Payment and Settlement Systems in Indian Banking Industry : A study on Pre and Post Electronic Period Experience

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Abstract

In the present economic environment in general and business world in particular, the importance of an efficient payment and settlement systems of financial obligations can not be over emphasized. Like any other process, the present system of payment and settlement has passed through a series of changes from simple barter to highly advanced electronic medium. Today there is a bouquet of payment and systems to suit the requirements of all types of customers, purpose and segment. However the latest trend in payment and settlement systems through electronic form is fast catching up in India and rest of the world. is payment through the electronic form. In India, RBI has been trying very hard to push through the reforms in the payment and settlement systems on account of the benefits derived from the use of technology and its development. RBI has been sharing and signaling the expected developments in line with its objectives of the new system.

An effort has been made in this paper to trace the development of payment and settlement system of financial obligation over the period of time, e.g., from cash to recent electronic media. The study also throws light on the issue of shifting from paper based to electronic based payment and settlement system.

Key words : *Hundies, Clearing house, Negotiable instruments, MICR technology, SANKNET, INFINET, RTGS, IMPS, NACH, ABPS, E-BAAT*

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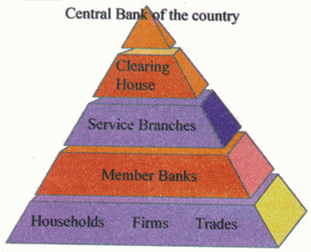
An efficient payments system functions as a lubricant in speeding up the liquidity flow in the economy and creating a momentum for economic growth. A smooth, well-functioning payments system not only ensures efficient utilisation of scarce resources but also eliminates systematic risks. It assumes importance in the context of domestic financial sector reforms and global financial integration.

Barter system preceded the introduction of money. Use of money for settlement of payment obligations has a very long history. However, Barter co-exists with monetised economy, but cash is the most readily accepted medium of exchange in all modern economies (legal tender) which brings about irrevocable settlement. There are, however, certain disadvantages associated with the use of cash like fear of loss/theft, zero return on holding, insurance cost, security risk in carrying cash, transportation costs etc.

The requirements of a modern economy in regard to settlement of transactions are diverse and involve large value payments. External trade involves payments in different currencies which cannot be completed by simple cash transfer. Therefore, a need for additional forms of payments, which can facilitate with improved financial intermediation and expansion of financial instruments was felt. This led to the use of cheques and other paper based instruments as well as the electronic instruments. Due to growing financial intermediation in the recent times, these instruments have become important modes of payment in most of the countries.

Individuals, business entities or governments issue cheques on their banks in discharge of their payment obligations and the recipients would then get the funds through their own banks. As the number of banks grew over time, the volume of instruments exchanged increased substantially. Consequently, as also to have an orderly means of transfer of payment instructions among banks at a location, a common set of practices and mechanisms of exchange had evolved. The payment instruments routed through financial intermediaries involve book entries at various levels to transfer funds from one party to the other. Whenever non-cash payment instruments are involved, they are accompanied by a chain of related fund transfers and book entries and messages. Banks in turn need an intermediate agency like clearing house where these instruments can be exchanged and the financial claims can be settled through a settlement bank, which is usually the Central Bank of the country.

Clearing Houses facilitate the exchange of instruments and processing of payment instructions at a central point among the banks. Clearing Houses-manual and paper based in many advanced countries have gradually extended their range of activities to include automated (ACH) and electronic means for settlement of payment transactions.



The payments system has a multiplicity of layers where several levels of intermediation occur in the transfer of funds from one person and/or institution to another. The structure of the Payments System can be visualised as a Pyramid, with linkages among different tiers of the payment intermediaries. At the base are the non banks whose assets are diverse, including bank notes and deposits and include both cash and non cash payments. Banks are at the intermediate level. The Clearing House and the settlement bank are the financial intermediaries who channel the funds flow between the banks. At the apex is the Central Bank of the country (RBI) which has the settlement accounts of the banks.

