
Chapter VII

COMMUNICATION NETWORKS

7.1. BANKNET : The Bank recognised the pressing need to harness information technology for intra-bank and inter-bank communications in the 1980s⁵ and set up BANKNET. The design and implementation of BANKNET was entrusted to M/s. CMC.

7.2. Commissioned in 1991, BANKNET is a packet switched X.25 based network with nodes at Mumbai, Delhi, Chennai and Calcutta, and a switching centre at Nagpur with a mesh topology. In addition, Bangalore and Hyderabad are connected to Chennai through remote PADs. IBM 4381 mainframes at the 4 NCCs, connected to nodal Packet Switch Exchanges (PSEs) through Front-End processors using NCP/NPSI (Network Control Program/Network Packet Switching Interface), provide messaging facility. BANKNET uses a store-and-collect transmission logic, provided by the Message Transfer Utility(MTU), in the systems.

7.3. User banks access BANKNET through leased lines at the respective local centres using asynchronous ports on PADs and PC/UNIX machines with COMET (Computerised Message Transfer and File Transfer) software, developed in 'C'. The Message Transfer Utility enables 400 users to login at a time at each IBM node.

7.4. COMET has facilities for message creation, deletion, editing, ascertaining status of messages, listing and receiving acknowledgement etc. It also permits free format messages of 8 lines of 48 characters each.

7.5. Various message format templates, similar to SWIFT formats are available in COMET. Message formats for funds transfer applications such as TT issue, TT Purchase and TT Confirmation, Bank transfer on own account, Bank transfer in favour of a third party, etc. are available. Similarly several message formats for critical data transmission activities such as reporting weekly statement of accounts, daily and monthly balances of Government accounts, agency transactions in Government accounts, transfer responding advices, foreign currency rates, advice of cheques for collection, balance queries, inter-city advices etc. too are available.

⁵ The Committees on Communication Network for Banks and SWIFT Implementation, chaired by Shri T.N.A.Iyer, Executive Director, Reserve Bank of India recommended the setting up of BANKNET and also suggested that banks in India should join the SWIFT Network.

7.6. BANKNET usage, however, fell far below expectations. The main reason for this was that BANKNET was far ahead of its time in the sense, that a critical mass in computerisation, change in work procedures necessitating the use of communication technology had not been reached at the user end. The users did not, therefore, feel the necessity to make use of the network resources. Coupled with this was the high rate of leased line failure of both the inter-city and intra-city data circuits. Another crippling factor was the reach of the network, which was limited to the number of BANKNET ports which a bank had. This essentially meant that the exchange of messages was limited to these nodes. The improper location of these ports at the banks' end was also an additional factor. The limitations of the COMET application software, which did not permit file transfer was yet another factor.

7.7. RBINet : RBINet, a communication software, developed in 'C' and available for both DOS and UNIX machines, allows free format messaging and file transfer on the existing BANKNET infrastructure with the help of UNIX servers installed at the 4 NCCs. Each RBINet user interacts with the local UNIX server through PADs connected to the X.25 switch. The UNIX servers in turn communicate with each other using TCP/IP over the X.25 protocol. The software allows free format messaging without any restrictions on the length of the message, enables file transfer of both ASCII-text and Binary (spreadsheets, data bases, programs etc.) files, facilitates dial-up access, and has security features such as end-to-end encryption, audit trail, etc.

7.8. RBINet is also being used by several Departments of the Bank for various applications such as (i) transmission of Sec 42(2) of the RBI Act, 1934, data by commercial banks to Regional offices of Department of Banking Operations and Development (DBOD) and furnishing of consolidated data by the Regional offices of DBOD to Central DBOD; (ii) Press Relations Division daily news summary of important financial matters; (iii) Department of Economic Analysis and Policy Macro Economic Indicators on a weekly basis.

7.9. Society for Worldwide Inter-bank Financial Telecommunication (SWIFT) :

India was the 74th country to join the Society for Worldwide Inter-bank Financial Telecommunication (SWIFT) network on December 2, 1991. The initial membership of Banks in India was 34. Using advanced data-processing and telecommunications technology, the SWIFT system is based on the following features:

- it is available worldwide, 24 hours a day, 7 days a week;
- standard message formats for transactions enable members to avoid language and interpretation problems and permit the automated handling of messages;
- delivery of a message is very 'swift';
- ensures a high level of security while transmitting all messages;
- assumes financial liability for the accuracy, completeness and timely delivery of all validated messages.

7.10. Each country has a SWIFT gateway called the SWIFT Access Point (SAP) to which the individual users' terminals are connected. The users are connected to the SAP through leased lines with PSTN as backup. The SAPs are connected to the Regional Processors, which in turn are connected on-line to mother operating centres in the USA and Netherlands from where the messages are distributed to the ultimate destination address indicated in each message.

7.11. SWIFT has 9 types of Standard Message Categories. Each broad Message category has various message types for specific uses. A majority of the forex related messages are sent to correspondent banks abroad through SWIFT.

7.12. The present membership profile of users in India and the message traffic details as on January 1, 1998 are as follows:

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| • Total number of live users : | 71 |
| • No. of messages received in Jan 1998 : | 3,77,929 |
| • Annual percentage growth rate : | 14% |
| • No.of messages sent in January 1998 : | 2,18,191 |
| • Annual percentage growth rate : | 25% |

7.13. The users of the network in India are the Reserve Bank of India, all major banks including the newly established private sector banks, branches of foreign banks and major financial institutions.