RTGS–MERITS AND DEMERITS TO THE RETAIL BANKER



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I declare that project work entitled **“RTGS – Merits and Demerits to the Retail Banker”** is my own work conducted as part of my syllabus.

I further declare that project work presented has been prepared personally by me and it is not sourced from any outside agency. I understand that, any such malpractice will have very serious consequence and my admission to the program will be cancelled without any refund of fees.

I am also aware that, I may face legal action, if I follow such malpractice.

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(Signature of Candidate)

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**INTRODUCTION:**

Real Time Gross Settlement (RTGS) is an electronic form of funds transfer where the transfer

of money takes place on a real time basis. In India, transfer of funds with RTGS is done for higher denomination or high amount of value, the minimum amount being Rs 2 lakh. The beneficiary account receives the funds transferred, on a real time basis. This means transfer of moneys take place from one bank to any other bank on a "real time" and on a “gross" basis.

This system RTGS was introduced in India since March 2004, as explained it is a system through which electronic instructions can be given by banks to transfer funds from their account to the account of another bank. The RTGS system is maintained and operated by the RBI and provides a means of efficient and faster funds transfer among banks facilitating their financial operations. As the name suggests, funds transfer between banks takes place on a ‘real time’ basis. Therefore, money can reach the beneficiary instantaneously and the beneficiary’s bank has the responsibility to credit the beneficiary’s account within two hours. "Gross settlement" means the transaction is settled on one-to-one basis without any bundling or netting with any other transaction. "Settlement" means that once processed, payments are final and irrevocable.

**Inter-Bank Transfers: RTGS**

As we move into the technological era of the RTGS system, all our day to day transactions have moved online, including the money related ones. Money transfer from one bank to another has become far more convenient form with the advent of new technologies assisting in a smooth online money transfer from one banking institution to another. Systems operating under Inter-Bank Transfer, such as, NEFT and RTGS have made lives easier for those who prefer to make monetary transactions without having to physically visit a bank and yet have secure and smooth transition in making and receiving payments. Both NEFT and RTGS are monitored by the Reserve Bank of India itself.

**Recent developments**

Removal of charges for payment services The RBI has waived the processing charge levied on banks for ECS, NEFT and RTGS transactions until March 2011 to encourage the use of electronic payments and allow banks to pass on the benefit to the customers. Similarly, the limits on the size of ECS and NEFT transactions were removed in November 2004 to increase the user base.

**How is RTGS different from NEFT.?**

The transactions done via NEFT are processed in batches.

In RTGS it’s the contrary, transactions are processed continuously on a transaction by transaction basis throughout the RTGS business hours.

**What makes RTGS unique.?**

One of the features of RTGS that make it particularly relevant for modern consumers is that the transactions can be initiated through net-banking.

**DEFINITION OF RTGS:**

RTGS or Real Time Gross Settlement is a system where the funds transfer requests are processed in real time, i.e. as soon as they are received from the remitting bank. Unlike in NEFT, the funds transfer instructions under RTGS are processed individually on order basis. So far, RTGS is the fastest and most secure means of funds transfer in India.

Through RTGS an individual can transfer funds from one bank to another within India on an immediate basis. It is ideally used for high value transactions only. There is a minimum cap of Rupees two lakhs on the RTGS transactions. For any value below that an individual will have to resort to NEFT. Although almost every bank or any other financial institutions deals with the monetary transactions offers RTGS facility to its customers, but RTGS services are not available in all the branches of every bank. There are approximately 100,000 branches across India that offer RTGS services and anyone who is interested in availing it can check whether their branch offers it, either by asking the branch or checking the list available on the official website of RBI.

In some of the countries the RTGS systems may be the only way to get same day clearing of the

funds or money and so may be used when payments need to be settled urgently. Person or beneficiary doing regular payments would not use a RTGS system, but instead would use of automated clearing house that allows participants to batch and net payments. RTGS payments are typically incur higher transaction costs and usually operated by a country's central bank.

Once these settlements are made, the amount transferred is irrevocable. RTGS payments are

generally cleared immediately and are primarily organized with the central bank of the country.

These settlements take place quickly, in real time.

One of the features of RTGS that make it particularly relevant for modern consumers is that the

transactions can be initiated through net-banking. In order to do so, consumers require the

beneficiary’s information so that the transfer can be made to the correct individual.

Some of this information includes:

* The name of the individual or beneficiary
* The beneficiary’s bank IFSC code
* The beneficiary’s account number
* The beneficiary’s bank branch and bank name

Interestingly, consumers can now -a-days also schedule their RTGS payments a few days in

advance. This makes it extremely convenient for employers and organizations to transfer large

funds to their high-value employees.

It reduces counterparty credit risk in payments by settling transactions gross, one by one in real

time, instead of netting payments between counterparties and settling the net amount either at the

end of the business day, or at regular intervals throughout the business day. RTGS is provided,

primarily for high value payments (HVPs), by RTGS systems operated mainly by central banks.

Payments are still netted by automated clearing houses. Through services provided to custodian banks by central securities depositories, the securities markets also rely on RTGS systems to provide final, irrevocable settlement in central bank money of the cash leg of securities transactions. Because they are vital to cash and securities settlements, and also play a vital role in the implementation of monetary policy, RTGS systems are systemically important.

**HISTORY:**

As of in 1985, three central banks had implemented RTGS systems, while by the end of 2005,

RTGS systems had been implemented by 90 central banks including in India.

Vv This was based on a previous method of

transferring funds electronically between US federal reserve banks.

Also, The United Kingdom and France both independently developed RTGS type systems in

the year 1984. The UK system was developed by the Bankers Clearing House in the month of

February 1984 and was called CHAPS. (The Clearing House Automated Payment System) is the real-time gross settlement payment system used for sterling that is for the pounds transactions in the United Kingdom UK.

The French system was called SAGITTAIRE. A number of other developed countries launched

systems over the next few years. These systems were diverse in operation and technology, being

country specific as they were usually based upon previous processes and procedures used in

each country.

In the year 1990s international finance organizations emphasized the importance of large-value

funds transfer systems which banks use to settle interbank transfers for their own account as well

as for their customers as a key part of a country's financial infrastructure. By 1997 a number of

countries, inside as well as outside the group of ten, had introduced real-time gross settlement

systems for large-value funds transfers. Nearly all G-10 countries had plans to have RTGS systems

in operation in the course of year 1997 and many other countries were also considering introducing

such systems

**IMPLEMENTATION OF RTGS IN RETAIL BANKING IN INDIA:**

Due to the peculiar financial environment and practices prevalent in India, certain hard decisions have been taken by the Reserve Bank of India to bring it in conformity with the international practices. The salient features are discussed briefly here below:

An RTGS payment system is one in which payment instructions between the Banks are processed and settled individually and continuously throughout the day, as opposed to the net settlement systems such as paper-based clearing houses. Though many institutions have introduced electronic processors, they have been made compatible to paper-based clearing systems i.e. the processing has been made faster in contrast to the manual clearing. In the prevalent practices, though payment instructions are processed throughout the day, the actual movement of funds between the Banks takes place only afterwards, usually at the end of the day. In contrast, under an RTGS system, the payee banks and their customers receive funds during the day itself. The lag or the lead-time between instruction process and settlement is vastly reduced. This reduces the risk particularly in a large value funds transfer system. Even in real time process and settlement such as an RTGS System, there may be circumstances, which could be a source of risk.

