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Electronic Payment System In India

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Abstract: ***Electronic payments are financial transactions made without the use of paper documents such as cheques. Electronic payments include debit card, credit card, smart card, e-wallet, e-cash, electronic cheques etc. E-payment systems have received different acceptance level throughout the world; some methods of electronic payments are highly adopted while others are relatively low. This study aimed to identify the issues and challenges of electronic payment systems and offer some solutions to improve the e-payment system quality.***

Keywords: Electronic payments, net banking, plastic cards and payment gateways

I. INTRODUCTION

Nowadays the use of electronic money is possible due to cryptography and digital signatures. Public key encryption and decryption together are called public key cryptography. The public key encryption involves two keys, public key and private key to authenticate the identity of an entity, electronically. As the name suggests, the public key is published and the private key is kept secret. Data is encrypted with the public key and the same data is decrypted with the corresponding private key. Digital signatures are used when you are encrypting some important information that is to be kept confidential. Digital signatures involve the use of hash tables that encrypt a hash using the private key and decrypt the hash using the private key. Electronic money has surely changed the business and banking techniques. Electronic money has enabled anytime and anywhere banking facility. Due to advent in information technology and it infrastructural development, Indian banks started offering e-payments in India.

TYPES OF E-PAYMENT SYSTEM

There are diverse payment systems functioning the country, ranging from the paper based systems where the instruments are physically exchanged and settlements worked out manually to the most sophisticated electronic fund transfer system which are fully secured and settle transactions on a gross, real time basis.

They cater to both low value retail payments and large value payments relating to the settlement of inter-bank money market, government securities and forex transactions. Broadly they can be classified:

- ✓ Wholesale- High –Value transactions normally initiated between banks, corporations, governments, regulators etc.
- ✓ Retail –Involves lower-Value transactions carried out by individual customers, including HNIs and HUFs.

In the subsequent sections, we shall study the various payment systems of the above two types.

WHOLESALE OR LARGE VALUE PAYMENT SYSTEMS

There are a few large value payment systems functioning in the country. These are the Inter-Bank Cheques Clearing Systems (the Inter-bank Clearing), the High Value Cheques Clearing System (the High Value Clearing), the government securities clearing system (the G-Sec Clearing), the Foreign Exchange Clearing System (the Forex Clearing) and the Real Time Gross Settlement (RTGS) System.

All these system except the High Value Clearings are electronic based systems. These mostly relate to interbank/ inter-financial institutional transactions except the High Value Clearing where high value customer cheques are cleared. The Inter-bank Clearing functions in 07 places and the High Value Clearing in 15 places- both are managed by Reserve Bank.

The G-Sec Clearing and the Forex Clearing are managed by the Clearing Corporation of India Limited (CCIL).The RTGS System is operated by the Reserve Bank. All these are deemed to be Systemically Important Payment Systems (IPSS) and therefore the by Reserve Bank has, in line with the international best practices in this regard, moved them (except the Inter-bank Clearings at places other than Mumbai and the High Value Clearing) to either secure and guaranteed systems or the RTGS System.

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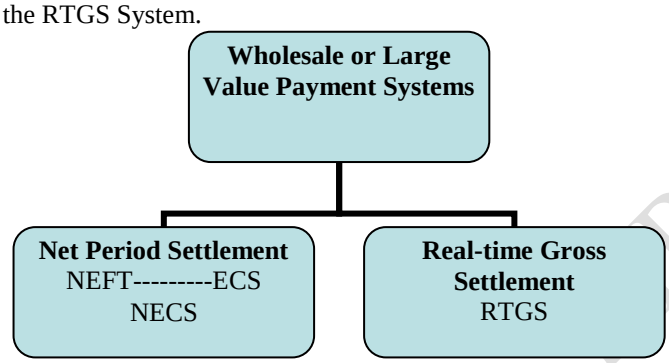

Figure 1

NET PERIOD SETTLEMENT SYSTEMS

Routinely Banks, Corporate, Governments etc. Keep making large-value transactions throughout the day with various banks, other companies, associates etc. In this kind of a settlement system, transactions are not settled immediately, but at the end of a specific period of time. This specific period varies from system to system. It may be at the end of the day for some systems, or more frequent for others. All transactions are said to be complete only after settlement at the end of the specified period. We will cover NEFT and ECS, the main types of net- period settlement systems, in the following sections.

II. NATIONAL ELECTRONIC FUNDS TRANSFER (NEFT)

National Electronic Funds Transfer (NEFT) is a nation-wide payment system facilitating one-to-one funds transfer. Under this scheme, individuals, firms and corporate can electronically transfer funds from any bank branch to any individual, firm or corporate having an account with any other bank branch in the country participating in the scheme.

The objective of the NEFT System is to establish an electronic funds transfer system to facilitate an efficient, secure, economical, reliable and expeditious system of funds transfer and clearing in the banking sector throughout India, and to relieve the stress on the existing paper based funds transfer and clearing system.

