks' Information Systems' components which can be exploited by hackers, inside employees or even ex-employees to name a few. Money Laundering risk through electronic channel and its countering is also a challenging task for the banking and financial system. Though Indian financial system has not been affected to that extent from these risk factors as compared to its counterpart abroad, the strengthening of the electronic banking channel by the banks and systems' participants will greatly assist in banks' and financial institutions' efforts for sustaining and consolidating the business growth and above all maintaining confidence.

### **A Few Organisational Issues**

#### *IS Security, IS Audit and Adoption of International Standards*

16. The Information System (IS) Security issues, Information System Audit and adoption of international standards in the technology domain are the other challenges for the Indian banks today. These have become more pertinent in view of data breach cases in India as well as abroad in recent times. The financial institutions should conduct IS Auditing in such a manner to ensure that Information Systems security policies and standards are enforced in the bank on a 'continuous' basis rather than at the end of the specified cycle or on a spot basis. The failure to do so may result in serious internal control lapses resulting in loss as I had mentioned earlier.

17. The adoption of international standards and industry's best practices in the IT sphere by the financial institutions would certainly result in benefits for them and supplement their efforts for sustaining growth. In this regard, adoption of ISO/IEC 38500 Standard, which is the first international standard for IT governance may help organisations for establishing an efficient and effective framework for IT governance for a better alignment of IT and business goals. The standard provides a single integrated framework that enables the financial institutions to take the full advantages of other standards / frameworks.

#### *Change Management*

18. Another major challenge which Indian banks / financial institutions would encounter apart from the emerging IT Threats is the

‘Change Management’ issue and the shortage of skilled IT personnel in technology development and the Information Systems security and audit area. It is imperative, therefore, that banks adopt standardised methods and procedures for all technological changes in the organisation to bring efficiency and to save the consequent problems that any organisation usually faces due to non-adherence to ‘Change Management’ principles. In this background and especially in the light of shortage of skilled qualified IS Security and Audit personnel at present, the issues like staff selection, staff retention, staff posting, staff rotation, staff screening, etc. have become more relevant today. I would further like to emphasize the fact that the success of any technological initiative is dependent on ‘technology’ factors only to the extent of 50% and the rest is dependent on how the organisation manages the ‘human’ element in it.

### *IT Outsourcing*

19. The ‘outsourcing’ of IT activities in banks is also an area to be looked into closely by the banks. In many countries, frauds or data breach cases leading to legal tangles and reputational loss have been witnessed either due to the ‘loose’ outsourcing contract, deficient internal controls in managing the vendors or complete reliance on the vendors even for critical banking activities support from technical perspective. More prudence and timely corrective actions would benefit the financial institutions in this regard to avoid any functional, financial or reputational repercussions.

### *Business Continuity and Disaster Recovery Management*

20. A robust and time-tested Business Continuity’ and ‘Disaster Recovery’ Management plan has also become a necessity and need of the hour due to work-processes’ dependency on IT. The plan should not only be a ‘good plan’ on paper, but one that can be implemented in real life scenario as well with practical ease. To achieve this, the banks must conduct mock test of their BCP and DRP of their IT logistics, Data Centres, Communication channels at regular intervals in real life scenario and compare the ‘Recovery Time Objective (RTO)’ and ‘Recovery Point Objective (RPO)’ outputs of the mock runs with the expected planned RTO and RPO and self-judge the efficacy of the plan.

### *Technology and Basel II Implementation*

21. The implementation of Basel II with regard to Operational Risk is also an area where banks would like to focus more from the technology point of view. The capturing of the operational loss data and to correctly

assess the capital charge on this account would be a challenging task as the same is very much a data and technology intensive endeavour. The banks may like to put in place an efficient operational risk management system for this purpose from not only the compliance perspective but from the perspective of the benefits that would accrue to the banks in the long run.

#### *Governance and regulatory compliance*

22. To sustain growth and enhance efficiency, Governance and Regulatory Compliance are two issues which appear very critical as the rest of the business and IT activities of the institution emanate from them. A proper handling of the IT Governance issues by synergizing the disparate 'silos' within the organisation would help in creating a robust system internally and provide a solid platform to prosper in the long run.

23. Another important aspect of regulatory compliance is the reporting returns to the various wings of the regulator. In this regard implementation of XBRL (Extensible Business Reporting Language) in the banking and financial system is a welcome sign as it will not only help in regulatory compliance but also act as an effective tool for Management Information System (MIS) within the organisation. In general, XBRL reduces the cost of analyzing and reporting business information, helps in effective MIS and increases the speed and efficiency of business decisions.

