REAL TIME GROSS SETTLEMENT SYSTEM (RTGS) – AN OVERVIEW

The effectiveness of the function of a Chartered Accountant, whether it be as an accountant or an auditor or a financial executive, phenomenally improves with the degree of understanding of the business processes and the technologies deployed in the said processes. This article purports to present an overview of one such process (viz. RTGS) and a related technology deployed in the Banking Sector.

In the early nineties, a public sector bank introduced a product into the market called Cash Management Services (CMS), which received a phenomenal reception. Till then, entities, which had several work points had their cash parked at each of these centers to meet their needs and could not use those resources to the optimum extent. CMS changed it all and moving funds to the place of need became easy. Entities were able to maximize the leverage such instant mobility provides. Currently it is said that funds to the extent of rupees eight lakh crores get handled under the CMS product. RTGS (Real Time Gross Settlement) is a sub-product under the CMS umbrella and on a pan-India basis. This product is currently being offered through 20000 branches of various banks. RTGS would be of immense help especially in handling overseas remittances and enterprises can transfer funds to their business partners/associates with minimum loss through pipeline costs. Till now inaccessibility to funds in the pipe line or substantial access costs were putting the business entities in to enormous pressure in the global context. To these entities and especially to finance executives, CMS and RTGS have proved to be of immense value.

- CA. S. Devarajan

(The Author is a member of the Institute. He can be reached at Sethuraman.devarajan@gmail.com)

Access, control and leverage are the significant features of this product. This article explains the features of RTGS.

It has become imperative for Banks in India, in their process of adaptation to the global payments and settlement systems, to have in force "a congenial transfer of payments or funds". To quote, The Committee on Payments and Settlement Systems of the Bank for International Settlements, Basle (CPSS), *"a payment system is a set of instruments, procedures and rules for the transfer of funds among the system's participants"*. This committee's report is referred to as Significantly Important Payment Systems (SIPS), which is the network of major channels, for transmission of funds across domestic and international financial systems. It has been stated that by putting into operation the electronic transfer of funds systems "anyone can make payments to whomsoever one likes, whenever one likes, in whatever type of currency one likes, at the cost of a few cents per transaction". There are neither settlement delays nor mountains of paper work. The value is received instantaneously. There are no distinctions in cost or nature between a domestic and foreign currency transaction. Interest is computed on real-time, instead of on a "settlement day, a practice from the ancient times when accounting was done manually". In such systems, "privacy and security are guaranteed".

Reserve Bank of India, in an attempt to adapt to the international practices, has recommended the introduction of RTGS.

The objectives behind introduction of RTGS are:

1. Protection of the key existing assets of the Banking system, which are obviously the brand name and customer relationship.
2. To widen and strengthen the customer base.
3. To reduce the prevalent transaction cost and to explore revenues for generating additional income for the Banks. Though CPSS established a task force on payment systems, principles and practices as early as in May 1998, to establish the principles for the design and operation of payment system in our country, RBI has taken a cautious approach and has provided norms and guidelines only in 2005, with a view to provide time and space for the constituents to adapt. It is pertinent to note that a bill titled "Payment Systems Bill" was passed in the year 2002 in our Parliament. The implementation of the electronic settlement systems in our country has been slow but firm because payment systems are not fault free and can go berserk. Any developments or suggestions of a core principle governing such electronic payment systems should factor in the weaknesses and address the process of elimination of the inherent weaknesses.

As per our Payment Systems Bill 2002, a payment system means "a system that enables payment to be effected between a payer and a beneficiary and includes clearing, settlement or payment service." A good payment system creates a comfort zone in liquidity for the participants and consequently plays a lead role in making the financial markets buoyant. It has got tremendous impact on the domestic and international transactions with respect to the speed of transfer, financial risk, reliability and of course the costs. RBI's recommendation for the introduction of RTGS has taken into account the uneven automation process of various private and public sector banks in India. To cite an example, there are a number of Banks, which have not or are in the process of implementing core banking solutions. In some of the rural areas the Bank branches are either not computerized or yet to be networked. Besides, our banking system is different from the western ones in its objective, scope and operation. Therefore, standardization of any practice is a slow process. Due to this peculiarity, the implementation of RTGS can only be in stages and wherever appropriate. In other words, RBI cannot introduce RTGS across the board saying that they are going global. Such an action would not address the vulnerabilities that are endemic to any system from within and without.

CORE PRINCIPLES OF THE PAYMENT SYSTEM:

1. The system should be legally robust and be firmly grounded on the present legal system as applicable to all jurisdictions. In other words, the system should be synthesized to the country's legal environment.
2. The participants to the system should be made aware of the functional risks in the system. The rules and procedures should facilitate the process of educating the participants and be clear as to the impact of the entailed functional risks that they may incur by participating in the system. Therefore, the rules and procedures are expected to be comprehensive and up to date. The legal base of the system should be clearly spelt out. Accessibility should be ensured.
3. An ideal system or a preferred system clearly defines the procedures for management of credit and liquidity risks. It should specify the relative responsibility of the system operator and that of the participants. It would be preferable if appropriate incentives were also provided.
4. An effective payment system should address apart from credit risk, liquidity risk, legal risk, operational risk and systematic risk. The

responsibility for risk management is to be clearly assigned. An effective management of risk lies in the design of a safe payment system. Therefore the system design should contain appropriate details and incentives with respect to the various risks established and management thereof.