A product innovation by the RBI the National Electronic Funds Transfer System, was introduced in November 2005 as a more secure, nation-wide retail electronic payment system to facilitate funds transfer by the bank customers, between the networked bank branches in the country. It is a deferred net settlement system and is an improvement over other modes in terms of security and processing efficiency.

FEATURES OF NEFT

- ✓ There is no limit - either minimum or maximum- on the amount of funds that could be transferred using NEFT. However, maximum amount per transaction is limited to Rs. 50.000/- for cash –based remittances and remittances to Nepal.
- ✓ There is no restriction of centres or of any geographical area within the country. The NEFT system takes advantage of the core banking system in banks. Accordingly, the settlement of funds between originating and receiving banks takes places centrally at Mumbai, whereas the branches participating in NEFT can be located anywhere across the length and breadth of the country.
- ✓ Presently, NEFT operates in hourly batches – there are twelve settlements from 8 am to 7 pm on week days (Monday through Friday) and six settlements from 8 am to 1 pm on Saturday
- ✓ The structure of charges that can be levied on the customer for NEFT is given below:
  - Inward transactions at destination bank branches (for credit to beneficiary accounts)- Free, no charges to be levied from beneficiaries
  - Outward transactions at originating bank branches – charges applicable for the remitter
    - For transactions up to Rs 10,000: not exceeding Rs2.50 (+ Service Tax)
    - For transactions above Rs 10,000: up to Rs 01 lakh: not exceeding Rs 5(+ Service Tax)
    - For transactions above Rs 1 lakh and up to Rs 2 lakh: not exceeding Rs 15 (+ Service Tax)
    - For transactions above Rs 2 lakhs: not exceeding Rs 25 (+ Service Tax)
  - Charges applicable for transferring funds from India to Nepal using the NEFT System (under the Indo-Nepal Remittance Facility Scheme) is available on the website of RBI at http://rbi.org.in/scripts/FAQView.aspx?id=67

With effect from 1st July 2011, originating banks are required to pay a nominal charges of 25 paise each per transaction to the clearing house as well as destination bank as service charge. However, these charges cannot be passed on to the customers by the banks.

BENEFITS OF USING NEFT

- ✓ The remitter need not send the physical cheque or Demand Draft to the beneficiary.
- ✓ The beneficiary need not visit his / her bank for depositing the paper instruments.
- ✓ The beneficiary need not be apprehensive of loss / theft of physical instruments or the likelihood of fraudulent encashment thereof.
- ✓ Cost effective
- ✓ Credit confirmation of the remittances sent by SMS or email.
- ✓ Remitter can initiate the remittances from his home / place of work using the internet banking also.
- ✓ Near real time transfer of the funds to the beneficiary account in a secure manner.

III. NEFT SYSTEM – PROCESS

STEP -1: An individual / firm / corporate intending to originate transfer of funds through NEFT has to fill an application form providing details of the beneficiary (like name of the beneficiary, name of the bank branch where the beneficiary has an account, IFSC of the beneficiary bank branch, account type and account number) and the amount to be remitted. The application form will be available at the originating bank branch. The remitter authorizes his /her bank branch to debit his account and remit the specified amount to the beneficiary. Customers enjoying net banking facility offered by their bankers can also initiate the funds transfer request online. Some banks offer the NEFT facility even through the ATMs. Walk –in customers will, however, have to give their contact details (complete address and telephone number, etc.) to the branch. This will help the branch to refund the money to the customer in case credit could not be afforded to the beneficiary's bank account or the transaction is rejected / returned for any reason.

STEP-2: The originating bank branch prepares a message and sends the message to its pooling centre (also called the NEFT Service Centre).

STEP -3: The pooling centre forwards the message to the NEFT Clearing Centre (operated by National Clearing Cell, Reserve Bank of India, Mumbai) to be included for the next available batch.

STEP-4: The Clearing Centre sorts the funds transfer transactions destination bank-wise and prepares accounting entries to receive funds from the originating banks (debit) and give the funds to the destination banks (credit). Thereafter, bank-wise remittance messages are forwarded to the destination banks through their pooling centre (NEFT Service Centre).

STEP-5: The destination banks receive the inward remittance messages from the Clearing Centre and pass on the credit to the beneficiary customer's accounts.

INDIAN FINANCIAL SYSTEM CODE (IFSC)

Indian Financial System Code is an alpha-numeric code that uniquely identifies a bank-branch participating in the NEFT system. This is an 11 digit code with the first 4 alpha characters representing the bank, and the last 6 characters representing the branch. The 5th character is '0' (Zero).

