Financial Sector Technology Vision

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DEPARTMENT OF INFORMATION TECHNOLOGY
TECHNOLOGY
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Chapter 1 Introduction

The Mission Statement and the Corporate Objective relating to the Financial Sector Technology Vision continue to be as follows:

Mission Statement

<<< I T FOR EFFICIENCY AND EXCELLENCE >>>

Corporate Objective:

“Enabling financial sector to leverage on I T for better customer service, improved housekeeping and overall systemic efficiency”

1.1 Information Technology (IT) continues to be the single largest facilitating force behind the successful transformation of transactions and analytical processing of banking business in the country. Developments which have taken place during the last few years all have IT as the pivotal centre-point. Since the publication of the Financial Sector Technology (FST) Vision in July, 2005, there have been significant changes in the banking sector of the country, as far as IT implementation is concerned. Some of the major developments which have taken place since then are as follows:

1.1.1 The introduction of Core Banking Systems (CBS) which was at its nascent stages has become full blown and all banks are at varying stages of implementation of Core Banking Systems in their branches.

1.1.2 The introduction of Core Banking has resulted - as a natural offshoot - in the computerisation and networking of branches of banks in a larger scale since these are essential pre-requisites for the implementation of Core Banking.

1.1.3 A few of the older banks have also implemented Core Banking fully across all their branches

1.1.4 There has been an explosive growth in the use of payment and settlement systems for funds transfers, with a substantial value of funds getting settled using electronic means, implying the commencement of a gradual shift away from traditional paper based transaction flows

1.1.5 One of the major developments during the period was the introduction of new delivery channels for customers, by banks. Internet Banking, Mobile Banking, Mobile Automated Teller Machines (ATMs), multi-functional ATMs, shared ATM services, large scale usage of Real Time Gross Settlement (RTGS) for quick, immediate funds transfer and smart card based cards as part of initiatives aimed at Financial Inclusion are some of the landmark

developments aimed at improving customer service facilitation using innovative systems.

1.2 Within the Reserve Bank too, there have been many developments using IT which have an impact on the financial sector of the country. The stabilisation of the RTGS system has resulted in the entire approach to liquidity management by banks undergoing a sea-change. The introduction of the Online Tax Accounting System (OLTAS) for tax related payments for the Central Board of Direct Taxes and the Electronic Accounting System In Excise and Service Tax for the Central Board of Excise and Customs have revolutionised the method of tax payment to the Government. Filing of returns by banks through the Online Line Return Filing System (ORFS) which has commenced is poised to make the process of submission of data to the Reserve Bank less cumbersome.

1.3 As far as the environment for IT enabled services is concerned, there have been welcome developments too. The availability of multiple service providers for network based communication has resulted in varied options for users and the quality of service has also improved. This has prompted the migration from Closed User Group Networks to use of public networks, albeit with adequate safeguards. IT systems have also shown substantial strides in terms of later versions of systems with more resilient and better features.

1.4 All these have resulted in the need for a review of the FST Vision, so as to ensure that developments in technology are harnessed optimally for the benefit of the banking sector in particular and the financial sector of the country in general.

Chapter 2 Preview

2.1 IT usage by banks in India has come of age. The financial sector of the country has become more IT savvy and the Banking sector in particular is one of the largest users of IT and IT enabled services.

2.2 The Reserve Bank too has enhanced the usage of IT as a tool for better performance and overall systemic efficiency. Some of the major developments in this regard (following the distribution pattern indicated in the Vision Document of 2005) are detailed below:

2.2.1 ***IT for regulation and Supervision****:*

2.2.1.1 Enhancement of the features available under the Centralised Data Base Management System (CDBMS) - the Data Warehouse of the Reserve Bank, by providing for access to general users as well, and accessible through the Internet, called the CDBMSi

2.2.1.2 Facilitating banks in implementing systems which would provide for Anti-Money Laundering (AML)

2.2.1.3 Introduction of the On-Line Return Filing System, which as a sub-set of the CDBMS, will act as a one-stop shop for banks to submit all the regulatory returns. This system which has commenced in a small way is being expanded to cover all the returns furnished by commercial banks to the Reserve Bank