**The Main Features of RTGS Transaction.**

Real-time gross settlement lowers the settlement risk overall, as interbank settlement occurs in real time throughout the day—instead of simply all together at the end of the day. This eliminates the risk of a lag in completing the transaction of funds.

Before using any transaction mode of payments, it is essential to understand all its basic features. This can help us to know exactly what to expect from the transaction, and what steps you must take to ensure its safety uses.

1. **Real-time online fund transfers**:

The RTGS stands for real-time’. This means that it the most reliable fund transfer method when the transfer must be made immediately, or on the same day. In other words, the transactions take place without any delays or long processing periods main benefit of the RTGS is that the banks and their customers can avail of this facility and make instantaneous transfer of funds to beneficiary's account at another bank at a nominal cost. Similarly, the customers of the bank can also get instant transfer of funds to their accounts with certainty.

1. **Used for high-value transactions**

the most important feature of the RTGS fund transfer method is that it is used for high-value transactions. The minimum amount that can be transferred using this method is Rs 2 Lakhs. This method is the most reliable and safest choice among consumers who must make such transactions Payments can be made in India in the form of cash, cheque, demand drafts, credit cards, debit cards and also by means of giving electronic instructions to the banker who will make such a payment on behalf of his customers. Electronic payments can be made in the form of Electronic Funds Transfer (EFT), Electronic Clearing Service (ECS) for small value repetitive payments and through Real Time Gross Settlement (RTGS) System for large value payments. A few banks in India have begun to offer certain banking services through Internet that facilitate transfer of funds electronically.

1. **Safe and secure, with RBI’s backing**

This payment method is preferred for high-value transactions due to multiple reasons – such as quick service and minimal transaction costs. However, the feature that consumers find the most alluring is that it is one of the safest methods of fund transfer available today. What makes this method highly secure and reliable is that it is backed by India’s Central Bank, i.e. the Reserve Bank of India (RBI). This ensures that it is 100% legal and the server that takes care of these transfers is strong and safe from even the most advanced hacking technologies. RTGS systems can contribute substantially to limiting payment system risks. With their continuous intraday final transfer capability, RTGS systems are able to minimize or even eliminate the basic interbank risks in the settlement process. More specifically, RTGS can substantially reduce the duration of credit and liquidity exposures. To the extent that sufficient covering funds are available at the time of processing

1. **Immediate clearing**

RTGS is a quick settlement method and immediately clears the payment from the consumer’s end, taking up to 2 hours to reflect at the beneficiary’s end. The payment is cleared immediately and is irrevocable, making it completely settled as soon as the consumer completes the transaction on his end Importantly, RTGS systems can offer a powerful mechanism for reducing systemic risk. As central banks have a common interest in limiting systemic risk, this capability has often been the key motive for many central banks to adopt RTGS in large-value transfer systems. The appeal of RTGS in terms of systemic risk containment may be better understood by breaking it down into separate elements.

1. **Funds credited on a gross and one-on-one basis**

This is an important feature of RTGS. The funds in this method of fund transfer are credited on a one-on-one basis, which means that the fund transfer takes place only between the two parties involved, i.e. the consumer (giver) and the beneficiary. No third person is involved and the payment, when released by the consumer, reaches directly to the beneficiary on a ˜one-on-one’ basis without bundling or netting with any other transaction.

1. **RTGS operates within the bank hours and on bank’s working days**

Governed by RBI, the fund transfer method is only available when the banks are operating, i.e. during the bank’s working hours and on days that the banks are open. Usually, the working hours for RTGS are 9:00 am 4:30 pm on weekdays and 9:00 am 2:00 pm on Saturdays. However, some consumers consider this to be a major disadvantage since a lot of modern-day payment methods such as UPI work even outside the bank hours. But, RTGS still remains the first choice of many people who need to transfer high-value funds immediately, considering the safety and reliability it offers.

7. **Hybrid feature:**

The RTGS system will have facility to settle transactions on a Gross and off-setting basis (bilateral or multilateral offsetting) basis through its hybrid settlement features. The cycle of offsetting will be notified from time to time by the Bank. The transactions will be settled on a gross basis or liquidity optimization basis depending on priority of the messages in the relevant field tag. The Bank may, at its sole discretion, implement this mechanism after due notification to the members, subject to change from time to time.

**IN AND OUT OF RTGS:**

* The main benefit of the RTGS is that the banks and their customers can avail of this

facilities and make instantaneous transfer of funds to beneficiary's account at another bank

at a nominal cost. Similarly, the customers of the bank can also get instant transfer of

funds to their accounts with certainty.

* RTGS system settles payments on a transaction-by-transaction basis as soon as they are

accepted by the system. RTGS system does not create credit risk for the receiving

participant because the settlement takes place individually.

* On a typical day, RTGS handles about 14000 transactions a day for an approximate

value of Rs.1,50,000 crore

* Money can be transferred to only those Branches of Banks where RTGS facility is

enabled. However, presently Reserve Bank of India has designated as many as 45000

branches.

* As on December 31, 2009 more than 62,000 bank branches are RTGS enabled
* RTGS facility is applicable only within the country.
* Funds can be transferred within India subject to applicability of provision of FEMA.
* As on January 2010, nearly 107 banks participated in RTGS system.
* ‘Real Time’ means the processing of instructions at the time they are received;
* ‘Gross Settlement’ means that the fund transfer occurs individually.
* This is a type of fund settlement process that is used for bank transfers that are high-value. This is because the minimum transaction amount is Rs 2 lakh.
* The system was first adopted by three central banks in 1985.
* Today, there are more than 110,000 RTGS enabled bank branches, making it one of the most popular money transfer methods, owing to its capability of transferring funds on the same day.
* The RTGS system is primarily for large value transactions. Minimum amount to be

remitted through RTGS is Rs.1 lakh. There is no upper ceiling for RTGS transactions



**TERM AND CONDITION OF THE RTGS**

1. Funds Transfer shall be affected only when the destination Bank/ Branch is participating in

RTGS.

2. It is the responsibility of the RTGS Customer to ensure sufficient clear funds in their Account

to carry out the payment instructions given by the RTGS Customer (including service charges)

3. Application Form must be received before the cut off time. If application is received after cut

off time, then transfer of funds shall be affected on the next working day.

4. It is the responsibility of The RTGS Customer to ensure the correctness of the message;

especially the IFSC code of the recipient branch & account number of the beneficiary.

5. It is the responsibility of The RTGS Customer to ensure the genuineness of the transactions

conducted through RTGS & to ensure that no illegal transactions/money laundering transactions

are conducted through RTGS.

6. Once the account is debited, the remitter cannot revoke the given mandate. No Stop Payment

instruction will be entertained by the Bank after debiting the account.

7. If there is a holiday at the Centre where the recipient branch is situated then the credit will be

passed on to the beneficiary on next working day

**How Does RTGS Take Place?**

Real Time Gross Settlement systems are essentially maintained by the Reserve Bank of India. This means that the transactions are highly secure and one does not have to worry about settlement risks. Of course, if the sender does not enter the correct information regarding the beneficiary, they can encounter problems with their payments.