IFSC is used by the NEFT system to identify the originating/destination banks/branches and also to route the messages appropriately to the concerned banks/ branches. Bank-wise list of IFSCs is available with all the bank-branches participating in NEFT. List of bank-wise branches participating in NEFT and their IFSCs is available on the website of RBI at http://www.rbi.org.in/Scripts/bs view content.aspx? Id=2009

All the banks have also been advised to print the IFSC of the branch on cheques issued to their customers. For net banking customers many banks have enabled online search/ pop-up of the IFSC of the destination bank branch. Further, banks have also been advised to ensure that their branch staff provide necessary assistance to customers in filling out the required details, including IFSC details, in the NEFT application form, and also help in ensuring that there is no mismatch between the IFSC code and branch details of beneficiary branch as provided by the customer. The structure of charges that can be levied on the customer for NEFT is given below:

- ✓ Inward transactions at destination bank branches (for credit to beneficiary accounts)
  - Free, no charges to be levied from beneficiaries
- ✓ Outward transactions at originating bank branches – charges applicable for the remitter
  - For transactions up to Rs10,000: not exceeding Rs 2.50 (+ Service Tax)
  - For transactions above Rs10,000 up to Rs 1 lakh: not exceeding Rs 5 (+ Service Tax)
  - For transactions above Rs 1 lakh and up to Rs 2 lakhs: not exceeding Rs 15 (+ Service Tax)
  - For transactions above Rs 2 lakhs : not exceeding Rs 25 (+ Service Tax)
- ✓ Charges applicable for transferring funds from India to Nepal using the NEFT system

(Under the Indo- Nepal Remittance Facility Scheme) is available on the website of RBI at http://rbi.org.in/scripts/FAQView.aspx?Id=67

With effect from 1st July 2011, originating banks are required to pay a nominal charge of 25 paise each per transaction to the clearing house as well as destination bank as service charge. However, these charges cannot be passed on to the customers by the banks.

ELECTRONIC CLEARING SERVICE (ECS)

ECS is an electronic mode of payment / receipt for transactions that are repetitive and periodic in nature. ECS is used by institutions for making bulk payment of amounts towards distribution of dividend, interest, salary, pension, etc., or for bulk collection of amounts towards telephone / electricity / water dues, cess /tax collections, loan instalment repayments, periodic investments in mutual funds, insurance premium etc. Essentially, ECS facilitates bulk transfer of monies from one bank account to many bank accounts or vice versa. With a view to upgrading the payment system to international standards, the Reserve Bank took the initiative

and set up Electronic Clearing Service in India, in the mid 1990s, which is the counterpart of the automated clearing house (ACH) system in certain other countries.

It has two variants-ECS-Credit Clearing and ECS-Debit Clearing. While the Credit Clearing operates on the principle of 'single debit- multiple credits' and is used for making payment of salary, pension, dividend and interest, etc., the Debit Clearing functions on the principle of 'single credit-multiple debits' and is used for collecting payments by utility service providers like electricity, telephone bills as well by banks for receiving principle / interest repayments for housing and personal loans from the borrowers.

VARIANTS OF ECS

Primarily, there are two variants of ECS-ECS Credit and ECS Debit.

ECS Credit is used by an institution for affording credit to a large number of beneficiaries (for instance, employees, investors etc.) having accounts with bank branches at various locations within the jurisdiction of ECS centre by raising a single debit to the bank account of the user institution.ECS Credit enables payment of amounts towards distribution of divided, interest, salary, pension, etc., of the user institution.

ECS Debit is used by an institution for raising debits to a large number of accounts (for instance, consumers of utility services, borrowers, investors in mutual funds etc.) maintained with bank branches at various locations within the jurisdiction of an ECS Centre for single credit to the bank account of the user institution.ECS Debit is useful for payment of telephone/ electricity/ water bills, cess/ tax collections, loan instalment repayment, periodic investments in mutual funds, insurance premium etc., that are periodic or repetitive in nature and payable to the user institution by large number of customers etc.

Based on the geographical location of branches covered, there are three broad categories of ECS Schemes- Local ECS, Regional ECS, and National ECS.

- ✓ Local ECS –this is operating at 81 centres / locations across the country. At each of These ECS centres, the branch coverage is restricted to the geographical coverage of the clearing house, generally covering one city and / or satellite towns and suburbs adjoining the city.
- ✓ Regional ECS – this is operating at 9 centres / locations at various parts of the country. RECS facilities the coverage all core – banking –enabled branches in a state or group of states and can be used by institutions desirous of reaching beneficiaries within the State / group of States. The system takes advantage of the core banking system in banks. Accordingly, even though the inter-bank settlement takes place centrally at one location in the State, the actual customers under the Scheme may have their accounts at various bank branches across the length and breadth of the State/ group of States.
- ✓ National ECS – this is the centralized version of ECS Credit which was launched in October 2008. The Scheme is operated at Mumbai and facilities the coverage of all core-banking enabled branches located anywhere in the country. This system too takes advantage of the core banking system in banks. Accordingly, even though the inter-bank settlement takes place centrally at one location at Mumbai, the actual customers under the scheme may have their accounts at various bank branches across the length and breadth of the country. Banks are free to add any of their core-banking- enabled branches in NECS irrespective of their location.