2.2.1.4 Commencement of a pilot' Enterprise Wide Knowledge Management System (EKMS) which would provide organic linkages across various sets of information available across different functional units of the Reserve Bank which could be used for better analysis and obtaining a holistic picture across different segments of the markets

2.2.1.5 Implementation of off site surveillance systems across all the regulatory departments and covering almost all regulated entities

2.2.1.6 Large scale impetus for IT enabled Financial Inclusion with a pilot project commencing in the North East and Andhra Pradesh in the

South have increased the scope and coverage of banking to reach hitherto unbanked centres

2.2.1.7 Implementation of an On-line Complaint Tracking System, to provide a facility for easy electronic access to the Banking Ombudsmen using web based access to provide for an online monitoring system for complaints received by the Banking Ombudsmen. The software, developed at the request of the Ministry of Finance, enables the office of the Banking Ombudsmen to track disposal of complaints; access is also available to the Rural Planning and Credit Department (RPCD) and the Ministry of Finance for monitoring the position on a real time basis

2.2.2 IT and IDRBT

2.2.2.1 The Institute for Development and Research in Banking Technology (IDRBT), Hyderabad has been providing network service facilities in the form of the Indian Financial Network (INFINET) apart from functioning as the Certification Authority (CA) under the Information Technology Act, 2000. These functions have been beneficial to member banks

2.2.2.2 The use of Structured Financial Messaging System (SFMS) which is akin to S.W.I.F.T. for exchange of financial messages across member banks has become the widely used inter-bank messaging system.

2.2.2.3 Common inter-bank applications such as the RTGS use SFMS (or SFMS like) message formats, which makes inter-operability and STP an easy task

2.2.2.4 The inter-city terrestrial communication links have been upgraded to take care of increasing processing requirements

2.2.2.5 The IDRBT physically hosts the Secured Web Site of the Reserve Bank which enable users to have electronic access to the Reserve Bank’s offerings using the Internet

2.2.2.6 The move to use Multi Protocol Layer Switching (MPLS) technology for the INFINET so as to take advantage of lesser costs and widely available technologies has begun at IDRBT which would usher in more benefits to users

2.2.2.7 Preliminary work to hive off the network service related functions has commenced with IDRBT poised to concentrate mainly on research related activities

2.2.3 ***IT for the financial sector***

2.2.3.1 In a manner similar to the banking sector, IT facilitation by the Reserve Bank for the financial sector as a whole has resulted in many improvements, the major among which are listed below:

2.2.3.1.1 As far as the markets are concerned, the Negotiated Dealing System (NDS) which has been in use for many years now, has been enhanced to provide for changing market and regulatory requirements.

2.2.3.1.2 There has been a migration from a Screen based trading system for Government Securities to an Order Matching System so as to result in better price discovery and more transparency in the market related transactions in Government securities.

2.2.3.1.3 The establishment of the Clearing Corporation of India Ltd., (CCIL) as a fully IT enabled entity providing fore electronic transaction processing as well as reporting has enabled the market to grow in depth and coverage as well. CCIL also functions as the central counter-party which reduces risks arising out of Securities Settlement Systems.

2.2.3.1.4 In order to have better governance and to segregate clearly the roles of an overseer and a system provider, hiving off of the major NDS systems to the CCIL has commenced with the first system - the NDS-OM (Order Matching) System being implemented by the CCIL; migration of other systems to the CCIL are at varied stages of implementation. Treasury Bill auctions are now conducted in the CCIL system.

2.2.3.1.5 As part of the facilities available under the RTGS, two main services stand out prominently for the use of the financial sector, viz.,:

2.2.3.1.5.1 Use of credit transfer based RTGS transactions by brokers, constituents etc. pertaining to the funds leg of secondary market transactions

2.2.3.1.5.2 Use of the Multi-Lateral Net Settlement Batch facility for effecting the settlements arrived at by various clearing systems (such as the Stock Exchanges), through the RTGS mode

2.2.3.1.6 Pilot projects entailing the use of Multi Application Smart cards have not only yielded satisfactory results; their usage for Financial Inclusion has opened up new vistas for their wide spread use across the country.