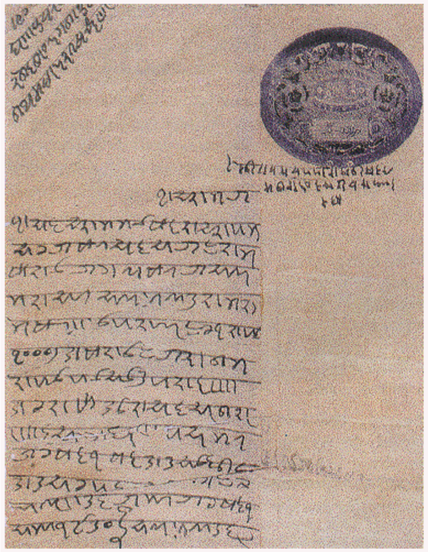
In the Payments System Pyramid, the Central Bank is the settling bank maintaining settlement accounts for banks and these accounts are used by the banks to discharge their obligations amongst themselves. They provide the basic stability to the settlement process as the Central Banks cannot fail.

Evolution of Payment Systems in India – Pre-British period:

The earliest payment instruments known to have been used in India were coins, which were either punch-marked or cast in silver and copper.

Early Punch marked Coin (Courtesy - Museum Cell, RBI)

In ancient India, loan deed forms called 'Rnapatra' or 'Rnalekhya' where in use. They contained details like the name of the debtor and the creditor, the amount of loan, interest rate, repayment condition and period of repayment etc., During the Buddhist period, they were called 'inapanna', Mauryan period 'Adesha', and the Mughal period they were called 'Dastawez'.



Nineteenth century Period Hundi (Courtesy - Museum Cell, RBI)

Hundis were used as remittance instruments (to transfer funds from one place to another); as credit instruments (to borrow money [IOUs]); for trade transactions (as bills of exchange). Hundis were of various kinds and each type had certain distinguishing features.

The princely states of India had their own distinct coins e.g. the Arcot Rupee coin struck by the Nawab of Arcot in the Madras Presidency. By 1740, the Europeans had secured the privilege of coining this rupee, and the coins came to be known as English, French and Dutch arcots. In 1835, the East India Company introduced the Company's Rupee to bring about uniformity of coinage over British India.

Evolution of Payment Systems in India – British period

The modern 'Paper money' has its origin in the late 18th century with the notes issued by private banks and semi-government banks. The Paper Currency Act of 1861 conferred upon the Government of India the monopoly of Note Issue bringing an end to the privilege of note issues enjoyed by the private and Presidency Banks.

The private banks and the Presidency Banks introduced other payment instruments in the Indian money market. Cheques were introduced by Bank of Hindoostan in 1770. Post Bills were introduced by the British in 1827. These were Inland Promissory notes issued by the bank on a distant place, the holder of which would be paid on acceptance after a specified number of days. Trading in bills of exchange became one of the items of business of Bank of Bengal from 1839.

In 1881, the Negotiable Instruments Act (NI Act) was enacted, formalising the usage of instruments like the cheque, the bill of exchange and promissory note. The NI Act provided a legal framework for non-cash paper payment instruments in India.

With the steady growth in volumes of trade and commerce, there was a growth of public confidence in the usage of cheques and transactions through payment instruments. This necessitated an organised cheque clearing process. In 1921 the Imperial Bank was setup and settlement was done through cheques drawn on that bank. The Bombay Clearing House was conducting clearings in Bombay with uniform procedures and charges for collection cheques and other instruments were adopted by the Bombay Clearing House in 1941-42. After the setting up of RBI under the RBI Act 1935, the Clearing Houses in the Presidency towns were taken over by RBI.

Evolution of Payment Systems in India – Post-British period

Currency constitutes 19 per cent of M3 represented in India, as against 6 to 7 per cent in advanced countries and it is supplemented by cheques and drafts for payments in commercial transactions. Various other paper instruments like a Banker's cheque, Payment order, Payable 'At Par' cheques etc., are also used to cater to the specific payment needs. The statutory basis for these instruments was provided by the Negotiable Instruments Act, 1881 (NI Act).

Cheques were not very popular in the system of settlement for several reasons like trading with strangers, dishonor of cheque, delay in realization etc. This gave birth to DDs/Bankers cheques etc., which are a pre-paid Negotiable Instruments, wherein the drawee bank undertakes to pay in full when the instrument is presented for payment. Traveler's cheques, 'Payable at par' instruments, issued for periodic interest on fixed deposits and dividend are the different forms of such instruments

All the above payment instruments are paper based and require to be tendered at specific banks for payment either in person or through clearing. Which they often lead to delays in payment. To overcome this, telegraphic transfer (TTs) was introduced in which a cipher code was used to transmit message for transfer of funds.