The list of centres where the ECS facility is available has been placed on the website of Reserve Bank of India at http:// www. rbi.org. in/ scripts/ ECSUserView.aspx? Id=26. Similarly, the centre-wise list of bank branches participating at each location is available on the website of Reserve Bank of India at http://www.rbi.org.in/scripts/ECSUserView.aspx?Id =27ECSUser

ECS (CREDIT)

ECS Credit payments can be initiated by any institution (called ECS Credit User) which needs to make bulk or repetitive payments to a number of beneficiaries. The institutional user has to first register with an ECS Centre. The user has to also obtain the consent of beneficiaries (i.e., the recipients of salary, pension, dividend, interest etc.) and get their bank account particulars prior to participation in the ECS Credit scheme.

ECS Credit payments can be put through by the ECS User only through his/her bank (known as the sponsor bank). ECS Credit is afforded to the beneficiary account holders, bank (known as the destination account holders) through the beneficiary accounts bank. (Known as the destination bank). The beneficiary account holders are required to give mandates to the user institution to enable them to afford credit to their bank accounts through the ECS Credit mechanism.

IV. ESC CREDIT-PROCESS

The User intending to effect payments through ECS Credit has to submit details of the beneficiaries (like name, bank/ branch / account number of the beneficiary, MICR code of the destination bank branch, etc.), date on which credit is to be afforded to the beneficiaries, etc., in a specified format (called the input file) through its sponsor bank to one of the ECS Centres where it is registered as a User.

The bank managing the ECS Centre then debits the account of the sponsor bank on the scheduled settlement day and credits the accounts of the destination banks, for onward credit to the accounts of the ultimate beneficiaries with the destination bank branches.

ADVANTAGES OF THE ECS CREDIT SCHEME TO THE BENEFICIARY

- ✓ The beneficiary need not visit his /her bank for depositing the paper instruments which he would have otherwise received had he not opted for ECS Credit.
- ✓ The beneficiary need not be apprehensive of loss / theft of physical instruments or the likelihood of fraudulent encashment thereof.
- ✓ Cost effective.
- ✓ The beneficiary receives the funds right on the due date.

BENEFITS OF ECS CREDIT SCHEME TO USER INSTITUTIONS

- ✓ Savings on administrative machinery and costs of printing, dispatch and reconciliation of paper instruments that would have been used had beneficiaries not opted for ECS Credit.
- ✓ Avoid chances of loss / theft of instruments in transit, likelihood of fraudulent encashment of paper instruments, etc. And subsequent correspondence /litigation.
- ✓ Efficient payment mode ensuring that the beneficiaries get credit on a designated date.
- ✓ Cost effective.

ADVANTAGES OF THE ECS CREDIT SCHEME TO THE BANKING SYSTEM

- ✓ Freedom from paper handling and the resultant disadvantages of handling, presenting and monitoring paper instruments presented in clearing. Ease of processing and return for the destination bank branches.
- ✓ Smooth process of reconciliation for the sponsor banks.
- ✓ Cost effective.

ECS (DEBIT)

ECS Debit transaction can be initiated by any institution (called ECS Debit User) which has to receive/ collect amounts towards telephone/ electricity/ water dues, cess/ tax collections, loan instalment repayments, periodic investments in mutual funds, insurance premium etc. It is a scheme under which an account holder with a bank branch can authorise an ECS User to recover an amount at a prescribed frequency by raising a debit to his / her bank account.

The user institution has to first register with an ECS Centre. The user institution has to also obtain the authorization (mandate) from its customers for debiting their account along with their bank account particulars prior to participation in the ECS Debit scheme. The mandate has to be duly verified by the beneficiary's bank. A copy of the mandate should be available on record with the destination bank where the customer has a bank account.

V. ECS DEBIT SCHEME-PROCESS

The ECS Debit User intending to collect receivables through ECS Debit has to submit details of the customers (like name, bank/ branch/ account number of the customer, MICR code of the destination bank branch, etc.), date on which the customer's account is to be debited, etc., in a specified format (called the input file) through its sponsor bank to the ECS Centre.

The bank managing the ECS Centre then passes on the debits to the destination banks for onward debit to the customer's account with the destination bank branch and credits the sponsor bank's account for onward credit to the User institution. Destination bank branches will treat the electronic instructions received from the ECS Centre on par with the physical cheques and accordingly debit the customer accounts maintained with them. All the unsuccessful debits are returned to the sponsor bank through the ECS Centre (for onward return to the User Institution) within the specified time frame.

For further details about the ECS Debit scheme, the ECS Debit Procedural Guidelines –available on the website of RBI at http://www.rbi.org.in/scripts/ECSUserView.aspx?Id=25 may be referred to.