2.2.4 *IT for Government related functions*

2.2.4.1 IT based Government related accounting operations have received a substantial fillip and the following are the some of the landmarks achieved in this regard:

2.2.4.1.1 Computerisation of the branches of banks handling Government business - only 16 branches out of more than 6000 branches are yet to be computerized

2.2.4.1.2 The introduction of Secured Web site for enabling users of the Central and State Governments to access the RBI's secured web site through the Internet and obtain details relating to the balance position in respect of their respective accounts, has helped a great deal in better monitoring of the funds position by Governments

2.2.4.1.3 IT has enabled the introduction of the 'Online Tax Accounting System (OLTAS) and the Electronic Accounting System In Excise and Service Tax which has greatly facilitated the Government in quicker receipt and accounting of tax and duty payments, apart from enabling tax payers with easier, less cumbersome processes

3.1 Although the Financial Sector Technology (FST) Vision Document of 2005 provided a broad outline of the direction to be followed in the implementation of IT based initiatives, there were certain specific activities which were envisaged to be completed during the currency of the document (i.e. 2005-2008).

3.2 A broad review of the goal sets and the current status indicate that most of the targets set forth have either been achieved or are at varied stages of implementation. This would indicate that the basic approaches of the FST Vision Document were reflective of trends in the IT sector and match the business objectives of the constituents of the financial sector as well.

3.3 Most of the IT backed initiatives of the Reserve Bank and the innovations in Payment and Settlement Systems - which have IT as an integral and substantial component - follow the path set out in the FST Vision document.

3.4 The details in respect of these aspects are as outlined in the paragraphs to follow.

3.4.1 Technology and Technology related aspects:

3.4.1.1 The trend of computing power increasing by leaps and storage capacities growing at phenomenal rates have resulted in users migrating back to centralisation. Data Processing Centres (DPCs) (where all computer based processing was performed) which were the characteristic feature of the late eighties of the twentieth century changed over to localised operations and the current trend is to centralise processing capabilities in Data Centres, again. The Reserve Bank, too has adopted this approach for its own operational requirements, in a manner similar to other banks in the country.

3.4.1.2 One of the major developments in technology was the migration witnessed towards more open and less proprietary systems. In this area too, commercial users and businesses cannot depend on freeware and therefore require paid, support-based services. Following this trend, some of academically oriented operating system technologies such as Linux have metamorphosised into support based systems which are gaining ground.

3.4.1.3 Availability of technically skilled resources is another factor which has a significant impact on the financial sector. With IT not being the core competency of such organisations, the trend to outsourcing non-core functions has emerged as the trend witnessed the world over. The full benefits of outsourcing in the Indian context have not yet been clearly proven and a mix of internal expertise clubbed with judicious outsourcing seems to be emerging as the optimal approach for central banks world over.

3.4.1.4 The IT systems of central banks generally do not have parallels in many countries and IT solution providers generally do not perceive value from such systems. This results in such systems to be developed from the base level entailing higher costs, lesser domain knowledge amongst the IT service providers and the consequent delays in implementation.

3.4.1.5 As far as commercial banks in the country is concerned, the position is slightly different with most standardised off-the-shelf solutions (especially for Core Banking) not exactly meeting the requirements of Indian Banking which has not only a large pervasive branch network but also specific tailored requirements to meet the requirements of the common person of the country.

3.4.1.6 The large scale spread of mobile telephony has opened up new vistas for banking in the form of mobile banking and the potential in this new sphere is enormous; adequate steps to ensure safety and security in a mobile based computing / communicating environment have to, however, be made.

3.4.2 *Attitudinal and HR related Issues:*

3.4.2.1 The resistance to computerization which was witnessed in the Banking sector has vanished many years ago, but resistance by customers to changed modes of operations has not yet been conquered. Today, electronic funds transfers are only slowly gaining ground and is looked upon with some hesitation; acceptance of electronic processing modes is yet to make great in roads even in the Government and the advantages of ‘anywhere’ and ‘anytime’ banking have not really percolated to the banking masses of the country.

3.4.2.2 One major handicap in this entire chain is the absence of (or inadequate) Business process Re-engineering consequent upon computerisation. Thus most efforts have turned out to be mere mechanisation of functions with no great value addition to either the process owner or the user.

