# IT and the Banking Sector*

Ladies and Gentlemen,

I am glad to be amidst you on this important occasion which is the culmination of a joint initiative undertaken by the Indian Banks' Association and the National Association of Software and Service Companies (NASSCOM) to discuss issues surrounding IT for banking and other financial institutions. I congratulate both the IBA and the NASSCOM on their choice of the theme for the Conference, which in my view is critical to the growth of the industry. I believe that IT revolution in the banking industry will help to cope with the explosive growth in the number of transactions and to provide improved customer service. In the process, decision-making in banks would get immensely facilitated.

We have been witnessing since about the early eighties the phenomenon of widespread use of computers and communication technology in most of the industrialised and emerging market economies. This has resulted in faster funds movement across nations and borders. Globalisation of economies and financial liberalisation within the economies have opened new opportunities of growth for techno-savvy institutions, while for the others these have resulted in shrinkage of revenues. The use of IT in the banking industry in our country has however been somewhat limited and has, as a result, restricted our presence in international operations. Even in critical spheres such as those involving funds transfer, and MIS based decision making, there has been little evidence of proactive movement towards wholesale computerisation.

The question to ask is: why is it so in India when we have such a large reservoir of human capital trained and skilled in Information Technology, and when we are aware of the fact that a number of countries have developed their financial sector through an extensive use of IT as the medium of growth? It is only with the growing recognition of the need for having in place financial reforms, has the interest in IT application in the banking sector in India increased. Perhaps the Year 2000 problem too has in a way contributed to the growing technology adaptations in the banks. The sharp growth of computer use in new consumer goods of durable nature has also given rise to the need for use of computers in the services sector as well. Banking industry as a service provider cannot naturally lag behind in this movement toward the new techno-age.

Computerisation in Banks

To say that banks in future cannot survive without the support of Information Technology is merely stating the obvious. The point to ponder over is whether the industry is now poised for the challenges that arise as a result. From all indications, banks seem to be prepared to exploit the opportunities that globalisation and financial liberalisation provide.

In this context, let me refer to the environment in which banks are operating in India, and to the compulsions that work to make computerisation in banks an imperative. Computerisation of branch operations, Controlling Offices and the Head Offices has been going apace particularly sharply in recent times since that is the only way by which senior managements in banks can gain information on the size of operations on a daily basis. The banking industry is clearly cognisant of the imperatives of financial liberalisation and has therefore attempted to computerise branches that are located in commercially important centres across the country and account for over 65 per cent of banking business of the respective banks in terms of value. In terms of numbers, there are 65,300 PCs and nodes in about 3,800 fully

computerised branches across the country. There are an additional 14,000 PCs in the Regional offices and Head Offices of banks, along with 2745 LAN systems. Banks have also installed 17 mainframes, 5 Super minis, and 803 mini systems.

The large functional and geographical spread of banks has led to a sharp growth in the number of accounts and in the areas of operation of banks. This has necessitated switchover from hard cash to paper based instruments. This has been facilitated with India adopting MICR clearing at the four metropolitan cities in the second half of the eighties. Now MICR clearing is operational at another ten cities; these are set up and operated by Public Sector banks. Efforts are on to extend the MICR technology to another six centres by the end of this year.

Computerisation of Service branch operations, as you are aware of, serves as a vital fulcrum point for all clearing operations. All paper based payment instruments whether presented by the bank in clearing or drawn on it, are routed through the Service branch, where the relevant accounting entries are passed for inter-branch reconciliation. The average daily volume of cheques processed in clearing operations in the four metropolitan cities has been staggeringly high: during 1998 it was 17.98 lakhs, with daily average value of Rs.2,297 crores. Banks have had to therefore computerise the operations of nearly 90 per cent of the service branches. Further, resort to Table Top Reader Encoders – 822 of them currently, is being made by the Service branches to ensure accuracy in encoding the amounts on the MICR instruments. Use of this technology has contributed to the reduction in the reconciliation problems in the clearing operations.

The development and use of communication networks has also helped the banking industry to gain in terms of improved bank services. First we started with BANKNET network, a leased line terrestrial network connecting seven major cities in the country viz., Mumbai, Delhi, Calcutta, Chennai, Hyderabad, Bangalore and Nagpur. RBINet, a communication software, uses the BANKNET infrastructure for providing the facility of message and file transfer between branches of banks and across banks. Another significant milestone in this area is the operationalisation of the Shared Payment Network System (SPNS) of ATMs of the Indian Banks Association in Mumbai. The Network, operational since February 1997, provides round the year electronic banking services to the customers of twenty eight member banks. As on June 30, 1999, the network in Mumbai is operational with 101 ATMs of 28 member banks with a card base of 90,000 customers. It is expected that as volumes increase, the number of ATMs will increase and will spread to other commercially important centres.