ADVANTAGES OF ECS DEBIT SCHEME TO THE CUSTOMERS

- ✓ ECS Debit mandates will take care of automatic debit to customer accounts on the due dates without customers having to visit bank branches / collection centres of utility service providers etc.
- ✓ Customers need not keep track of due date for payments.
- ✓ The debits to customer accounts would be monitored by the ECS Users, and the customers alerted accordingly.
- ✓ Cost effective

BENEFITS OF ECS DEBIT SCHEME TO USER INSTITUTIONS

- ✓ Savings on administrative machinery and costs of collecting the cheques from customers, presenting in clearing, monitoring their realisation and reconciliation.
- ✓ Better cash management because of realisation / recovery of dues on due dates promptly and efficiently.
- ✓ Avoids chances of loss / theft of instruments in transit, likelihood of fraudulent access to the paper instruments and encashment thereof.
- ✓ Realisation of payments on a uniform date instead of fragmented receipts spread over many days.
- ✓ Cost effective

ADVANTAGES OF ECS DEBIT SCHEME TO THE BANKING SYSTEM

- ✓ Freedom from paper handling and the resultant disadvantages of handling, receiving and monitoring paper instruments presented in clearing.
- ✓ Ease of processing and return for the destination bank branches. Destination bank branches can debit the customers' accounts after matching the account number of the customer in their database and due verification of existence of valid mandate and its particulars. With core banking systems in place and straight-through-processing, this process can be completed with minimal manual intervention.
- ✓ Smooth process of reconciliation for the sponsor banks.
- ✓ Cost effective.

MICR CODE

MICR is an acronym for Magnetic Ink Character Recognition. The MICR Code is a numeric code that uniquely identifies a bank-branch participating in the ECS Credit scheme. This is a 9 digit code to identify the location of the bank branch; the first 3 characters represent the city, the next 3

the bank and the last 3 the branch. The MICR Code allotted to a bank branch is printed on the MICR band of cheques issued by bank branches.

To facilitate MICR based Cheque Processing, instruments passing through clearing are required to be issued in standard format and defined size of 8*3 2/3'. The instruments should be printed on MICR grade quality paper (the specifications of which are given in Annexure II) with a' ;read band' ; of 5/8'; in width reserved at the bottom on which essential particulars occur in special MICR ink in the E-13B Font. Cheques are printed by approved security printers forming part of a panel which is maintained by the Indian Bank' Association.

The entire process of manual processing of cheques has undergone a sea-change when mechanised processing of cheques using Magnetic Ink Character Recognition (MICR) technology was introduced. This technology was first used in India in the late eighties at the four major metropolitan cities of Mumbai, Chennai, New Delhi and Kolkata.

These centres were set up and are managed by the Reserve Bank of India. The success of these MICR based local clearing processing centres has spurred initiatives on the part of commercial banks for setting up of many more MICR based Cheque processing centres at commercially important centres of the country with the latest state-of-the-art technology. Some centres have also got the facility for 'imaging' which enables capturing of the digital images of the cheques.

Consistent with its philosophy for standardisation of work procedures across different sites, the Department of Information Technology of the Reserve Bank of India has come out with a set of comprehensive guidelines for operating the Mechanised cheque processing systems using MICR technology. This booklet details the procedural guidelines to be followed at the banks and at the Cheque Processing Centres.

Mechanised cheque processing using MICR technology has brought in its wake quicker realisation of cheques, improved customer service and more effective housekeeping at banks. However, full benefits of the technological up gradation in this area would accrue only with full support of all the banks that participate in the clearing operations. Two key parameters, namely low reject rates in MICR processing and low or nil clearing reconciliation entries at banks-should be the indicators on which MICR processing should focus on. Very close adherence to the procedural guidelines offered here will help improve the performance of cheque processing operations and minimise risks.

VI. RTGS SYSTEM

The acronym 'RTGS' stands for Real Time Gross Settlement, which can be defined as the continuous (real-time) settlement of funds transfers individually on an order by order basis (without netting). 'Real Time' means the processing of instructions at the time they are received rather than at some later time; 'Gross Settlement' means the settlement of funds transfer instructions occurs individually. Considering that the funds settlement takes place in the books of the Reserve Bank of India, the payments are final and irrevocable.

DIFFERENCE BETWEEN RTGS AND NATIONAL ELECTRONICS FUNDS TRANSFER SYSTEM (NEFT)

NEFT is an electronic fund transfer system that operates on a Deferred Net Settlement (DNS) basis which settles transactions in batches. In DNS, the settlement takes place with all transactions received till the particular cut-off time. These transactions are netted (payable and receivables) in NEFT whereas in RTGS the transactions are settled individually. For example, currently, NEFT operates in hourly batches. [There are twelve settlements from 8 am to 7 pm on week days and six settlements from 8 am to 1 pm on Saturday.] Any transaction initiated after a designated settlement time would have to wait till the next designated settlement time Contrary to this, in the RTGS transactions are processed continuously throughout the RTGS business hours.