With the change in tendency of the people to invest in financial assets like shares and debentures, rapid expansion of bank branches in 1970s and the consequent spread of banking have led to the growth of cheque volumes. This substantial increase in the volumes of cheques necessitated upgrading the existing infrastructure for exchange and settlement from manual clearing arrangement to more efficient and electronically driven systems. Manual sorting and listing of instruments resulted in long delays and errors in computation of the total claims and the problem of un-reconciled entries between the banks.

Another important payment instrument which is widely popular is the Money Order service offered by the Department of Posts, a point-to-point delivery of funds in which messages are sent through Telex or Telegraph. The Postal Orders are issued denomination-wise.

Payments and Settlement System Reforms in India.

RBI has taken up the work of reforms in the payment and settlement systems for the country with the objective of ensuring efficient and faster flow of funds among various constituents of the financial sector. The driving force behind all the initiatives has been 'the technology', which has ensured all major covenants of a safe, efficient and secure payment and settlement system.

The present scenario is such that all payment systems - paper to electronic - need to be developed simultaneously to reduce the use of cash in the economy and move towards a "less-cash" society by greater adoption of electronic modes of payments. If the decline in cheque usage is managed and actively discouraged in a structured manner, the results could be achieved in a shorter time-span and also ensure that no particular section of society is marginalized due to these developments. Further, it could also pave the way for a structured migration and adoption of electronic payments by all sections of society.

The RBI had embarked on technology based solutions, coupled with the introduction of new payment products in the latter half of the twentieth century - such as

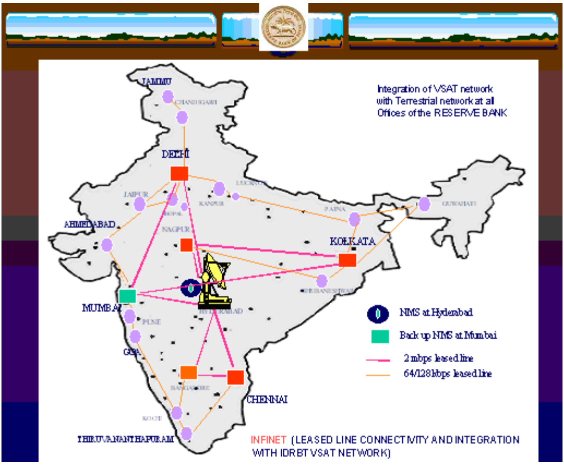
- Computerised settlement of clearing transactions,
- Use of MICR Technology and Image for cheque clearing,
- Operationalisation of BANKNET - a leased line terrestrial network,
- The computerisation of Govt. A/cs and accounting of Currency Chest transactions.

The new payment products introduced over the last few years included the two-way inter-city cheque collection at the four metros and one-way inter-city cheque collection by clearing houses managed by the RBI/SBI, ECS, EFT and Delivery versus Payment (DvP) for Govt. Securities transactions.

A Payment Systems Group was constituted in Feb 1998 - with the focus of attention on a System Design of an integrated payments, Payment instruments, Electronic banking systems, Clearing and settlement arrangements, Technological infrastructure, Legal issues, Monetary policy implications, Change management, re-engineering of the process and procedures and responsibilities of banks and to track the progress in implementation of the systemically important Payment System projects.

The consolidation of the existing payment systems revolves around strengthening Computerised Cheque clearing, expanding the reach of ECS and EFT - by providing for systems with the latest levels of technology. The elements in the developmental strategy are the opening of new clearing houses - to be managed through the INFINET; optimising the deployment of resources by banks through

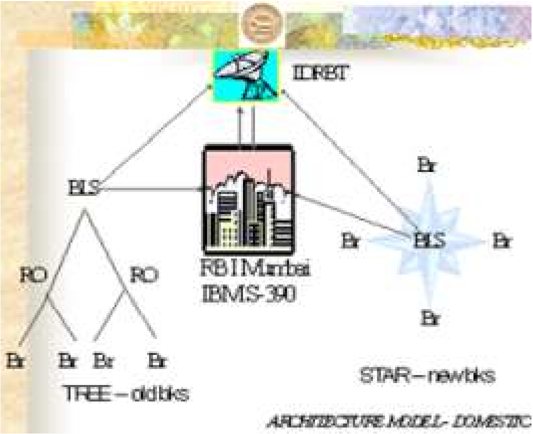
- RTGS System; Centralised Funds Management System (CFMS); Negotiated Dealing System (NDS) and the Structured Financial Messaging Solution (SFMS).