As all of you know, a landmark development is the setting up of the INFINET, Indian Financial Network – a Wide Area Satellite based network using VSAT technology in June, 1999 at the Institute for Development and Research in Banking Technology, Hyderabad. The INFINET is expected to interconnect 433 branches of banks in the first phase, given the limited transponder capacity at present. As additional transponder space is made available, the network connectivity of 5000 branches would be rendered possible. The operationalisation of the INFINET is a milestone in that the critical inter-bank transactions could be conducted on it in future. In addition, around ten banks are already using the VSAT networks of third party service providers for various applications such as cheque collection advices, e-mail and some MIS related applications.

Banks and financial institutions in India are members of SWIFT - Society for Worldwide Interbank Financial Telecommunication Network. SWIFT is used for the transmission and

receipt of all international financial messages by the member banks and financial institutions in the country. We have 81 users of SWIFT in India with 568 branches connected to the SWIFT Computer Based Terminals of the Users.

Other important developments in the payments area have a bearing on the speed of computerisation in banks. Electronic payment products such as Electronic Clearing Service (Credit and Debit) are becoming increasingly popular with corporates. The Reserve Bank responding to the needs of business entities has been offering ECS products. Electronic Clearing Service (Credit) is available at fifteen centres where the Reserve Bank has its offices, in addition to Pune where the service is being offered by State Bank of India. The number of transactions under ECS Credit has increased from 2.3 million in 1997 to 4.3 million as on December 31, 1998. The number of corporate institutions availing the ECS Credit service has increased from 69 in 1997-98 to 88 in 1998-99. The scope for widening its coverage further seems to be very substantial. Electronic Clearing Service (Debit) is available at the four metropolitan cities. A pilot project on Retail Electronic Funds Transfer on a T+1 basis is also made operational at the four metropolitan cities.

Future Perspectives

Given the infrastructure and level of computerisation in the industry, it is clear that banks in future are going to be modern with interconnectivities facilitated by emerging technologies. In such a context, there is no other option left for banks than to evolve a strategic vision that builds over the present technology base. Besides, the compulsions of law will drive banks to computerise over seventy per cent of the total banking business in the country by January 2001. The Central Vigilance Commissioner's Notification on the subject will help banks to improve their internal vigilance administration.

It is interesting as well as important to note that in order to minimise frauds, the Central Vigilance Commissioner (CVC) has directed all banks to compulsorily offer Electronic Clearing Services (ECS) to their customers. The communication backbone for the ECS service would be provided by the INFINET network. ECS services will ensure that customers get the credit on the notified date. This will lead to significant improvements in systemic efficiency, customer service, as also reduce frauds (for example – the fraudulent encashment of dividend / interest warrants). Further, extensive computerisation would lead to better resource management, and substantially reduce inter-branch reconciliation entries especially of those related to clearing and funds transfers. E-commerce will add new dimensions to information highway and thus lead to higher business volumes, efficiency and profitability.

One of the major issues plaguing the banking industry is the lack of standardisation. For the payment system reform to take-off successfully, the standardisation of operating systems, systems software and application software throughout the banking industry is a necessary condition which may have to be pursued.

This issue was discussed in-depth by the Committee on Technology Upgradation in the Banking Sector, set up by the Reserve Bank of India. The Committee has recommended the need for standards in various areas apart from highlighting the need for an appropriate institutional arrangement for key management and authentication by way of a certification agency. The Report also recommended adoption of the widely used cryptography procedures to prevent data tampering during transmission. This should be implemented at the application level supplementing the security already provided at the network level, in view of the critical nature of financial message transfer over communication networks.

We are addressing this issue by first standardising our message formats in tune with accepted international standards. A Working Group on the Design of Message Formats has been formed for this purpose. The Group has finished phase one of its activity. Message formats for applications such as Customer Payments and Cheques, Financial Institution Transfers, Treasury Markets, Collections and Cash Letters, Securities Markets, Documentary Credits and Guarantees, Cash Management and Customer Status and Common Group Messages have already been finalised. The work of designing the message formats pertaining to Government Account Transactions, Currency Chest Transfer, and some segments of Government Securities Transactions will be completed in phase two by the Working Group. In addition, the RBI has also constituted a few sub-groups for standardisation of different information technology components like networking products and system software. These measures have been initiated as the INFINET is essentially an Internet Protocol (IP) and all the applications should be built around TCP/IP, to optimise use of the communication resources and to facilitate smooth implementation of the applications on the network.