FEATURES OF RTGS

- ✓ Minimum / maximum amount stipulation for RTGS transactions: The RTGS system is primarily meant for large value transactions. The minimum amount to be remitted through RTGS is Rs.2 lakh. There is no upper ceiling for RTGS transactions.
- ✓ Time taken for effecting funds transfer from one account to another under RTGS: Under normal circumstances the beneficiary branches are expected to receive the funds in real time as soon as funds are transferred by the remitting bank. The beneficiary bank has to credit the beneficiary's account within two hours of receiving the funds transfer message.
- ✓ The remitting bank receives a message from the Reserve Bank that money has been credited to the receiving bank. Based on this the remitting bank can advise the remitting customer through SMS that money has been credited to the receiving bank.
- ✓ Funds, received by a RTGS member for the credit to a beneficiary customer's account, will be returned to the originating RTGS member within two hours of the receipt of the payment at the PI of the recipient bank or before the end of the RTGS Business day, whichever is earlier, if it is not possible to credit the funds to the Beneficiary customer's account for any reason e.g. account does not exist, account frozen, etc. Once the money is received back by the remitting bank, the original debit entry in the customer's account is reversed.
- ✓ Availability of RTGS service window: The RTGS service window for customer's transactions is available to banks from 9.00 hours to 16.30 hours on week days and from 9.00 hours to 14.00 hours on Saturdays for settlement at the RBI end. However, the timings that the banks follow may vary depending on the customer timings of the bank branches.

Essential information that the remitting customer would have to furnish to a bank for the remittance to be effected:

The remitting customer has to furnish the following information to a bank for initiating a RTGS remittance:

- ✓ Amount to be remitted
- ✓ Remitting customer's account number which is to be debited

- ✓ Name of the beneficiary bank and branch
- ✓ Name of the beneficiary customer
- ✓ Account number of the beneficiary customer
- ✓ Sender to receive information, if any
- ✓ The IFSC Number of the receiving branch

All the bank branches in India are not RTGS enabled. Presently, there are more than 100000 RTGS enabled bank branches. The list of such branches is available on RBI website at: http://rbidocs.rbi.org.in/rdocs/RTGS/DOCs/ RTGEBO112.xIs

VII. RETAIL PAYMENT SYSTEMS

The retail payment systems in the country comprise both paper based as well as electronic based systems. They typically handle transactions which are low in value, but very large in number, relating to individuals firms and corporate. These transactions relate mainly to settlement of obligations arising from purchase of goods and services. In India there are about 1050 cheques clearing houses. These clearing houses clear and settle transactions relating to various types of paper based instruments like cheques, drafts, payment orders, interest / dividend warrants, etc.

In 40 of these clearing houses, cheque processing centres (CPCs) using MICR technology have been set up. At 14 more clearing houses, MICR cheque processing systems are proposed to be set up. The clearing houses at 16 places including the 4 metros are managed by the Reserve Bank which also functions as the settlement banker at these places. In other places the clearing houses are managed by the State Bank of India and certain other public sector banks and settlement bank functions are also performed by the respective banks. The clearing houses are voluntary bodies set up by the participating banks and post offices and they function in an autonomous manner. The Reserve Bank has issued the Uniform Regulations and Rules for Bankers, Clearing Houses (URRBCH) which have been adopted by all the clearing houses. These regulations and rules relate to the criteria for membership/ sub-membership, withdrawal / removal / suspension from membership and the procedures for conducting of clearing as well as settlement of claims between members.

There are various types of electronic clearing systems functioning in the retail payments area in the country. Electronic Clearing System (ECS), both for credit and debit operations, functions from 46 places. (15 managed by Reserve Bank and the rest by the State Bank of India and one by State Bank of Indore).The ECS is the Automated Clearing Houses (ACH) for catering to bulk payments. The Electronic Funds Transfer (EFT) System is operated by the Reserve Bank at 15 places. This is typical for individual / single payments. These systems are governed by their own respective rules. A variant of the EFT, called the Special Electronic Funds Transfer (SEFT) System is also operated by the Reserve Bank to provide nation-wide coverage for EFT. All these electronic fund transfer systems settle on deferred net settlement basis.

AUTOMATED TELLER MACHINE (ATM)

Automated Teller Machine is a computerized machine that provides the customers of banks the facility of accessing their account for dispensing cash and to carry out other financial & non-financial transactions without the need to actually visit their bank branch. The ATM debit cards, credit cards and prepaid cards (the permit cash withdrawal) issued by banks can be used at ATMs for various transactions.

THE SERVICES / FACILITIES AVAILABLE AT ATMS

In addition to cash dispensing ATMs many services /facilities enabled by the bank owning the ATM such as:

- ✓ Account information
- ✓ Cash Deposit
- ✓ Regular bills payment
- ✓ Purchase of Re-load Vouchers for Mobiles
- ✓ Mini / Short Statement
- ✓ Loan account enquiry etc.

For transacting at an ATM, the customer inserts / swipes his/ her Card in the ATM and enters his/her Personal Identification Number (PIN) issued by his /her bank. PIN is the numeric password which is separately mailed/ handed over to the customer by the bank while issuing the card. Most banks require the customers to charge the PIN on the first use.