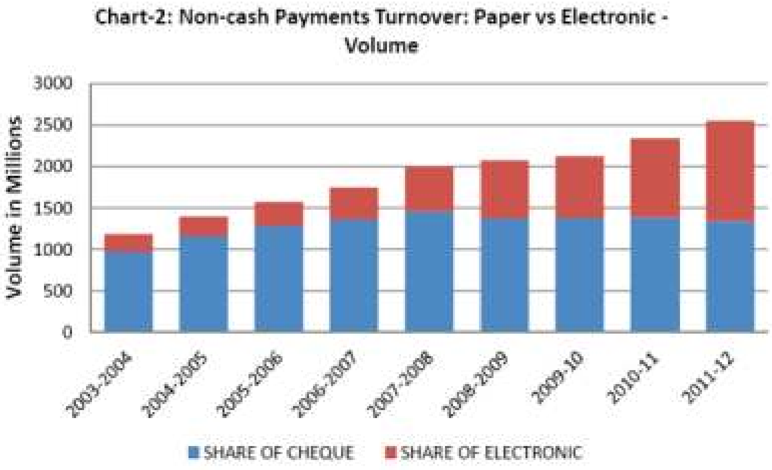


INFINET - Network Diagram

Development of corporate intranets by banks, and CBS making extensive use of INFINET for intra-bank intercity connectivity is another focus area. The pictures depicted below give a graphic representation of the INFINET and the connectivity of banks

Connectivity of Banks





Source : *RBI Annual Report*

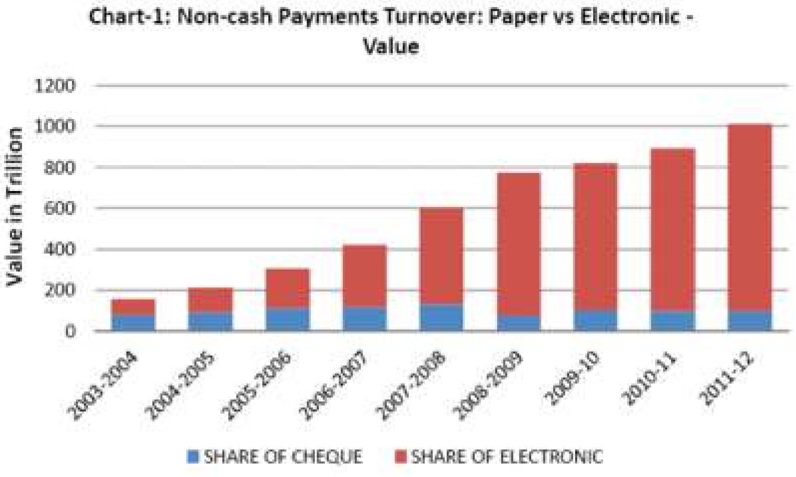
Reasons for High Level of Cheque Usage in India

The migration from cheque usage to electronic mode is easier said than done. The reasons to continue usage of cheques, despite developments in electronic payments are:

- Habits die hard. Technology changes faster than the mind set. Migration from cash to cheque may be a simple step involving movement from one physical instrument to another. Hence, even as newer electronic forms of payments are introduced, widespread adoption of such modes takes time.
- Ease of issue - Only the beneficiary name is required as against information such as account number, name of bank/branch for e-payment and beneficiaries are also not comfortable in parting such details. Further, cheques enable anonymity in payments through use of bearer instruments.
- Mismatch between the supply and demand for electronic payment modes, low levels of accessibility and awareness of electronic payment systems hamper adoption of electronic payments. User apprehension of using a 'new' mode of

Status of Cheque Usage in the Country

The payments eco-system in the country is gradually moving from a purely cash and cheque-based scenario to electronic payments. With the RBI leading the change, the payments scenario is set to move towards a 'less-cash' society where access to various safe, efficient, accessible electronic payment services. It is heartening to note that the average y-o-y growth in electronic payments is nearly 30 per cent since 2003 in terms of volume, while value wise, electronic payments, dominate over the non-cash payments turnover.



Source : *RBI Annual Report*

However, in absolute terms cheque volumes continue to be high at 52 per cent of total payments turnover. Significantly, the share of cheques is showing a declining trend.