Coupled with computerisation of branches of the banks, the Reserve Bank has been exhorting the banks to network their branches for intra-bank connectivity for addressing the twin issues of intra-bank funds transfer and transmission of critical MIS information between the branches and the controlling offices. Intra-bank connectivity will ensure that Treasury or Funds Department is connected to the Controlling office on the one hand and with the large business centres on the other hand. This will provide the bank a global vision of its funds position and optimal utilisation thereof.

As you are perhaps aware, the Reserve Bank is now in the process of putting in place a Centralised Funds Management System for the benefit of the banks. The Centralised Funds Management System envisages connecting all the Deposit Accounts Department of the Reserve Bank located at seventeen Regional offices with the Apex Level Server located in Mumbai. The system envisages periodical updation of Current Account balances in the Apex Level Server whenever a transaction is put through at the local or remote Deposit Accounts Department. The Bank Level Server will be able to query the Apex Level Server to check on its “global” or overall funds position. Eventually, funds transfer facility will be made available.

At the bedrock of the design of an integrated payments and settlement system is the Real Time Gross Settlement System. The Real Time Gross Settlement system is being designed to provide large value funds transfer and settlement in an on-line real time environment to the banking industry, with settlement on a gross basis. An integral component of the Real Time Gross Settlement System will be the Delivery versus Payment module for trading and settlement in Government Securities transactions. The system would have link with other netting systems like Clearing, Automated Clearing House transactions comprising of Electronic Clearing Service, Retail Electronic Funds Transfer, all Plastic Money and Smart Card transactions and EFTPOS (Electronic Funds Transfer at Point of Sale). Work in setting up the RTGS system has already started in the Reserve Bank with the setting up of a Working Group for the Appointment of Consultant for the implementation of the RTGS project. In fact, Request for Proposals have been invited from leading vendors intimately associated with Payment System applications.

Last but not the least are the initiatives we have taken to ensure Year 2000 compliance in the banking and financial industry. We are confident that there would be no problem on this

account. Within the Reserve Bank we have achieved more than ninety per cent compliance of all our systems by end June 1999. We are in the process of operationalising state-of-the-art Y2K compliant Mainframe systems IBM's S/390, for the MICR Clearing operations at the four metropolitan cities. In the next couple of months these new systems will be made operational.

Our contingency plans for handling clearing operations include switching over to the Magnetic Media Based Input Clearing system, which can work both in a LAN environment and on a stand-alone PC. Our other measures include stocking adequate amounts of cash in all the offices of the Bank as well as the over four thousand currency chests across the country.

As regards the commercial banking sector, ninety per cent of the banks have reported compliance by the end of June 1999. Efforts are currently on to ensure compliance by the remaining ten percent by July 1999. Ninety two per cent of the financial institutions have reported that their systems are Y2K compliant. The remaining financial institutions are expected to become Y2K compliant by the end of this month.

The Reserve Bank has advised the banks and financial institutions, to go in for extensive testing of their systems with reference to sensitive dates. All such test results should be documented and made available for verification by Controlling Offices, Internal Inspection teams, Reserve Bank inspectors etc. In addition banks and financial institutions have been asked to put in place Contingency Plans to ensure Business Continuity in operations. As part of the Contingency Plan, banks have been advised to have proper documentation in place for operationalising the Contingency Plan in the event of systems failure. Business Continuity is to be facilitated through processing on standalone PCs or manually or a combination of PCs and manual processing. One should not forget to factor in human resources planning by identifying the key personnel and their availability during the transition phase i.e. late December 1999, roll over period and the first few months of the new year. In addition, hard copies of all important books of Accounts and Customers Accounts, Treasury operations as on December 31, 1999 are to be made to ease in temporary switchover to manual processing if required and also to avoid default in meeting contractual obligations. Moreover, the Board of Directors and Senior Management need to be fully aware and responsible for the Contingency Plans.

It is important to appreciate that the issues involved in Y2K are both too complex, as well as unpredictable. We, therefore, believe that the need exists for building additional tiers of assurance in regard to the compliance efforts that have already been carried out. An independent assessment of Y2K compliance will clearly enhance existing comfort levels by providing such additional assurance.