The cards issued by banks in India may be used at any bank ATM within India. However the savings bank account holders can transact a maximum of five transactions free at other bank ATMs in a month, which is inclusive of all types of transactions, financial and non-financial, beyond which the customer can be charged by his /her bank.

PAYMENT CARDS

Card-based transactions are registering phenomenal growth in India. Cards, especially debit Cards are becoming the preferred electronic payment mode for both consumers' retailers.

CREDIT CARDS

Credit cards were introduced in India in the late 1980s and have since gained large-scale acceptance. Under the PSS Act, American Express Banking Corp, USA; Diners Club International Ltd, USA; MasterCard International Inc, USA; and Visa World Wide Pte Ltd, Singapore, have been authorised to issue credit cards in India. At end-March 2010, 24.1 million credit cards had been issued by banks in India.

DEBIT CARDS

In recent years, debit card issuance and usage have grown much faster than those of credit cards. Banks in India also offer combined ATM and debit cards. Under the PSS Act, American Express Banking Corp, USA; MasterCard International Inc, USA; and Visa World Wide Pte Ltd, Singapore, have been authorised to issue debit cards in India. 28 At end-March 2010, banks in India had issued 143.0 million debit cards.

PREPAID PAYMENT INSTRUMENTS

Prepaid Payment Instruments are payment instruments with value stored on smart cards, magnetic strips cards, internet accounts, internet wallets, mobile accounts, mobile wallets, paper vouchers and stored value internet payment services. Prepaid Instruments are a convenient cashless payment method and facilities e-payment for goods or services purchased via the internet or mobile phone. The RBI issued guidelines in April 2009 and August 2009 on prepaid payment instruments. Issuers of prepaid payment instruments must be authorised by the RBI under the PSS Act.

VIII. CARD –BASED SYSTEMS

The settlement of transactions with American Express, Visa and MasterCard cards (for credit cards, debit cards and pre-paid cards) takes place in commercial bank money at the respective settlement banks. The RBI regulates the banks issuing the cards. Under the Payment and Settlement Systems Act, payment card systems are also subject to regulation by the RBI. Any new initiatives concerning the card system must be vetted by the RBI before implementation.

Card –based payments now account for a substantial share (56% in terms of volume and 13% in terms of value) of electronic retail payment transaction.

With the increased usage of credit/ debit cards in the country on internet /mobile/ Interactive Voice Response (IVR), an additional level of authentication has been mandated by the RBI. This additional authentication/ validation will be based on information not visible on the cards for all online "card not present" transactions. Also a system of online alerts to the cardholder for all "card not present" transactions has been mandated.

CREDIT CARDS

The term "credit card" usually/ generally refers to a plastic card assigned to a cardholder, usually with a credit limit, that can be used to purchase goods and services on credit or obtain cash advances. Credit cards allow cardholders to pay for purchases made over a period of time, and to carry a balance from one billing cycle to the next. Credit card purchases normally become payable after a free credit period, during which no interest or finance charge is imposed. Interest is charged on the unpaid balance after the payment is due. Cardholders may pay the entire amount due and save on the interest that would otherwise be charged. Alternatively, they have the option of playing any amount, as long as it is higher than the minimum amount due, and carrying forward the balance.

TYPES OF CREDIT CARDS

Credit cards can be broadly categorised into two types: General purpose cards and private label cards. The former are issued under the trademark of credit card associations (VISA and Master card) and accepted by many merchants while the latter are only accepted by specific retailers.(e. g .a departmental store).

Banks in India can undertake credit card business either departmentally or through a subsidiary company set up for the purpose. They can also undertake domestic credit card business by entering into tie-up arrangement with one of the banks already having arrangements for issue credit cards.

Prior approval of the Reserve Bank is not necessary for banks desirous of undertaking credit card business either independently or in tie-up arrangement with other card issuing banks.

Banks can do so with the approval of their boards. However, only banks with net worth of '100 crore and above should undertake credit card business. Banks desirous of setting up separate subsidiaries for undertaking credit card business would, however, require prior approval of the Reserve Bank. Banks should adopt adequate safeguards and implement the guidelines enunciated in this circular in order to ensure that their credit card operations are run in a sound, prudent and customer friendly manner.

Most of the cards issuing banks in India offer general purpose credit cards. These cards are normally categorised by banks as platinum, gold or classic to differentiate the services offered on each card and the income eligibility criteria. Banks may, at the request of a cardholder, issue a supplementary card to another individual who is usually an immediate family member of the cardholder.

DEBIT CARDS AND PRE PAID CARDS

RBI has issued guidelines for the issue of debit cards. The guidelines apply to smart cards/cards encompassing all or any of the following operations –

- ✓ Electronic payment involving the use of card, in particular at point of sale and such other places where a terminal / device for the use / access of the card is placed.
- ✓ The withdrawing of bank notes, the depositing of the bank notes and cheques and connected operations in electronic devices such as cash dispending machines and ATMs.
- ✓ Any card or a function of a card which contains real value in the form of electronic money which someone has paid for in advance, some of which can be reloaded with further funds or one which can connect to the cardholder's bank account (online) for payment through such account and which can be used for a range of purposes.