24. XBRL as we all know is a standard based electronic format for communication of business and financial data which provides a lot of benefits in the preparation, analysis and communication of business information in different formats; extraction and automatic exchange of the financial data; and enhancing the usability and transparency of financial information reported under existing accounting standards. This is helpful in preparation of not only financial statements like balance sheet, profit and loss accounts, flow of funds or financial disclosures, etc. but includes any type of financial reporting, like Basel II system, statutory reporting, regulatory or supervisory reporting systems.

#### **Future Prospects and Way Forward**

25. The downturn in the BFSI sector overseas may prove to be an advantage for the Indian financial system as availability of highly skilled people at a reasonable cost in view of employment cuts abroad may propel India for high speed growth in all the sectors. The IT-BPO industry is expected to grow at a reasonable rate of around 16 per cent in India. This opportunity may churn out another set of dynamic

entrepreneurs and intrapreneurs (term coined by Gifford Pinchot) who would lead the march for business transformation and provide opportunities for sustained growth of the financial system.

26. For Indian banks and financial institutions in India the issue is not of pruning IT programs but making these more cost effective and revenue generating. India's value proposition in the financial sector I believe will continue to be strong and even in the current context IT may provide support in the re-structuring of the work-processes, products and may be the institution itself, thereby fulfilling the growth sustenance objectives of the institutions.

27. This period also provide excellent opportunities and avenues for the banks and the financial institutions to reach out to the people in the rural and semi-urban areas and bring them under the fold of our banking and financial system. The percentage of no-frills account holders and coverage of people under the banking umbrella is still miniscule. This prospect in fact throws a lot of opportunities for the technology driven initiatives to expand the coverage of the Indian banking and financial system. The use of technology like Smart card, mobile ATMs, e-Chowpals, coverage of post-offices under electronic payments network in far flung areas, etc. in providing financial services to the people holds a tremendous potential for the business growth of the financial institutions on one hand and the inclusive growth of India on the other.

28. Another opportunity lies in the form of integration of the Indian banking and financial system with the Government's e-Governance initiatives. The electronic benefits in this regard would be passed on to the beneficiaries directly thereby preventing the leakage of the funds provided under various Government's schemes like NREGA payments, etc. for the upliftment of the people. The collective efforts of the Government, banks, financial institutions and the IT firms to provide innovative solutions for an inclusive growth of the Indian economy will certainly go a long way not only for the sustained growth of the financial system but the Indian economy as a whole.

29. The role of technology providers becomes critical in enabling the users to use technology as a strategic tool in their business pursuits. I would like to mention a few fundamental tenets in regard to expectations from the technology providers.

- The first relates to affordability. In times where margins of the user organizations are under pressure, affordability assumes significance. We have to recognize that unless there is a

perceptible value addition to the user organization, investment in any area, including technology, will be looked at with a skeptical mind set.

- The second relates to availability. IT based operations have jerked the world out of a slumber to a 24 by 7 operational cycle for most businesses, If this has to be sustained, then technology providers will also have to ensure uninterrupted availability. While I am aware that this is something that is currently also being provided for by most technology service providers, the need for this to become a way of operations of these entities – at affordable costs for customers – gains significance. With the death of geographical distances and the existence of safe and effective network based communication, juxtaposed with the trend of most user organizations migrating to off-site support, this aspect assumes criticality.
- Closely related to the first two is reliability. With the margins of IT companies coming under pressure, it is essential that Reliability of support provisions to customers does not get impacted in any way. I am fully aware that Indian Technology Service providers have always been providing services with a high level of operational reliability, but now is the time to redeem our efforts in this direction if sustenance with high growth has to continue for the technology services sector of the economy.
- The fourth pertains to adaptability which is something Indian companies have always excelled in. If this is translated as the business objectives of technology service providers as well, then it would be easy for businesses to realign to changing global scenarios and tailor make their offerings to suit the changing requirements of the target sections which they service.
- Finally, convenience. Today, most users look for operational comfort and convenience of operations in a highly challenging environment . The most important requirement relates to looking at the convenience of customers as the most important gospel for survival of the organization and has to be a mantra which has to percolate to all the employees in the organisation.

30. To conclude, RBI's stance has always been to progressively develop the Indian banking and financial system through various measures and focus on technology driven initiatives for an inclusive growth. I would like to take this opportunity to urge upon all the banks, financial institutions and the technology solution providers to gear up to face the new challenges facing the financial system, some of which I shared with you today. I fully understand that this is an on-going process

and the banks and financial institutions will continue to address these challenges in right earnest for the sustained growth of the financial system as a whole.

31. I would like to thank the organizers once again for inviting me here to BANKing summit 2009 to share some of my views on the theme. I wish the Summit great success.

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