In order to make RTGS payments, you must:

* Log into your net banking account by entering the relevant details
* Select the Funds Transfer Option on your homepage
* Select the RTGS option from the options that you may see
* Enter beneficiary details accurately
* Review the details you have entered to eliminate any scope of error
* Click the submit button

The funds are generally credited on an immediate basis. You may receive a text message on your registered mobile number confirming the transaction. Your beneficiary may also receive a text message confirming whether the transaction has taken place.

**How to transfer funds using RTGS.**

**Procedure of money transfer through RTGS:**

**1.) Activation: -**

The facility for making payment using Internet banking should be activated for conducting RTGS transactions. The RTGS transfer of fund can also be carried out by submitting the remittance form at the remitter's bank branch.

**2.) Beneficiary: -**

The person to whom the payment needs to be made he/she should be added as a 'beneficiary' and his/her bank account details. it includes the following details such as: - the name of the beneficiary account holder, account number, bank and branch name, and the IFSC code of the crediting bank branch.

**3.) Processing: -**

The bank requires 12-24 hours for authenticating the details of the receiver. After such authentication, sum is transferred to the specified account or beneficiary account whom the payment needs to be made.

**4.) Transfer: -**

Select transfer menu (NEFT/RTGS/IMPS), beneficiary name, amount, and the reason/description of transfer. On submission of the details and the security password, the instruction is processed.   
Under normal circumstances the receiving branches are expected to receive the funds in real time as soon as funds are transmitted by the remitting bank. After that within two hours of receiving the message the bank has to credit the amount to the beneficiary’s account immediately.

The sender of the bank gets a message from Reserve Bank that the amount has been credited to the receiving bank. Based on this the remitting bank sends an acknowledgement to the remitting customer that money is delivered. In case the money is not credited on the beneficiary’s account, the crediting bank would have to return the money to the debiting bank within 2 hours. Once the amount is returned, the original debit entry in the customer's account is reversed.

**Transfer funds using RTGS - ONLINE – OFFLINE Methods**

There are two options available for a consumer to choose from when using the RTGS fund transfer system – online fund transfer using RTGS (internet banking) and offline fund transfer using RTGS (by visiting a bank branch).

Although the two options follow a different route, the operation is more or less the same, with more than a few commonalities between the two.

Whether the consumer opts for offline transfer or online transfer, the following set of information is required for RTGS transfer in both cases:

1. Beneficiary account number
2. Beneficiary account name
3. Beneficiary IFSC code
4. Purpose of transaction
5. Cheque in original (If you opt for offline method)

**THE PROCESS TO TRANSFER FUNDS THROUGH RTGS SYSTEM ONLINE:**

1. Login – the consumer must first open the net banking site for the bank that operates his/her funding account and then log in to the net banking account by providing all the credentials
2. Go to transfer option select RTGS the second step is to go to the fund transfer section. To transfer funds through this method, the consumer must select the RTGS option at this stage
3. Add beneficiary the third and the most critical step is to select the beneficiary who will be receiving the transferred funds when the transaction is complete
4. Provide the information (Number, Name, and Purpose & IFSC Code) After selecting the beneficiary, the consumer must provide all the required information mentioned on the page they are at. The consumer must pay extra attention to ensure that all the details filled in are accurate, as any discrepancy in even one field would result in the failure of the transaction
5. Fill the amount after filling in the details of the beneficiary, the consumer must fill in the amount of money that needs to be transferred. Usually, during RTGS fund transfers, the amount is higher than Rs 2 lakh. The consumer must make sure that the amount filled is accurate, because RTGS transfers are settled once completed, and are irrevocable
6. Go through the transaction with transaction password finally, the consumer will be required to enter his/her password in order to authorize the transaction, after which the request will be submitted and the transfer will be processed.

**THE PROCESS TO TRANSFER FUNDS THROUGH RTGS SYSTEM OFFLINE:**

1. Visit bank, the consumer first needs to visit the branch of the bank that operates his funding account
2. Fill the RTGS form with relevant information (Number, Name & IFSC Code) at the bank branch, the consumer needs to ask for an RTGS form, as it is compulsory to fill one to submit a request for an RTGS fund transfer. In this form, the consumer is required to fill all the details of the beneficiary. The consumer must check these details carefully to ensure they are correct
3. Handover a cheque to the bank employee as stated earlier, if choosing an offline method for RTGS fund transfer, the consumer must carry a cheque to the bank. The cheque will be for the amount that the consumer wishes to transfer to the beneficiary. After filling the form at the bank, the consumer will have to hand over this cheque to the bank employee. This completes the consumer’s part in the process
4. Ask for UTR Number for reference. – After giving the cheque, the bank employee will submit and process the request on the online system. This generates a Unique Transaction Reference number, which is given to the consumer to help him/her track the transaction

**Fees or charges for using RTGS:**

None! As a means to promote digital transactions, RBI has scrapped transaction fees for all RTGS transactions, irrespective of your bank.

**Timings associated with RTGS:**

Unlike UPI transactions, RTGS ones can only take place within certain banking hours. During the weekdays, these transactions can occur anytime between 9:00 am and 4:30 pm. During the weekends, these transactions can occur anytime between 9:00 am and 2:00 pm. In that sense, RTGS payments can be slightly restrictive as individuals who miss this time slot must wait until the next day to make their payments.

However, considering that RTGS is not intended for daily payments the way UPI is, this is not a very big problem.

Another essential factor to consider is that not everyone can make RTGS payments. One must have an account with a bank that is RTGS-enabled in order to make such payments.

|  |  |
| --- | --- |
| **Pros** | **Cons** |
| No upper limit | Minimum amount of transfer is Rs 2 lakhs |

**RTGS Service Availability Durations:**

RTGS transactions will be forwarded to RBI based on the following schedule:

|  |  |
| --- | --- |
| **Day** | **Start Timings** |
| Monday to Friday  (Week – Days) | 9:00 am – 4:30 pm  (as per office hours) |
| Saturdays  (Weekends) | 9:00 am - 2:00 pm  (on Saturdays) |

**Note: -** The RTGS transactions will have variations in the transaction processing time depending upon the various bank.



**MERITS OF THE RTGS & TO THE RETAIL BANKER:**

The benefits of RTGS Real Time Gross Settlement (RTGS) is a clumsy term for a crucial process in the financial markets. This is the reduction of counterparty credit risk by the delivery of cash or the delivery of securities in exchange for cash, instantaneously and without the netting of the obligations outstanding between the parties. Since the 1980s, the central banks which operate payment market infrastructures (PMIs)1 around the world have gradually adopted RTGS for the settlement of high value payments (HVP). Their private sector equivalents which settle low value payments (LVP) are also gravitating towards RTGS.

In RTGS settlement, credit risk is reduced because cash is transferred between banks continuously in real time, transaction by transaction. Every payment is settled finally and irrevocably in central bank money, obviating the need to settle obligations between banks in batches on a net basis.

**I. To the economy:**

• RTGS will reduce the systemic risk that exists in the present settlement systems like

cascading effect on banks due to failure of one bank to meet it's settlement commitments.