3.4.2.3 IT related skill sets are not readily available in the banking sector and certain sections of banks have to contend with challenges relating to the retention of such skilled manpower. Coupled with this is the fact that there has been addition of new types of businesses without either changes in work processes or adequate manpower resulting in a negative impact on service delivery offerings.

3.4.2.4 HR still continues to follow the traditional approaches in most of the banks and unless changes occur in the mindset of all concerned, significant internal improvements would be hard to come by.

3.4.3 *Technology obsolescence and replacement:*

3.4.3.1 While managing technology implementation is a major activity which has to be done with reasonable care, managing the rapid developments taking place in technology is a bigger challenge. The high rates of technological obsolescence and the consequent need for periodical upgradation have had an impact on the achievement of some of the milestones forming part of the FST Vision, 2005.

3.4.3.2 While the need to take care of hardware related technological obsolescence has not greatly impacted the progress achieved, there have been issues related software obsolescence which had to be tackled.

3.4.3.3 Some of the activities which had to be taken up included the need to migrate the application software systems from the then current versions of Operating Systems and Data base to the later versions which required time and efforts.

3.4.3.4 Replacement costs do have a role to play in the final decision taken by organisations. Costs arising our of technological obsolescence tend to follow patterns which may not have been foreseen by the user entities resulting in the need to re-draw not only the implementation plans but budgetary requirements as well.

3.4.3.5 Yet another aspect which has witnessed an impact is the need to ensure that the banking sector as a whole gets service support across common platform levels. It may not be feasible (or possible either) to ensure that all banks in the country migrate to the latest technology levels at all points of time. The Reserve Bank, therefore, reviews the impact of technological developments, the value benefits arising out of improvements juxtaposed with the costs involved in migration / acquisition of new systems etc., and provides solutions which are optimal fits for the banking system as a whole.

3.4.4 *Outsourcing related challenges*

3.4.4.1 Although outsourcing has come to stay and has many advantages, the challenges arising out of outsourcing need to be tackled well.

3.4.4.2 One of the main challenge relating to outsourcing pertains to the levels of accountability and responsibility of the users vis-à-vis the outsourced teams. The responsibility of ownership still rests with the business process owner who has to ensure that outsourcing does not in any way result in abdication of the powers and responsibilities.

3.4.4.3 Many IT related tasks in banks have been outsourced, including hosting critical IT systems from locations which are not those of the banks concerned. While such approaches may have points of advantage to the respective banks, the activity which is outsourced needs to be monitored closely and any aberrations need to be set right with dexterity.

3.4.4.4 While outsourcing as a task has become an acceptable norm, the introduction of outsourcing in any sphere of activity requires relatively a longer time period in the first instance; this has been observed in the course of implementation of the plans outlined in the FST Vision document as well.

3.5 All the above factors have resulted in changes to some of the time frames originally set as part of the measures aimed at achieving the objectives of the FST Vision, 2005.

Chapter 4 Vision 2008-2010

4.1 The vision for the ensuing three year period commencing from 2008 holds great scope for innovation and differentiation for the financial sector.

4.2 One of the basic premises for this period is that IT would continue to be the predominant factor acting as the main catalyst in the forces of change.

4.3 Network based computing would be in vogue and consequently, centralisation of certain systems, databases etc., would be the order of the day

4.4 Core Banking Systems would have stabilised well and all banks would have migrated to a large portion of their branch operations being conducted using Core Banking Systems

4.5 Sharing of costly resources would be the norm and this would work positively for the benefit of the banking system as a whole

4.6 The Reserve Bank which has played a substantial developmental role in ushering in Technology based Banking in the initial period and for large scale computerisation thereafter, would gradually move away from its developmental role and take a participative role. This would be feasible since the financial sector has attained the level of maturity required for this changed focus

4.7 Work would also be taken up for introduction of Extensible Markup Language (XML) based reporting by banks to the Reserve Bank with impetus being given to XBRL based transaction flows, for which a Committee has been constituted under the Chairmanship of Shri V Leeladhar, Deputy Governor.

4.8 As a move aimed at better Governance, one of the major changes planned would be that the Reserve Bank would not perform the dual role of a service provider and a regulator. This would be achieved by hiving off of service delivery functions wherever feasible.