While this high cheque volume is attributed to the low cost and efficient cheque clearing infrastructure in the country as also the overall growth in the economy. It is nevertheless desirable that such incremental transactions take place in electronic form rather than through cheques and is desirable to migrate existing cheque usage also to electronic form.

payment and resistance to move from their 'comfort zone' of using cheques, lack of knowledge of online transaction process apprehensions regarding security issues in electronic payments etc., are some of the other resistant factors for the use of electronic mode of payments.

- Low cost of issuing of cheques, as most banks offer some number of cheque leaves to the borrower free of cost. Whereas payment originator has to incur some charges while initiating electronic payments.
- Electronic payments are 'credit push' in nature wherein the payer should have the requisite funds at the time of initiating the payment. Cheque issuance does not come with any such compulsions! Further the payer will have control over the timing of the payment.
- Physical record of payment is maintained when Cheques are issued, which is not so under electronic payments. These fears play on people's choice of mode of payments, especially among those who are not so comfortable with on-line transactions.
- Ceiling limit on the amount of transactions imposed by the banker/customer for safety reasons also creates undue hassles and in such cases, the users prefer cheques electronic mode.
- Lack of awareness among the public about the availability of protection for electronic modes under the Payment and Settlement Systems Act 2007 similar to those available for physical instruments.
- Customers are comfortable with cheque system where in majority of the cheques are cleared (high speed clearing) with T+1 clearing cycle and they are content with the present electronic system.

A survey revealed that organisations continued to accept cheques for following reasons - it is easier to match payments with applications / invoices, making it easy for customers to make a payment. Organisations issued cheques to facilitate making of irregular or large or on-off payments, an opportunity for payment float, etc.

The Need for the 'Managing' the Decline in Cheque usage

Paper-based systems such as cheques and cash come with a considerable cost to the society. High cheque (and cash) usage involves not only financial costs such as printing, security, postage, clearing and handling costs but also brings other non-financial costs to the users / society such as growth of a shadow economy, environmental damage, etc.

Regardless of the customer's own preference, payment will be made using a particular mode depending on the seller acceptance. Hence, a 'managed' decline of cheques could nudge the payments choice into electronic mode. The receipt for the fees paid issued by academic institutions or DD is a testimony of this fact. Thus, even these factors are well-appreciated, it has not been possible to push-the-envelope insofar as ensuring that cheque usage is seriously discouraged. It is perhaps appropriate to do so now that alternate means of payments in the form of easy, accessible, low-cost and efficient electronic systems are available.

Developments in Electronic Payments

Today, we have many options of electronic payments which can easily be adopted by the cheque using public - both institutional and individual users. These include systems such as:

Electronic Clearing Service - While the ECS is generally operated at local levels, the National ECS (NECS) system, operated from a central location at Mumbai, It is a pan-India system facilitating crediting of accounts of beneficiaries across bank branches. It leverages on Core Banking Solutions (CBS) of member banks. The Regional ECS (RECS) covers all CBS-enabled bank branches within a state or a group of states, thus facilitating state-wide payments / receipts to be processed at a centralised location.

National Electronic Funds Transfer (NEFT) system facilitates near-real-time funds transfer facility with its twelve batch settlements at hourly intervals, this system can be best used for domestic fund transfer requirements. Some salient features of the system include - acceptance of cash for originating transactions by walk-in customers, positive confirmation to the sender regarding successful credit of funds to the beneficiary account, provision for penal interest for delayed credit to beneficiary account or delayed return of funds to originator, no minimum or maximum amount limitations, facilitating outward transfers to Nepal to enable migrants from that country to remit funds to their families using the formal banking channel, etc.

Real Time Gross Settlement (RTGS) system facilitates both inter-bank and customer transactions with transfer of money taking place from one bank to another on a "real time" and on "gross" basis. Settlement in "real time" means payment transaction is not subjected to any waiting period. "Gross settlement" means the transaction is settled on one to one basis without bunching or netting with any other transaction. All inter-bank payments and customer transactions above Rs.2 lakh can be processed through this system.

Inter-bank Mobile Payments (IMPS) operated by NPCI facilitates inter-bank transfer of funds through mobile phones. This leverages on the high penetration rate of mobile phones and is built around the convenience and ease of use among mobile phone users. Further, the system also provides the convenience of using the IMPS for internet-based on-line transactions.

