Chapter V

Computerisation of Clearing and Settlement Operations

5.1. Computerisation of clearing operations was the first major step towards modernisation of the payments system[3]. The introduction of technology for clearing operations began with the setting up of 'Claim Based Settlement System' using Microprocessor based computer systems at Mumbai, Chennai and Delhi, in the early eighties. These systems were used for generating settlement reports on the basis of input statements containing the aggregate value of (cheques presented) claims of one bank over the other banks in the clearing house. Clearing balancing and settlement, which used to take a long time due to differences and errors in manual balancing, were reduced, apart from providing accuracy in the final settlement.

5.2. The next important milestone was fully automating the clearing operations. The rapid growth of cheque volumes in the eighties made the task of manual sorting and listing a very difficult task. Banks were unable to cope with the huge volume of cheques which had to be physically handled prior to their presentation in the clearing house. Though the clearing settlement became easy because of computerisation, the heavy volumes of paper that had to be processed introduced delays in presentation resulting in delayed credit to the customers. The growth in the volumes could therefore, be managed only by mechanisation of the entire clearing process.

5.3. The solution was the introduction of Magnetic Ink Character Recognition (MICR) based mechanised cheque processing technology. The existing cheques had to be redesigned incorporating a MICR codeline[4] which could be read by document processing machines called reader-sorters. The RBI introduced two types of reader-sorters - the Medium Speed Reader Sorters, capable of processing 300 instruments per minute for Inter-city instruments and the High Speed Reader Sorter Systems (HSRS) with speeds of 2400 documents per minute, for the clearing of local instruments. Driven by mainframe computers the HSRS systems were the state-of-the-art systems available at that time. These were installed in Mumbai (1986) followed by Chennai, New Delhi, (1987) and Calcutta(1989). By the middle of 1989 MICR cheque clearing operations in the four metropolitan cities had become fully operational and stabilised.

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[3] Several committees of the Reserve Bank recognised the importance of reforms in the clearing systems and underscored the need for computerisation on a priority basis. (See Annexure for details).

[4] MICR Codeline contains basic cheque information in designated fields for data capture and mechanical sorting of the cheques. The codeline is both pre-printed and later encoded using special MICR ink, using standardised E13B Font.

5.4.   Inter-city clearing: The four metropolitan centres viz., Mumbai, New Delhi, Calcutta and Chennai are covered by two way inter-city clearing. The other offices of the RBI are connected with these four centres under one way inter-city clearing. Under this system, inter-city cheques drawn on any of the metropolitan centres are processed at the MICR clearing and are sent to the drawee centre by postal courier where they are integrated with the local clearing of that centre. This National Clearing has sharply reduced the time taken for realisation of these cheques.

5.5.   Regional Grid Clearing operations: As a logical step towards extension of Inter-city clearing at all the major cities, a regional grid clearing was introduced in a small way. Important commercial centres/district headquarters in a region were connected for one way clearing with the nearest MICR centre. Thus, cities such as Coimbatore, Madurai, Pondicherry were linked to Chennai, Pune and Vadodara to Mumbai, Asansol and Jamshedpur to Calcutta etc. The benefits of reduced time for inter-city clearing was thus extended to such cities too.

5.6.   Clearing houses managed by the RBI: The settlement operations in all non-MICR based clearing centres managed by the RBI viz., the clearing houses at Ahmedabad, Kanpur, Bangalore, Hyderabad, Nagpur, Patna, Jaipur, Thiruvananthapuram, Guwahati and Bhubaneshwar were also computerised by the introduction of a magnetic media based input settlement software package, developed in-house. The clearing data from the banks aggregated as receivables, are submitted in floppies to the clearing house and settlement is carried out.

5.7.   The magnetic media based input settlement represents an intermediate step towards complete automation of cheque clearing through MICR processing and enables banks and the clearing house to get accustomed to a computerised environment. The system has been in operation for nearly four years and is functioning satisfactorily. It covers presentation clearing, return clearing, High Value/High Value return clearings and inter-bank clearing but does not cover inter-city clearing.

5.8.   High Value clearing: High value clearing is a value added service. In this clearing select branches located in a central business/commercial area and in the vicinity of the Clearing House/Service Branches of banks present instruments with a face value of Rs.100,000/- and above deposited by their customers within a specified cut-off time, to the clearing house. The instruments are dropped into the respective receptacles of the drawee banks and settlement is carried out through floppy based input statement. The return clearing is held before close of banking hours on the same day. In 1994, the total value of instruments presented in this clearing at the 4 metros was Rs.522,871 crores. By 1997, this had gone up to Rs.949,502 crores. (1 crore is equivalent to 10 million)

5.9. High value clearing enables a customer who deposits a cheque on day 1 to withdraw the amount on day 2 itself, provided, there is no return. High value clearing is therefore, faster compared to regular MICR clearing where credit is afforded on Day 2 and withdrawals are permitted on Day 3, after the Return discipline cycle is completed. High value clearing was first introduced in Chennai in April 1989, and was then extended to Mumbai, Calcutta and New Delhi respectively. It has since been extended to Ahmedabad, Bangalore, Hyderabad, Jaipur and Kanpur. The 5 remaining RBI managed clearing centres are likely to introduce high value clearing shortly.

5.10. **Inter-bank Clearing:** Inter-bank payments are usually settled among banks by issuing cheques drawn on their accounts with Reserve Bank of India. This practice resulted in a large number of cheques being presented to Deposit Accounts Department (DAD) of the Reserve Bank, leading to heavy work pressures throughout the day. It was therefore, decided to start a separate Inter-bank clearing. In the Inter-bank clearing banks no longer use the RBI cheques to settle their claims against each other. Instead, they use their own Bankers Cheques. The settlement is carried out through Floppy Based input statements, submitted to the Clearing House. The pay orders are however, dropped in the designated receptacles, from where they are collected by banks' representatives. Since there is no return for these instruments, the credit / debit is instantaneous.

5.11. Inter-bank clearing is used by banks mainly for four types of transactions: call money transactions, Rupee payment of foreign currency transactions, Bank to Bank transfers for funding upcountry requirements and Inward remittances. Inter-bank clearing was introduced in Chennai in April 1989, followed by Mumbai, Calcutta and New Delhi. This clearing which is basically a debit clearing has been converted into a credit clearing at Chennai from 1996 onwards. Instead of bankers' cheques, banks generate credit advices using a software provided to them by the Reserve Bank and settlement is effected at the Clearing House on the basis of the consolidation of the credit data furnished by all the member banks. This has been rendered possible due to computerisation of all the service branches in Chennai.

5.12. Computerisation of service branches which accompanied the computerisation of the clearing houses (both MICR and Floppy based) at banking centres with large volumes of business has resulted in the creation of a base for the introduction of automated clearing operations at other centres. This has also enabled the introduction of electronic payments services on an experimental basis so that future expansion of these services using the clearing infrastructure is possible. However, there is a lot of scope for developing backward and forward linkages to fully utilise the advantage of the item-wise data base created by the MICR cheque processing.