4.9 Based on the above, the following are some of the specific components of the plans for 2008-2010:

4.9.1 Completion of the implementation of Core Banking Systems by banks

4.9.2 Integrating the Core Banking Systems with the common interbank payment systems offered by the Reserve Bank - such as the NEFT, RTGS etc., to facilitate ‘Straight Through Processing (STP) ’ modes

4.9.3 Approach towards centralisation so that banks and financial institutions can benefit in terms of facilities such as Customer Relationship Management (CRM), Customer Profiling and Differentiation and for improved customer service

4.9.4 As measures aimed at enhancing the payment and settlement systems of the country, the recommendations of the Working Group on Electronification of Payments would be implemented on time bound basis.

4.9.5 Need for effective and fail safe Business Continuity Plans by ensuring adequate Disaster Recovery Systems and the regular, periodical testing of critical systems

4.9.6 With IT becoming deeply ingrained in the normal processing systems of banks, IS Audit gains greater importance. IS Audit would be a regular function of the internal processes of Inspection and Concurrent Audit in banks as also of external / independent audit. To this end, tools and technologies such as COBIT and conformity to internationally accepted standards such as ISO 27001 would be made use of

4.9.7 The role of technology service providers and intermediaries would gain greater significance in the context of increased outsourcing; for the banks and financial institutions, the complexities in handling in vendor management as part of outsourcing need to be addressed so as to ensure the risks arising out outsourcing are minimised

4.9.8 A crucial activity which needs to be completed in a time bound manner relates to the IT related aspects pertaining to conformity to the BASEL II requirements by banks

4.9.9 The role of the IDRBT as a pure educational and research oriented entity would get clearly defined and the service functions currently handled by the Institute would be taken care of by the new entity which would have to ensure that these service offerings are made available to users at competitive rates and are managed in a professional manner.

4.9.10 For the corporate customer and financial institutions, SFMS would be made available through the Internet as well so that this could be used as a facility for the transmission of financial messages in a secure and safe manner.

4.9.11 Inter-linkage of SFMS and S.W.I.F.T. would be achieved so as to provide for STP based message transfers between the SWIFT gateway and the respective bank / branch in thecountry.

4.9.12 The use of mobile means of communications for banking related transactions in general and payment services in particular would assume greater importance. To this end, efforts would be channeled to provide for standards for such systems, best practices to be followed, and suitable regulatory / oversight framework provided for.

4.9.13 The Reserve Bank would also be implementing its own Core Banking System for the benefit of its customers. This would provide for 'Anywhere Access' for the constituents of the DAD, PAD and PDO. As far as possible, electronic based transactions processing using an STP based process would be provided for.

4.9.14 The Integrated Computerised Currency Operations and Management System (ICCOMS), which is being rolled out to all locations would become the means for effective information collation in respect of currency notes movement in the country, which would ultimately result in better currency management for the country as a whole.

4.9.15 The processing of Government related transactions is also envisaged to undergo substantial changes after the acceptance of electronic modes of data and / or funds movement is accepted by the Government. This, coupled with the impending introduction of Cheque Truncation, would result in changes in the processing systems and cycles which will be facilitated by IT based systems, wherever feasible.

Chapter 5 Conclusions and Way Forward

5.1 IT usage by banks would continue to exist in substantial scales. The Reserve Bank would also be leveraging on the facilities available through IT for improved functioning of the central bank, commercial banks and the financial sector as a whole.

5.2 The broad outlines given in this Vision document would form the basis for the initiatives to be taken by the Reserve Bank during the period of this plan document.

5.3 The Reserve Bank would also be providing detailed guidelines and instructions, wherever necessary so as to ensure that the constituents in the chain are fully aware of the expectations and can also plan their own initiatives in a manner so as to match the overall road map laid down by the Reserve Bank for the financial sector as a whole.

5.4 This document would be subject to regular, periodical reviews so that changes in the environment and the IT industry could be recognised on time and incorporated for appropriate action.

5.5 Although the indications made in this document apply for the medium term, the broad approaches indicated shall be the basis for further initiatives including those which would have a long term effect; it shall be also ensured that the gradual transition from the medium term to a longer period is achieved as time progresses.

5.6 All these would ultimately result in improved customer service, better house keeping and overall systemic efficiency.