National Automated Clearing House (NACH) operated by NPCI is similar to the ECS payment service enabling pan-India processing of bulk payments and receipts. The system has just been operationalized towards the end of December 2012.

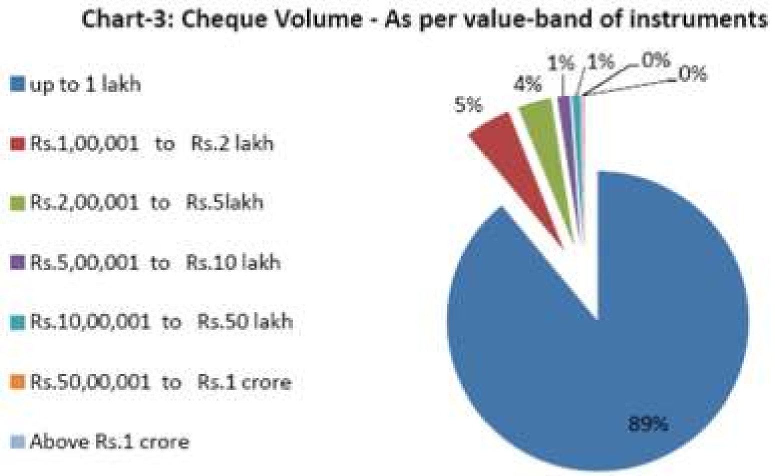
The Aadhaar Bridge Payment Systems (ABPS) has been put in place by NPCI as a payment bridge in order to facilitate direct credit of government benefit payments to beneficiary accounts based on the Aadhaar number, Amount and Transaction reference number. Account number and Aadhaar number mapping has been done by each beneficiary bank and uploaded to the NPCI central system. Thereafter, through Aadhaar Enabled Payment System (AEPS), the funds are withdrawn by the intended beneficiary at Business Correspondent (BC) locations by providing Aadhaar number and validation of biometric identification.

All efforts are being made by RBI and the banks to create awareness about the safety, security and ease of operations of electronic modes, using various platforms including customer interactions etc. Similarly, in recent times, the charges structure for most of these products has been rationalised even as the necessary payments infrastructure in the eco-system is being strengthened.

Multi-pronged Approach for Cheque Disincetivisation – suggestion to discourage cheque usage

Given the reasons for continued existence of cheques as a payment means, positive reinforcements for electronic payments alone will not lead to reduction in cheque, but it has to be reinforced unequivocally through certain measures which will disincentive the usage of cheques quite forcefully. Based on the inputs received, the following strategies can be considered for reducing cheque usage but also envisages paving the way for 'directing' the users towards adoption of electronic payment services.

- Education and Awareness of alternate payment means would go a long way in ensuring the success of this plan. The ongoing financial literacy efforts through Electronic Banking Awareness and Training (e-BAAT) would play a very significant role in this context. Broadly the segments may be classified into individual users, institutional users and Government departments so as to encompass all the categories involved in the process of payments.



Source: *Data from MICR CPCs*

- Prescription of any cut-off amount limit on issuance of cheques would have a positive impact depending upon the general values / amounts for which cheques are usually written in the country. An analysis of the volume of cheques cleared through the MICR Cheque Processing Centers (CPCs) across the country during the first half year of the financial year 2012-2013 reveals that around 89 per cent of the cheques cleared in these centers were below Rs.1 lakh under various categories. Mandating an upper threshold limit will have to be decided taking into the cheque usage pattern by various segments discussed above, so that small users are not inconvenienced even as the objective is largely met.

- Set limits or levy charges on issue of cheque books to account holders. Prescribing higher charges on the usage of cheques while issuing beyond a limit may act as a deterrent in using cheques. Also levy of charges on cheque usage- by both issuer and the beneficiary when cheques are issued.
- Avoid slippage to cash transactions is the real apprehension that is often expressed when any plan to discourage use of cheques is discussed. Given the fact that the large volume of cheques issued in the country are of relatively low value, which combined with the accessibility of ATMs (at least in major cities and towns) gives rise to the real worry that if cheque usage is actively discouraged, it would have a negative impact.