5. The payment system should provide prompt functional settlement on the value date preferably during the day. In other words, this principle states that the settlement should be daily.

6. An effective system where multilateral netting takes place should be capable of ensuring timely completion of daily settlements and be capable of handling any inability to settle by a participant with the largest single settlement obligation. In multilateral netting systems a participant may defer the settlement. Thus a participant faces the risk of not being able to meet its settlement obligations thereby invoking the possibility that the other participants will face unexpected credit and liquidity pressures at the time of settlement. Therefore strong controls and relative measures are required and should be embedded within the system. For example, this risk can be addressed by ensuring that additional functional resources are available to meet the contingency. It can be a combination of the following:

   a. A pool of collateral cash or security, which are appropriately valued.

   b. Committed lines of credit.

   c. Fixing of maximum individual settlement obligation.

   d. Evaluation and standardisation of the system design.

7. It would be appropriate that the assets used for settlement should preferably be a claim on the Central Bank; say, in India, it can be the Reserve Bank of India or State Bank of India. When other assets are used, they should carry little or no credit risks. To put it in layman's terms, most systems involve the transfer of asset among system participants to settle payment obligations. The common practice in India is to have this asset as an account balance on the Central Bank representing a claim on the Central Bank. As all the participants in the system must accept this asset, the system's safety depends, in part, on whether the asset leaves the arbitrator with significant credit risk. In some payment systems, a transferable asset is used minimally. For instance, they may settle one claim by offsetting with another. However, one has to be consistent.

8. The payment system should be highly secured and operationally reliable. There must be contingency arrangements for timely completion of process delays; i.e. a disaster management system should be in force. The degree of security and reliability for providing adequate safety and efficiency depends on the degree of systematic importance of the system and on the availability of alternative mechanism for effecting payments during contingencies.

9. The system should be practicable, economically efficient and effective.

10. The system should be transparent and accessible.

11. Accountability and responsibility of the participants should be clearly spelt out.

IMPLEMENTATION OF RTGS SOLUTION 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 Structure: There are three structures, in practice, for an RTGS system:

1. ***'V' shaped structure:*** To initiate a fund transfer, the sending bank dispatches a payment message which is routed through a Central Bank, to a receiving bank. In this structure, the message with all necessary information about the payment is passed on to the Central Bank. After the receiving bank settles the transfers with Central Bank, the said information is passed on to the receiving bank. In this structure, the Central Bank functions as an arbitrator and a postman.
2. ***'Y' shaped structure:*** Those that use the Swift Network follow an alternative structure, which is a 'Y' shaped structure. In this case, the payment message is transmitted by the sending bank to the central processor. The central processor filters the information and takes a subset of information that is necessary for settlement, from the original message and passes this subset to the Central Bank. The Central Bank's processor retains the original message. On receipt of the subset, the Central Bank verifies whether the sending bank has sufficient funds in its account. Then the Central Bank informs the central processor the status of the transfer as to whether settled or queued or rejected. Once settlement takes place, the full message containing all the information confirming the settlement is rebuilt by the central processor and sent to the receiving bank. In this structure, the business information that is exchanged between the sending and receiving banks is not known to the settlement agent viz. the Central Bank.
3. ***'L' shaped structure:*** A structure conceptually similar to the 'Y' shaped structure discussed above is also in practice. In this structure, the payment message emanating from the sending bank is held at a system gateway, which is attached to the sending bank's internal processing system. From the gateway a subset of the original message is created and sent to the Central Bank. If the sending bank has sufficient funds in its account, the settlement is completed and the Central Bank confirms this, by way of a message to the sending bank's gateway. On receipt of this confirmation message, the original payment message is automatically relayed from the sending bank's gateway to the receiving bank.

In all these types of structures, the common notable feature is that the receiving bank will receive the full payment message only after the transaction is being settled by the Central Bank.

An alternative 'T' shaped structure, where the sending bank routes the payment messages directly to the receiving bank has also been thought of. However, it has been discarded, as it is incompatible with the basic principles of RTGS.

The Reserve Bank of India has chosen the 'Y' shaped structure to meet this strategic objective, which strips and retains the customer related

confidential information and forwards only the particulars of payment and settlement to the RTGS. This gives possibility for the central processor to be an independent service provider.

1. Introduction of RTGS in India has got strong technological support. It has a dedicated and secured communication back bone and state of the art messaging system.