And there will be easy transaction within the short span of time.

• It improves confidence of outside agencies like world bank in Indian Economy

**II. To the Banks:**

• It offers immediate and irrevocable settlement

• It provides for high value interbank funds transfer

• It has the potential to formulate new products by individual banks based on RTGS.

• The beneficiary branches are expected to receive the funds in real time, soon after the

funds are transferred by the remitting bank

**III. To customers:**

• They can get new banking services based on reliable high value funds transfer system.

• RTGS is supposed to be the faster one as it is done in real time

• This is the fastest possible money transfer system through the banking channel

• Once the funds are credited to the account of the beneficiary bank, the remitting customer

gets a confirmation from his bank either by an e-mail or by a short message on the

mobile.



**How RTGS benefited to the Retail Banker.**

Getting to understand **how to do RTGS**funds transfer is helpful in the long run as everyone prefers instant money transfers, especially for big payments. In fact, the RTGS service has several benefits in Banking areas such as in retail Banking. Some of them are as under:

* Saves time. Previously payments of a huge amount were made via demand draft, which could only be cleared in a period of three days. Now the same can be done within no time through RTGS facilities.
* Saves paper work as earlier bank was doing this mandatory. Without any need for physical documentation, transfers of huge sums can be made instantaneously.
* There is no threat of money being stolen or cheques being forged, since all the process is done online.
* Huge sums of money can be transferred easily, making it easier for bank to run their day to day activities smoothly.
* Helps Retail banks to manage their capital in a much better way.
* There are less chances of counter-party default.
* This in turn also ensures a better supplier- buyer relationship, as a huge sum can be transferred in one go and without any delay.

**DIMERITS OF RTGS**

1.Non customers can not avail this facility

2.This facility is not applicable for the amount less than 1 lakh.

3.It is applicable only with in the country.

**Risks involved in payment systems Payment systems can be subject to a range of risks, including:**

•**Credit risk:**

the risk that a bank will not actually meet a payment obligation incurred by it either when the obligation is due or at a later stage

•**Liquidity risk:**

the risk that a bank won’t meet an obligation at the time it is due, although it will at some point thereafter (as a result of being ‘short of liquidity’)

•**Operational risk:**

the risk that the system breaks down or fails to function and this results in possible financial losses

•**Legal risk:**

the risk that unexpected legal decisions or legal uncertainty more generally will leave the system or its members with unforeseen obligations and possible losses

**Operations of the RTGS System**

RTGS systems are usually operated by a country's central banks as it is seen as a critical infrastructure for a country's economy. Economists believe that an efficient national payment system reduces the cost of exchanging goods and services, and is indispensable to the functioning of the interbank, money, and capital markets. A weak payment system may severely drag on the stability and developmental capacity of a national economy; its failures can result in inefficient use of financial resources, inequitable risk-sharing among agents, actual losses for participants, and loss of confidence in the financial system and in the very use of money.

RTGS system does not require any physical exchange of money; the central bank makes adjustments in the electronic accounts of Bank A and Bank B, reducing the balance in Bank A's account by the amount in question and increasing the balance of Bank B's account by the same amount. The RTGS system is suited for low-volume, high-value transactions. It lowers settlement risk, besides giving an accurate picture of an institution's account at any point of time. The objective of RTGS systems by central banks throughout the world is to minimize risk in high-value electronic payment settlement systems. In an RTGS system, transactions are settled across accounts held at a central bank on a continuous gross basis. Settlement is immediate, final and irrevocable. Credit risks due to settlement lags are eliminated. The best RTGS national payment system cover up to 95% of high-value transactions within the national monetary market.

RTGS systems are an alternative to systems of settling transactions at the end of the day, also known as the net settlement system, such as the bac’s system in the United Kingdom. In a net settlement system, all the inter-institution transactions during the day are accumulated, and at the end of the day, the central bank adjusts the accounts of the institutions by the net amounts of these transactions.

The world bank has been paying increasing attention to payment system development as a key component of the financial infrastructure of a country, and has provided various forms of assistance to over 100 countries. Most of the RTGS systems in place are secure and have been designed around international standards and best practices.

There are several reasons for central banks to adopt RTGS. **First**, a decision to adopt is influenced by competitive pressure from the global financial markets**. Second**, it is more beneficial to adopt an RTGS system for central bank when this allows access to a broad system of other countries' RTGS systems. **Third**, it is very likely that the knowledge acquired through experiences with RTGS systems spills over to other central banks and helps them make their adoption decision. **Fourth**, central banks do not necessarily have to install and develop RTGS themselves.

**Management of the RTGS System**

**Governance: Constitution of Standing Committee**

The Bank shall constitute a Standing Committee for the management of the RTGS system. The Standing Committee shall consist of the following members, namely:

I.) a President;

II.) representative each from

* Department of Payment and Settlement Systems (DPSS);
* Department of Information Technology (DIT);
* Department of Government and Bank Accounts (DGBA);
* Internal Debt Management Department (IDMD);
* Financial Markets Department (FMD);
* Department of Banking Operations and Development (DBOD);
* Legal Department (LD) and any other Department of the Bank.

iii.) A member representing State Bank of India and its associate banks.

iv.) Two members representing all the nationalized banks as a distinct group.

v.) one member each representing

* all foreign banks as a distinct group
* all private banks as a distinct group
* all banks, other than those mentioned above, as a distinct group
* all Primary Dealers as a distinct group
* clearing houses like CCIL and NPCI
* SEBI approved entities permitted to access RTGS system
* Any other distinct group as approved by the Standing Committee

The President shall be the Regional Director, Reserve Bank of India, Mumbai or such other authority from the Bank, as may be nominated by the Bank, from time to time. The secretarial assistance to the Standing Committee will be provided by the office of the President.

**RTGS Membership Type**

1.) In the country, entities in the banking and financial sector, RTGS membership is granted as well as membership type is assigned. The transaction types for which RTGS member is eligible under the RTGS System is determined by the membership type of each RTGS member. RBI will choice the membership type which will be assigned. Unless stated otherwise, the RTGS members will fall into the following membership types:

a) **Membership Type ''A''** –

For Membership Type “A”, all the Scheduled Retail Banks, including the Scheduled Cooperative Banks is eligible. RTGS members will be eligible for all types of RTGS Transactions including customer-based RTGS Transactions. RTGS Members will have a PI each. RTGS Members will be eligible for Intra-day Liquidity support from the RBI. As specified by the RBI, all RTGS members will require to have the infrastructural facilities. To continue for eligibility for participation in the RTGS System, it should be done time to time.

b) **Membership Type ''B''** -

For Membership Type ''B'', all the Primary Dealers will be eligible. RTGS members will be eligible for all types of RTGS transactions but not the customer-based RTGS transactions. RTGS Members will have a PI each. RTGS Members will be eligible for Intra-day Liquidity support from the RBI. RTGS members will require to have infrastructural facilities. As specified by the RBI, all RTGS members will require to have the infrastructural facilities. To continue for eligibility for participation in the RTGS System, it should be done time to time.

c) **Membership Type ''C''** –

For Membership Type “C’’, a Retail bank or a Primary Dealer who is operating in Call Money Market, who is maintaining one or more Current Accounts in the Deposit Accounts Department, in RBI, Mumbai, will be eligible. RTGS Member will not have a PI. RTGS member will not be eligible for Intra-day Liquidity. RTGS Member will avail all RTGS facilities only through Sponsor Banks. Sponsor Banks can only be Type “A” RTGS Members. For Type ''C'' members, RBI may offer to be a sponsor bank. All the Type ''C'' members is required to have sufficient funds in their respective Current Accounts or fully guaranteed credit lines as arranged with their respective Sponsor Banks. Each Type ''C'' Member will have one Sponsor Bank at a time.

d) **Membership Type ''D''** –

For Membership Type ''D'', all the Clearing Entities such as taking care of Net Settlement Clearings will be eligible. From the RBI, each such member will have a Net Settlement Interface software. Whatever the case may be, for settlement and to receive notifications in respect thereof including broadcast, if any, each Type ''D'' Member has to submit Multilateral Net Settlement Batches (MNSBs) to the Central System.