A sample survey was conducted with banks on cost of cash handling including idle cash, maintenance of currency chests, cash movement like transport, security, insurance, etc. along with the cost of dispensing cash at ATMs. The feedback received was stunning, It revealed that - cost of handling cash is Rs.1.95/ Rs.1000/- plus insurance whereas in ATM it is approximately Rs.17 per transaction. The cost of holding idle cash is 9 per cent. It excludes the cost of manual operations handled by their own staff, which could be construed as the 'social cost' of cash transactions to the economy as a whole. Cash transactions in bank accounts need to be discouraged / charged heavily. RBI mandated charges in such cases to avoid resultant shifting of CUSTOMERS from one bank to another.

There are some issues which need to be addressed - both regarding disincentivising cheque usage as well as incentivising greater adoption electronic payment products and services as highlighted below:

- A sunset clause for disincentivising the cheque users and migrate towards electronic payment methods be fixed, keeping in mind the diversity of users and the disparity in availability and accessibility to alternate payment services.

- Standardize the practices and procedures in electronic payment services to meet the technological requirements and also the operational expectations of the users who migrate from cheque usage to these systems.
- The NEFT system provides positive confirmation to the sender which enables him / her to be aware of the time the funds were credited to the beneficiary account. Incorporation of such payment details in bank account statements / pass books would also facilitate record-keeping requirements of customers. Similarly some sort of functionality (e-invoicing for instance) is to be built within the institutions such as companies, schools and educational institutions, etc., to receive payment and provide an immediate documentary evidence to the payer.
- Public awareness regarding the Protection for bouncing of 'electronic payments'. Section 25 of the Payment and Settlement Systems Act, 2007 accords the same rights and remedies to the payee (beneficiary) against dishonour of electronic funds transfer instructions for insufficiency of funds in the account of the payer (remitter), as are available to the payee under section 138 of the Negotiable Instruments Act, 1881. Ensure that users of these systems are aware of their legal responsibilities and rights.
- Widespread accessibility to electronic payments - A high growth in electronic payments can be witnessed when the network effect is strong and there is no skewness in demand and supply of such services. Greater awareness also to be created about the availability of such payment options.

- Customer liability – Clarity regarding the responsibilities and obligations of customers as well as banks and service providers is very crucial in ensuring greater adoption of electronic payments.

Individuals as Cheque Users

- Free cheque books may be kept to a minimum number on a per annum basis.
- PDCs should be completely stopped and repayments should be only through electronic payments. Existing PDCs be converted to electronic payment mandates within a prescribed timeline.
- Credit card dues should be paid electronically.
- Levying a charge for those investors who have not opted for receiving dividend / interest directly into their bank accounts.
- In order to avoid increased dependence or slippage to cash-based transactions, high (both in amount and frequency) cash withdrawals and deposits of cash by individuals may also be charged.
- Discourage cheque collection boxes at public places - have it only at bank branches. This will reduce the convenience of using cheques by individuals.

Institutions as Cheque Users

Corporates and institutional customers are the largest users of cheques across all value bands accounting for 54 per cent – 64 per cent of cheques processed. Hence, this segment is to be targeted for moving towards electronic payments. The following actions are proposed for the purpose and also to ensure that there is no slippage to cash:

- Access to cheque books be made costlier. The charges levied for cheque books may be increased substantially. Also levy charges for cheques issued at a higher rate than the corresponding electronic charges.

- Interest warrants and dividend warrants are to be issued in electronic forms only. No inconvenience charges to be levied while accepting electronic payments.
- Similarly, cash deposits in current accounts need to be discouraged actively and higher charges may be levied on them.

Government departments / agencies as Cheque Users

Given the sizeable nature of Government transactions, they play a catalyst role in driving the payments in the desired direction. If the government departments / agencies including public sector companies / utilities migrate from cheque-based transactions to electronic payments, it would naturally drive many others to adopt electronic payment services. Similarly, some of the practices and procedures followed by government departments may also influence the choice of payment mode for those dealing with government departments.

Conclusion

The task of designing developing and operationalising a modern, integrated, robust payment and settlement system for the country, is a gigantic one. The strategy for achieving this is by breaking the various objectives into many components, with clear targets to be achieved at every stage whereby it becomes more manageable to accomplish each objective in its entirety. The role and functions of each participant in the payment and settlement systems of the country are also vital and it is only by the concerted efforts of all concerned that the vision would materialise into reality and the mission of LESS CASH / LESS PAPER SOCIETY may be accomplished.

References

Publications of RBI

Various issues of RBI Annual Reports