Such an independent assessment or third party certification would call for high standards of professional competence and ethics on the part of agencies that are entrusted with the responsibility of Y2K compliance audits. This area has a good potential for the emerging co-operative links between the IT industry and the banking sector. NASSCOM may therefore have to seriously explore various possibilities by which the existing gap in this regard can be satisfactorily met. The experience gained through this process can lay the foundation for a new brand of IT firms specialising in information system audits.

The countdown to the new millennium has started. We are confident that on December 31, 1999 all systems in the banking and financial sector will perform normally, having been remedied and tested for Y2K compliance. January 1, 2000 will be a working day as usual for the banks. The problems if any in the systems will surface only during the Live Runs on January 1, 2000. However, January 1, 2000 being a Saturday the volume of transactions will be less compared to other days. The ensuing weekend will enable the banks to rectify the systems and ensure business continuity by having their systems in place and in operation for full business volumes on January 3, 2000.

Technological obsolescence on account of Y2K is inevitable. In order, to optimally utilise the available resources, redeployment of systems for non-date sensitive applications could perhaps be thought of. The systems can be used in areas which do not demand the latest technology and where technological obsolescence is not of primary importance. NASSCOM may work in this direction and prepare a list of such users for the benefit of various institutions.

Interface with IT Vendors

There are several areas where the IT industry has to play a proactive role in helping the banking and financial sector in achieving international standards of excellence and in realising our vision. Let me indicate a few areas where there could be co-operation between the IT industry and the banks. A customer goes into a fully computerised branch and he is still issued demand drafts and fixed deposit receipts manually. What we have achieved in branch computerisation is automation of back office functions and not the front end customer interface. This is an area where more efforts are required to be put in by both the IT industry and the banks to remove this seemingly minor problem, and yet very necessary to gain customer satisfaction. The process of re-engineering the total branch computerisation package should therefore start in right earnest to address this issue.

I have indicated that we have a vision of an integrated payments and settlement system for the country with a network of branches with Straight through Processing as the goal. For such a system to be functional we need to have standards based solutions for the banking and financial sector from multiple vendors. The standards based solutions should necessarily consist of open system architecture, with scalability as its main feature for taking care of future volumes in growth. The IT industry should closely collaborate with the banking sector in providing such services at cost-effective prices.

There is one threat in electronic banking that we face but is rarely mentioned openly, namely the fear of hacking and tampering of data. Secrecy is the essence of banking transactions. The security products both hardware based and application software based, should address the twin issues of taking care of customers interests and also ensure secure funds transfer.

The IT industry should be in readiness to provide such fool proof solutions of security including the encryption of data based on internationally recognised security standards. The role of Certification

Authority has to be clearly defined in this regard. Should the network service provider be the Certification Authority or should it be a trusted third party, or an association of banks themselves? For example, SWIFT, though a Service Provider, also acts as Certification Authority. It is not clear whether the service providers in India are ready to do so at this

juncture. The IT industry should help us in resolving this issue by recommending and educating the banking sector on the best practises that are followed globally in this regard. This is where transparency is not visible and I would strongly suggest that your Association should come out with simple, readable literature on the subject.

Another vital area where the IT industry can contribute significantly is in the setting up Credit Information Bureaux. The Reserve Bank has in fact set up a Working Group to examine the modalities of setting up a Credit Information Bureaux. The help of banks in monitoring their assets as also in providing instantaneous information on defaulters to the participants of the Credit Information Bureaux without getting into legal hassles is of utmost importance but not sufficient attention has been given to providing information to banks on the part of service providers. In particular, data warehousing and data mining would come to play a crucial role in giving such information, and in helping to reduce the NPAs of banks.

As the challenges before us are manifold and varied we need to have a co-ordinated approach. Banks, Indian Banks Association, Service Providers, Vendors, Government of India - Ministry of Finance, Department of Telecommunications and the Reserve Bank need to evolve a consensus approach on issues that need resolution. Constitution of a National Payment Council by the RBI to design and develop the Integrated Payment and Settlement Systems is a step in this direction. Many more steps need be taken in future.

NASSCOM with various software vendors under its umbrella and outside and the Indian Banks' Association have been initiators of change. More steps are required to be taken to facilitate greater co-ordination. The IT industry should gear itself to meet the requirements of the banking and financial sector with a spirit of co-operation, and partnership in making the banking industry scale the heights of international excellence. A productive approach is therefore, essential between the two sectors.

Thank You.

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* Inaugural Address delivered by Deputy Governor Shri S.P.Talwar, Reserve Bank of India, on July 22, 1999 at the National Conference on IT for Banking and Financial Institutions, organised by NASSCOM and IBA at Mumbai.