2.) New membership types a defined by the RBI. At any point of time, it can invalidate an existing membership type/member. Available to a member/membership type at any point in time, it may also, at its option can change/restrict the facilities/transaction types.

3.) As a type ''A'' member, being the Service Provider, the Reserve Bank of India, Mumbai will also participate in the RTGS System.

**Tenure of members:**

The tenure of members from distinct bank group, other than the Bank shall be for 1 year and shall be substituted by another member of that distinct group each year. The tenure of the representatives of the Bank shall be, as may be decided by the Bank, from time to time.

**Frequency of meeting:**

The Standing Committee shall meet on a need-based basis but at least once every year.

The Standing Committee shall take decisions by majority of the members present in a meeting or by circulating among the members, the agenda items and the proposed resolutions, as may be deemed fit and proper by the President of the Standing Committee.

1. The President of the Standing Committee shall convene and preside over the meetings of the Standing Committee and arrange to furnish a copy of the decisions taken by the Standing Committee to all members of RTGS System.
2. The quorum for any meeting shall comprise of the President, one of the representatives from among the members and not less than two members from among the representatives referred to in clauses (c), (d) or (e) of paragraph of these Regulations, for conducting the business of the Standing Committee.
3. In the absence of the required quorum, the meeting shall stand adjourned and the President shall have the power to re-convene the meeting at any time later either on the same day or any other subsequent day.
4. Each member present shall have one vote. The President shall have a casting vote in case of a tie.

**Functions of the Standing Committee**

The functions of the Standing Committee shall include the examination, clarification, and recommendation of proposals to DPSS Central Office relating to:

1. Such issues, as it may deem fit and proper for the smooth, satisfactory and proper functioning of the RTGS System.
2. Suggestions made by the participants of the RTGS System, received at least seven days before the meeting or if otherwise permitted by the Chair.
3. Such other matter as may be referred to it by the Reserve Bank of India.

**Communication Between the Pi Participant Interface (Pi) -RTGS Client for The Participating Banks and Central System.**

1. Only through the PI, each RTGS member who has a PI will communicate with the Central System. With the IFTP system of the Central System, each RTGS member will communicate only through their PI.

2. **Mode of communication:**

All the interactions between the IFTP System and the PI will be through pre-defined messages only. The Indian Financial Network (INFINET) or any other communication network, as may be specified by the Retail Bank for the purpose from time to time, will be the communication backbone for all such interactions.

3. **Security of communication**:

For ensuring security of message transfer, All the messages between the PI and the IFTP System will be digitally signed and encrypted. Any message from any PI which does not meet the security requirements, the IFTP System will not except for further processing. Any message from a PI to the IFTP will be digitally signed and encrypted by the PI. Similarly, any message from the IFTP to the PI will be digitally signed and encrypted by the IFTP. A pair of signing and encryption certificates from the Institute for Development and Research in Banking Technology, Hyderabad Certifying Authority (IDRBT CA), following the IDRBT CA Certification Practice Statement (CPS), each PI should have them.

4. **Format for communication:**

All messages between the PI and the IFTP system will be exchanged only in the message formats, supplied to the RTGS members by the Retail Bank. It will not accept any other message format for processing. Retail Bank may introduce new message formats for use under the RTGS System.

5. **Unique Identification for Messages:**

Every message, released by the PI to the IFTP system, will be assigned a Unique Transaction Reference (UTR) before it is released. A message, not containing a UTR, will not be processed by the IFTP System. However, if the message originates from any other source (internal application) of the RTGS member, the above source itself will be required to allocate a UTR to the message. Such a message will be routed to the IFTP system through the RTGS Member’s PI only. Further, every message, released by the PI to the IFTP system, will be assigned a Sequence Number (SN). Any message, received at the IFTP system with a SN, which is not the next expected SN from the concerned PI, will not be processed by the IFTP System.

6. **Transaction Type Code (TTC):**

The RTGS system uses a Transaction Type Code (TTC) to identify the type of individual payment messages that is allowed for the particular type of payment transaction. The TTC values are in the range of “0000” to “9999”. The list of active TTCs has been given in Annex 4. Participants can also check the list online with the web front-end of RTGS application. TTC value shall be part of the message content. The Bank will have the right to change the list of TTC values from time to time.

7. **Duplicate Handling**:

If a message is received by the IFTP system with a UTR, which was received earlier and if the contents of the message are the same as that of the earlier message received from the PI, the message will be treated as a duplicate and will not be processed by the IFTP System. In case a response to the earlier message has already been sent, the same response will be sent again, after being marked as a potential duplicate. If the contents of the message, with the same UTR as that of the one received earlier, are different from those of the earlier message, the receipt of the message at the IFTP System will be treated as a security breach and the IFTP-PI link will be logically severed. However, the PI system has been so designed under the RTGS System as to ensure that the possibility for the occurrence of a duplicate message is very low.

**Settlement Account & Funding Account**

With the Deposit Accounts Department, RBI, Mumbai, all the RTGS Type ''A'' and Type ''B'' members will be eligible for a separate each account, called the ''Settlement Account''. Each RTGS member on its admission as an RTGS member, this ''Settlement Account'' will be opened by Retail Bank for them.

When bank will notify from time to time, the Settlement Account will be used entirely for the purpose of the settlement of the RTGS transactions or any other purposes. Through their respective current accounts, the Bank at its choice can settle any RTGS transaction(s) of the RTGS Members. The settlement of such transactions will be notified to RTGS Members.

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The RTGS member’s Settlement Account will be funded at the RTGS beginning-of-day from the RTGS member's Funding account i.e. a Current Account maintained with the Deposit Accounts Department, RBI, Mumbai. Will appoint as the Funding Account for the purpose by the RTGS member. In favor of RBI, Mumbai, to debit its current account and credit its Settlement Account, the RTGS member will provide a duly authorized authority in the form of a Standing Instruction, in the prescribed format.