TYPES OF DEBIT CARDS

Banks may issue only online debit cards including co-branded debit cards where there is an immediate debit to the customer's account, and where straight through processing is involved.

Bank and non-bank entities have been issuing prepaid payment instruments in the country. Hitherto only banks proposing to issue prepaid payment instruments were approaching Reserve Bank for authorization. Consequent to the passing of Payment and Settlement Systems, Act 2007, all non-bank entities currently issuing prepaid payment instruments and those proposing to issue such payment

instruments would have to approach Reserve Bank for authorization. In the emerging scenario, it is imperative to have a set of guidelines for prepaid payment instruments that would cover both banks and non-bank entities, to ensure orderly development and operations of prepaid instruments in the country. Reserve Bank of India has therefore has brought out these set of operating guidelines. These guidelines lay down the eligibility criteria and the basic conditions for issuance of prepaid payment instruments in the country.

IX. MOBILE PAYMENTS

Mobile payments" is defined as information exchange between a bank and its customers for financial transactions through the use of mobile phones. Mobile payment involves debit/credit to a customer's account's on the basis of funds transfer instruction received over the mobile phones.

Mobile payment, also referred to as mobile money, mobile money transfer, and mobile wallet refers to payment services performed from or via a mobile device. Instead of paying with cash, cheque, or credit cards, a consumer can use a mobile phone to pay for a wide range of services and digital or hard goods. Although the concept of using non- coin- based currency systems has a long history, it is only recently that the technology to support such systems has become widely available. SMS based transactional payment is the most commonly used mobile payment model. In this, the consumer sends a payment request via an SMS text message or an USSD to a short code and a premium charge is applied to their phone bill or their online wallet. The merchant involved is informed of the payment success and can then release the paid for goods.

Broader usage of mobile phones has encouraged banks and non-banks to develop new payment services for their customers, usually in cooperation with mobile service providers. Although other countries have adopted mobile phone-based technologies as a way of delivering access to financial services to a broader segment of the population, India has opted for a bank-led model. The rapid growth in mobile phone banking promoted the RBI to issue a set of operating guidelines for banks in October 2008. The guidelines were relaxed in December 2009 to allow mobile banking transactions up to INR 50,000, both for e-commerce and money transfers. Banks are also permitted to provide money transfer facilities of up to INR 5,000 from a bank account to beneficiaries without bank accounts. In such cases, cash can be paid out at an ATM or a banking correspondent. By value, funds transfers account for a much larger share of mobile phone transactions than payments for goods or services. By volume, the reverse holds true. Final settlement of mobile banking transactions is made in central banking money.

Providing the framework for enabling mobile payments services to banking customers would generally involve the collaboration of banks, mobile payments service providers and mobile network operators (MNOs). The service can also be provided as a proximity payment system, where the transactions are independent of the MNOs. In mobile payment systems, the banks provide the basic service frame work, ensure compliance to KYC/AML norms, creates a risk management and mitigation framework, and ensures settlement of funds. The Mobile payments service providers are intermediaries for providing the technology framework for the implementation of the mobile payments services. The mobile network operators provide the telecom infrastructure and connectivity to the customers.

Many banks offer internet banking services, which include access to account information as well as funds transfer between accounts, bill payments and online securities trading. The growing number of internet users and widening reach of internet services will have a significant impact on the way credit transfers are carried out.

X. NATIONAL PAYMENTS CORPORATION OF INDIA

Reserve Bank of India, after setting up of the Board for Payment and Settlement Systems in 2005, released a vision document incorporating a proposal to set up an umbrella institution for all the RETAIL PAYMENT SYSTEMS in the country. The core objective of this was to consolidate and integrate the multiple systems with varying service levels into nation-wide uniform and standard business process for all retail payment systems. The other objective was to facilitate an affordable payment mechanism to benefit the common man across the country and help financial inclusion.

IBA's untiring efforts during the last few years helped turning this vision a reality. National Payments Corporation of India (NPCI) was incorporated in December 2008 and the Certificate of Commencement of Business was issued in April 2009. It has been incorporated as a section 25 company under Companies Act and is aimed to operate for the benefit of all the member banks and their customers. The authorized capital has been pegged at Rs. 300 crore and paid up capital is Rs.100 crore so that the company can create infrastructure of large dimension and operate on high volume resulting payment services at fraction of the present cost structure.

XI. CONCLUSION

Payment systems facilitate the movement of funds from one party to another for discharge of obligations. Payment systems include the actual use of money and money equivalents like cash, cheques, demand drafts, postal orders, money orders and warrants. However, the electronic modes of payments are also very popular. They include ECS, NEFT, RTGS and debit and credit cards. Improvements in communications and electronic connectivity have made electronic payment systems the norm today.

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