2. The Reserve Bank of India has preferred the 'Y' shaped message flow structure, because it has its single gateway interface for each participant, which is called as participation interface. The participation interface ensures that all messages, enquiries etc. emanating from it are conforming to the three norms namely, confidentiality, integrity and non-repudiation. All these messages will be received by the Inter Bank Funds Transfer Processor (IFTP), which will act as a broker. Safety of the messages is ensured in the IFTP. In the case of payment messages, IFTP will construct a settlement message containing only the data required for settlement and will strip off the cover, certain confidential customer data. This in turn will be forwarded to the Central RTGS system. This settlement message will be processed by the Bank's central system and the fate will be advised to IFTP. Based on the response received, IFTP will enrich the message received from the RTGS system, say, by adding on the tools and transmit the settlement advice to both the sending and beneficial participants.

3. Each participant would have a single dedicated RTGS settlement account both for outward and inward RTGS payments. This enables monitoring, tracking and reconciliation of the transactions. Each participant is required to open a dedicated settlement account, which will be an intra day account. This account would be viewed at the beginning of the day from a current account. Balances in the RTGS settlement account at the end of the day are swept back to the participant's current account. Thereby, at the end of the RTGS day, all settlement accounts will be zeroised. This system has a facility to fund the RTGS settlement account (of course during the day) from the participant's current account by the use of own account transfers also.

4. Transaction priority: All payment transactions emanating from a payment systems gateway are processed strictly on a first in first out basis. The system also allows the participants to assign priority to the payment messages, which can facilitate urgent or time critical payment. Except these time critical payments, all other transactions will be processed strictly on FIFO basis.

5. Queuing: Originally, a payment instruction is expected to be settled as soon as it is received, which is a functionality of a real time system. However, there exists scope of some transactions not being capable of immediate settlement. In such cases, the RTGS system will maintain a payment queue within which the payment transactions will be held on a FIFO basis. The participants are also provided facilities to view the transactions held in payment queues, cancel transaction(s) and can change the order of priority. In view of the confidentiality and security concerns of participants, one can view only the other participants in queue or one's own pending incoming payment instructions.

6. Own account transfer: In order to optimize funds deployment and economize on its intra-day liquidity requirements, an RTGS system facilitates movement of funds between various accounts held by a participant. Such movement can take place between the participant's settlement account and current account or between two or more current accounts held by the participants. This is an efficient tool for liquidity management.

7. Liquidity management: An RTGS system warrants an active management of the intra-day liquidity. In order to ensure smooth settlement of transactions and avoid the delay of credit to the other participants, it is imperative that each participant ensures that there are sufficient funds in their RTGS system account at the time of submission of payment instructions. The RTGS system has certain features to facilitate the participants in its liquidity management effort. Queuing facilities, priority assignments in own account transfers etc. are such tools. Besides, there are two additional intra-day liquidity management tools built in the RTGS system.

    1. *Intra-day liquidity:* To meet their intra-day liquidity requirements, a participant can avail intra-day lines of credit provided by the Reserve Bank of India. However, the Reserve Bank of India on its own discretion and under specific terms and conditions will provide such lines of credit. This line of credit has to be fully collateralized and will be chargeable to the participant on particular transaction basis. It is to be noted that these lines of credit are available on an intra-day basis and any failure to repay the credit to the Reserve Bank of India would invite strict penal action.

    2. *Gridlock resolution mechanism:* Sometimes the entire system can clog and cripple or paralyze the transactions. The RTGS has an inbuilt optimized gridlock tool to release the lock. However, this mechanism can be invoked only at the discretion of the Reserve Bank of India for smooth settlement.

Importance of Training:

Training of the employees of the participants on a continuous basis is a necessity that should not be overlooked. The systems and computers are only tools. Without manual intervention nothing can be achieved. We are constantly in a transitory stage i.e. we are evolving and this evolution has got intermittent stages. The movement from one stage to another is usually termed as transitory stage. Sometimes the transition is voluntary or is necessitated by the environment. In some Western countries, RTGS enables inter funds transfer even outside the banking system. While our banking system and the practices by a plethora of banking institutions are at different levels of development, an effective RTGS system would pave way for smoothening of some of the anomalies or disparities existing in these practices. It can be stated that it is a first step to bring about the constituents of our banking system to a common platform. Therefore, it is mandatory that the employees of the participants and the users be properly trained using all means of training devices, tools, techniques and methods for successful RTGS implementation.

Conclusion: It may not be out of place to mention that an RTGS system is a part of an integrated accounting system. But the procedures and functionality of an integrated accounting system are not discussed here, as it is a separate topic by itself. The principle opinion to be noted is that an RTGS system by its scope and definition, is a vertical alternative to any manually handled settlement systems or clearing systems.

While an RTGS system is an effective platform for inter-bank transfer of funds with adequate supporting devices, the implementation and the success largely depend on the adaptation to compatible systems by all the participants. As stated earlier, different banks are using different platforms, which are not necessarily compatible to each other. We also have examples of banks, which are in the initial stages of computerization. For them it will be a giant leap forward to follow in line with the RTGS system. The benefit would be that such non-compatible banks could do away with intermediate infrastructure and choose a system, which is compatible to the RTGS.❐