At the RTGS beginning-of-day, the authority for funding the Settlement Account will specify the funds that are to be transferred from the Funding Account to the Settlement Account. One of the following options in this regard is indicated by the RTGS member in this authority.

a) **Amount**:

The actual amount of funds to be transferred from the Funding Account to the Settlement Account.

b) **Residual Amount in the Funding Account**:

The minimum amount, which must always remain in the Funding Account thereby making available funds above this amount in the Funding Account for transfer to the Settlement Account.

c) **Percentage of the Available Funds**:

A specified percentage of the balance in the Funding Account for transfer to the Settlement Account.

d) **Percentage above Residual Amount:**

A specified percentage of the balance, above a specified minimum amount in the Funding Account, will be transferred to be Settlement Account.

For the present, option (a) above will be available to the RTGS members, the Bank at its choice can only offer a choice of the above four options to the RTGS members at any point of time.

At the RTGS End of Day, the balance in the Settlement Account will be moved back to the Funding Account of the RTGS member. At the start of the RTGS Business day, the RTGS members has an option of not transferring any amount to the settlement account. At the beginning of any RGTS business day, any member with the RTGS Settlement account can start with a zero balance.

**TRANSACTION TYPES**

The following base transaction types will involve the respective Settlement Accounts/Current Accounts of the RTGS members by the process of settlement or otherwise.

**a) Inter-institutional transactions -**

Funds transfer purely between two RTGS members / participants.

**b) Customer transactions** -

Funds transfer / receipt on behalf of the customer of a RTGS participant member.

**c)** **Delivery versus Payment transactions -**

A transaction involving funds in one leg against delivery of securities on the other leg. (A securities settlement mechanism that links a securities transfer and a funds transfer in such a way as to ensure that delivery occurs if and only if the corresponding payment occurs.)

**d**) **Own Account transfers Transactions -**

Transfer of funds by a member between RTGS settlement account and the current account maintained with the Bank

**e) Multilateral Net Settlement Batches (MNSB) Transactions -**

The file containing net settlement position of clearing participants of an ancillary payment system managed by a clearing house.

**f)Government transaction –**

Funds transfer/receipt on behalf of Government Accounts by a participating member.

***g*)** **Own Account Transfer *(OAT)* –.**

Return Payment Transactions– Credit transfer received by a participant through RTGS that could not be credited to an account specified in the message to be returned to sending member.

To undertake all or a subset of the above transaction types which is governed by its RTGS membership type is the eligibility of a RTGS member.

**Defining new Transaction Types:**

(In the RTGS System, new transaction types can be defined by the Retail Bank. The definition of the new transaction type will be notified to the RTGS members. Each new transaction type will be based on one of the base transaction types and will be associated with the base transaction type through code words. With the same base transaction type, each transaction type may differ from the other transactions type(s), in association with respect of default priority, operating and settlement sessions and is countable for Intra-day Liquidity

(ii) The code words, identifying a transaction type, will be inserted in the Field (Sender to Receiver Information) of the payment message in the format specified for this purpose. On the receipt of a payment message, the Central System will assign a transaction type to the transaction, based on the code words in the message.

**Priority of Transactions:**

(I) Before payment transaction can be taken up for settlement by the RTGS System, each payment transaction, originating from a PI (except an MNSB) must be assigned a priority, The same priority can be assigned to more than one transaction. In such cases such transactions shall be settled on the first-in-first-out basis.

(ii) The available range of priority is 01-99. The lower is the assigned number, the higher will be the priority. A priority range of 01-10 is reserved for use by the Retail Bank and these priority numbers will not be available for use by an RTGS member. The Retail Bank reserves the right to change the reserved priority range at any time and such a decision will be final.

(iii) The RTGS member may assign a priority to a payment transaction from the PI before releasing the transaction to the IFTP System. Each transaction type is associated with a default priority. If no priority has been assigned to a payment transaction, the IFTP System will assign the default priority.

**SENDING MESSAGES TO THE IFTP SYSTEM**

1. **Sending Payment Messages to IFTP System:**

Through the IFTP System, an RTGS Member can send different kinds of payment messages (transactions) to the RTGS System. The payment transactions can be one of the following types:

a) To make payments by debit and credit to the Settlement Account of any RTGS member (either inter-bank fund transfer or customer based inter-bank fund transfer transactions).

b) To transfer funds between its own accounts (between its Current Account and Settlement Account or between two of its Current Accounts, all maintained with the Deposit Accounts Department, RBI, Mumbai).

c) To send Multilateral Net Settlement Batch transactions for settlement in the RTGS System (in case of Type ''D'' members only).

2. **Sending other Messages to the Central Systems:**

To the Central Systems, a Type ''A'' or Type ''B'' member may use its PI to send different kinds of messages such an enquiry messages, transaction cancellation messages, re-prioritization messages etc.

3. **Receipt of Payment message in the IFTP System and its Acknowledgement:**

(I) Messages received by the IFTP System will be acknowledged by the IFTP System, after subjecting the message to a set of security, format and business validations. A positive IFTP acknowledgement will be sent to the PI originating the message, indicating that the message has been accepted for further processing. A negative IFTP acknowledgement will be sent in case the message cannot be accepted for further processing and an appropriate reason code, indicating the reason for the failure of acceptance by the IFTP System, will be specified in the acknowledgement (message).

(II) A positive IFTP acknowledgement doesn’t mean that the message(transaction) has been processed or will be taken up for processing. Also, the transaction may be rejected by the RTGS system for validation failures, subsequent to dispatch of a positive IFTP acknowledgement (e.g. if a payment message is received by the RTGS System outside a valid operating session or a cancellation message is received for a transaction, which has already been settled).

(iii) A negative IFTP acknowledgement, which indicates a potential security breach, may result in the IFTP-PI link being logically severed after a control message is sent, indicating the reason for the logical link severance. The reasons include:

a) Failure of signature verification;

b) Receipt of a message with the same UTR as in the case of a previously received transaction, but with a different message SN or transaction details;

c) Receipt of a message with the same UTR as in the case of a previously received transaction, but with different contents;

d) Receipt of a message with a SN, which is not the same as the next expected SN; and

e) Receipt of a message with a SN, which is the same as in the case of a previously received message, but with a different message content.

**Settlement of Transactions**

1**. Settlement of transactions**:

(I) A payment transaction is considered to have been settled when the Settlement Account or the Current Account (of a Type ''C'' member) of the RTGS member (which is to be debited through the transaction) is debited. The Settlement Account (Current Account of a Type ''C'' Member) of the RTGS member (who is to be credited through the transaction) is credited.

(II) Only if there is sufficient balance in the Settlement Account, a transaction will be settled, which has to be debited. Depending on the properties of the transaction type of the payment message, the transaction will be rejected or placed in the RTGS member's logical payment queue in the RTGS System,

(III) On settlement of transactions, all the RTGS members, whose Settlement Accounts have been debited/credited, will be notified by the Central System, provided the RTGS members have a PI each.

**2.** **Finality and Irrevocability of Settlement**:

While settlement, the settlement of a payment transaction will be final and irreversible, excepting for un-clear credits in respect of the MNSB transactions.

**3**. **Multilateral Net Settlement Batches (MNSB**):

(A) Through the RTGS System, all MNSB transactions (arising out of Net Settlement Clearings of Type ''D'' Members) will be settled. These include net settlement batches arising from Cheque Clearing Operations, Foreign Exchange Clearings, Electronic Funds Transfer, Electronic Credit and Debit Clearings, Government Securities Clearings and any other MNSBs, as decided by the RBI from time to time.

(B) Only by the Type ''D'' members, MNSB transactions will be submitted to the IFTP system through their respective Net Settlement Interfaces. As in case of other RTGS transactions requests these transactions will be subject to the business, format and security validations.

(C) All MNSB transactions will settle in a batch mode. All the transactions in the batch will be put through or none at all. Each MNSB transaction will be required to be settled in a defined settlement window (to be defined by the RBI), which begins from the time the batch is received for settlement in the RTGS System. During the settlement window, the batch will be periodically re-tried for settlement. The length of the settlement window and the periodicity of the re-tries will be defined by the RBI. An MNSB transaction, which cannot settle during this window, is liable to be cancelled. In the event of the cancellation of an MNSB, the batch will be sent back to the originating Clearing Entity, which will then initiate necessary action, as provided for under the rules and regulations governing the Clearing Entity.

(D) The RTGS members, who have to meet a net debit obligation under a particular MNSB transaction, must ensure that sufficient funds are available in their respective Settlement Accounts (Current Accounts in case of type ''C'' members), when the MNSB transaction is received for settlement and at every point of time, when the batch is applied/re-tried for settlement. In case an RTGS member does not have sufficient available balance in its Settlement Account/Current Account to meet its debit obligation during the settlement window at the point of submission for settlement or re-try, a shortfall notification will be sent to the RTGS member intimating to the RTGS member about the shortfall. Any delay in the settlement of an MNSB transaction, due to failure on the part of an RTGS member/s to provide adequate liquidity to meet their respective debit obligations, will be viewed seriously by the RBI.

(E) To cancel an MNSB transaction, no Clearing Entity will be permitted, once it has been received by the Central Systems. Only the RBI can cancel an MNSB transaction.

(F) In case of the MNSB transaction/s with associated return or MNSB transaction/s with dishonor period, any credits accruing to an RTGS member will be treated as "uncleared" credit and will not be allowed to be withdrawn by the RTGS Member till the associated return MNSB transaction has been applied and settled or the dishonor period, if any, therefor has expired.

(G) The MNSB transaction/s with associated sponsorship arrangements/lines of credit will be able to make use of the sponsorship arrangements/lines of credit only during the last settlement attempt in the settlement window, as defined for the MNSB transaction.

(H) The RTGS members, including the Clearing Entity, which submitted the MNSB transaction for settlement, affected by an MNSB transaction, will be notified by the IFTP system on settlement/failure of each settlement attempt of the MNSB transaction. In case of failure of an MNSB transaction, the Clearing Entity will be notified of the reason for failure, including details of the clearing participants, who failed to meet their debit obligations as well as the actual amount of shortfall. In case an MNSB transaction is settled by the invocation of sponsorship arrangements/lines of credit, the Clearing Entity will be notified of the clearing participants in whose accounts there was a shortfall, the amount of the shortfall in each such clearing participant''s account, the sponsor/s from whom funds had been invoked to settle the MNSB transaction and the amount invoked from each such sponsor.

**4** **Un-cleared Funds Account:**

(A) RTGS member who participates in a clearing settlement with associated returns or in a clearing settlement, which has an associated dishonor period, must designate an Un-cleared Funds Account, at the time of being granted the status of an RTGS member. The Un-cleared Funds Account is a Current Account, maintained by the RTGS member in the Deposit Accounts Department, RBI, Mumbai.

(B) Any credit accruing to an RTGS member from any clearing settlement, which is not complete (i.e. subsequent return clearing settlement/s are expected or the dishonor period is yet to expire), will be treated as un-cleared funds. No withdrawals will be allowed against such credit.

(C) The un-cleared credit will remain to the credit of the Un-cleared Funds Account till the funds become clear, which is the last return, associated with the clearing settlement, has been received and settled or the associated dishonor period has expired. Debits accruing to a member from an MNSB return transaction will be applied first to the un-cleared credit, of the clearing participant from the original MNSB transaction.

(D) On completion of the clearing cycle (settlement of the associated return clearing), the credit balances in the un-cleared funds will be transferred to the clearing person’s Settlement Account or Current Account, whatever the case will be.

5. **Queuing Mechanism:**

Unsettled payment transactions, if so configured by the member / or by default, will be maintained in the RTGS system in a logical Payment Queue, pending settlement. The queue will be ordered by priority numbers of the transactions and, within a priority number, by the time of receipt in the RTGS System. No transaction will be taken up for settlement unless it is at the top of the payment queue, though members may, by cancellation or re-prioritization of such unsettled transactions in the Payment Queue, change the order of the transactions waiting in the payment queue. An MNSB transaction, at the time of a settlement attempt, will override the priority and/or First In First Out (FIFO) order of all other transactions in the payment queue.

6. **Gridlock Mechanism:**

(A) The Retail Bank may, at its sole discretion, invoke the Gridlock resolution mechanism of the RTGS System to settle queued transactions at periodic intervals. The Retail Bank is, however, in no way, obligated to invoke this mechanism to settle queued transactions and no member of the RTGS System can claim any right to have its payment transactions settled through the Gridlock resolution mechanism. Further, all the RTGS members, non-settlement of whose transactions had led to the invocation of the Gridlock Resolution Mechanism, may be penalized, as decided by the Bank. The decision of the Bank shall be final.

(B) The MNSB transactions will not be eligible for settlement through the Gridlock resolution mechanism.

7. **Incoming Payments:**

No RTGS member will be able to view its incoming transactions (incoming credits), before such transactions are settled.

**THE RTGS SYSTEM PROCESS FLOW**

The RTGS business day starts at 09:00. Customer and interbank transactions can take place from the start of day to 16:30 and 18:00 respectively on weekdays and to 13:30 and 15:00 respectively on Saturdays. The IDL facility is available during these business hours.

A payment instruction is sent by a member through its PI, and is validated and acknowledged by the IFTP. It is then forwarded by the IFTP to the RTGS, which maintains the settlement accounts of the participants where the funds transfer actually takes place. In the RTGS, the availability of funds in the settlement account is checked, the funds are transferred (settlement takes place) provided balances are sufficient, and a message is sent to the IFTP for onward transmission to the beneficiary bank.

If sufficient funds are not available in the settlement account of the paying bank, the payment instruction is put in a queue that is processed on a first in, first out (FIFO) basis. Payment instructions can be assigned a priority by members (who can change these priorities until settlement). Instructions with a higher priority are processed first, while FIFO is applied to payment instructions with the same priority.

When a payment instruction is found pending in the queue, a message is sent to the SSS asking for the availability of eligible securities in the member’s IDL-SGL account, for triggering IDL. If securities are available, the SSS uses them as collateral and a confirmation is sent to the RTGS system, where the necessary funds are made available and the payment is processed. When securities are not available, the SSS sends a message to the RTGS system and the payment instruction is put back into the queue.

At pre-scheduled intervals, the IDL reversal is activated to check for outstanding IDL utilized by members. If sufficient balances are available in a member’s settlement account, the funds are utilized to reverse the IDL and a message is sent to the SSS to release the securities held as collateral into the member’s IDL-SGL account. These securities then become available for other uses. Half an hour before the close of the RTGS business day, new IDL provision to members stops and members must return all outstanding IDL by the end of the day.

**CREDIT AND LIQUIDITY RISK**

Settlement of transactions in RTGS on a gross basis eliminates credit risk. Liquidity risk is mitigated by the provision of IDL, which facilitates smooth settlement of transactions in the system. Now that the RTGS system is operational, the priority is to integrate other payment systems through the RTGS to mitigate the credit and liquidity risks present in those systems, as well as to promote efficient liquidity management by the participants. To this end, interfaces have been built with the securities settlement system and the foreign exchange transactions settlement mechanism. The settlement of these transactions now takes place in the RTGS system, as does the settlement for CBLOs. The settlement of the clearing operations at Mumbai for cheque-based (MICR clearing) and electronic clearing (ECS in Mumbai, NECS and NEFT) is settled in RTGS as a multilateral net settlement batch (MNSB). In addition to providing an interface to the RTGS system for various payment and settlement systems in the country, the integration of the RTGS system with the RBI’s internal accounting system (IAS) facilitates the movement of funds between the RTGS settlement accounts of members and their current accounts held with the RBI using straight through processing (STP).

**THREATS OF RTGS SYSTEM**

Threats to RTGS systems as the systemic importance of RTGS systems has increased, so has the risk that their integrity and security will be compromised. Although none of the threats they face are entirely new – they include the familiar challenges of natural disasters, loss of essential services, data corruption, cyber-attacks, unavailability of staff, component malfunction, terrorism and war their potential to disrupt vital payment services, and their probability of occurrence, have increased significantly in recent years.

**1.) Natural disaster (earthquake, Fire or Flood)**

Any infrastructure is vulnerable to natural disaster. But when the principal and back-up sites of a PMI are located in the same country or region, the impact of a major natural disaster, such as an earthquake or a flood that disrupts the power grid, or overwhelms the entire geographical area, means all the sites of the RTGS are likely to be out of operation.

**2.) Loss of essential services (Power grid, telecommunication or water)**

Power grids, telecommunications networks and water supplies are all essential services, without which an RTGS system is unable to function. All of these services are vulnerable to disruption by extreme weather conditions, or terrorist attack, but these risks can be mitigated effectively through the provision of alternative sources of supply, or through geographic separation of facilities.

**3.) Hardware components or software components failure (Failure of system due to technical problem)**

RTGS systems are vulnerable to the failure of technical components. Moreover, this risk is doubled if back-up facilities are based on the same technologies as primary and secondary sites – and almost all are.

**4.) Data corruption (Malicious attacks or inadvertent error causing corruption or loss of data)**

The information stored and managed by an RTGS system is subject to data corruption. A malicious attack or an inadvertent error by maintenance staff can cause the corruption or loss of data, or even complete system failure. In addition, as a typical RTGS replicates its data across both its primary and secondary sites, the corruption of data at one site almost invariably leads to the corruption of data at the second site.

**5.) cyber-attacks. (Deliberate attempts to steal information or to control of system)**

As an important part of the financial markets, RTGS systems are an obvious target of cyber-attacks. Deliberate attempts to steal information from RTGS systems, or to take control of their systems, are increasing in volume and complexity. They aim to exploit three vulnerabilities: confidentiality, integrity and availability. Attacks on confidentiality aim to steal valuable information. Those on integrity aim to penetrate the systems and alter information or processes without affecting the operation of the system at all. An attack on availability aims to achieve the more straightforward objective of causing the system to stop working. Cyber-attacks are now one of the threats posed by terrorist groups, which aim to intimidate governments or populations by shutting down a crucial national infrastructure.

**6.) Terrorist attack or war (attack by hostile third party)**

The strategic profile of RTGS systems makes them ideal targets for attack by hostile third parties, as acts of terrorism or war, either as part of a concerted physical and digital assault, or as a less destructive means of coercing a government or population. In wartime, opposing forces have always fought to destroy or disable infrastructures that are vital to the ability of an enemy country to sustain military, industrial or civilian morale.

**7.) Unavailability of staff (lack of staff)**

Like any organization, RTGS systems rely on key staff to operate, so the loss or unavailability of employees is a potentially significant threat. Employees may be unable to reach the office because transport networks are down, or choose in difficult circumstances to stay with their families. The Federal Reserve, for example, concluded that the cardinal lesson of 9/11 was the need to disperse its staff and facilities geographically. Hurricane Sandy, in which the Fedwire system operated faultlessly throughout, vindicated that investment

**THE CONSEQUENCES OF RTGS FAILURE**

If any one of the threats to the security or integrity of an RTGS system is realized, the likelihood is that the ability to send and receive payments will be disrupted. In those circumstances, banks will have to continue to make payments bilaterally, and without having access to liquidity trapped in the disrupted RTGS system.

If any bank does not have sufficient liquidity to meet its obligations, it will be forced to go into the market and borrow. In the middle of a crisis, the cost of borrowing is likely to be high and rising.

If a brief disruption to an RTGS system is costly, a prolonged failure would be catastrophic. When banks are unable to makes transfers, the commerce of entire economies slows down, and eventually halts. The money and securities markets, in which governments finance their expenditure, would also slow down and potentially dry up as the reintroduction of credit risk led to a loss of confidence. The equity markets would seize up. Confidence in the economic health of any country affected by the disruption of its RTGS system would evaporate, and its currency would likely collapse.

**CONCLUSION:**

RTGS is a convenient transaction mode that is ideal for high-value transactions. As it does not have an upper limit, individuals can use this form of payment for large investments and payments quite easily.

As a means to promote digital transactions, RBI has scrapped transaction fees for all RTGS transactions, irrespective of your bank.

RTGS fund transfer is an easy, quick and efficient method of transferring funds from one account to another.

This method is the most reliable method and the most popular choice when the fund transfer is for a large amount of money.

Having said that, if one wants the ease of making payments at any given time, then perhaps RTGS is not the way to go unless you can be absolutely sure that all your payment needs can be taken care of within the banking hours.

It is a great option for situations when the money needs to be transferred on the same day, as the transaction usually reflects in the beneficiary’s account within 2 hours of initiating the same. RTGS fund transfer is only applicable during banking hours and on the days when the banks are operating.

**RECOMMENDATION:**

Unlike other mode of transaction transactions, RTGS ones can only take place within banking hours.

RTGS is one of the most reliable fund transfer methods available today, with most people choosing it for its real-time fund transfers without any long waiting periods or delays. The payment method is often compared to NEFT, however, RTGS is generally preferred whenever it comes to making high-value transactions.

One must have an account with a bank that is RTGS-enabled in order to make such payments.

Whereas in the advent of new technology, it is necessary and expedient to set up the new Real Time Gross Settlement (RTGS) system for facilitating on-line real time settlement of payments, the Reserve Bank of India (RBI) has decided to setup a new RTGS system and frame regulations for matters connected therewith or incidental thereto.

**LIMITATION:**

However, considering that RTGS is not intended for daily payments the way other payment mode is, this is not a very big problem.

Another essential factor to consider is that not everyone can make RTGS payments.

In that sense, RTGS payments can be slightly restrictive as individuals who miss this time slot must wait until the next day to make their payments.

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**THANK YOU.**

Thanks & regards,

**(POONAM. N. DEDHIA)**