Study Material No. 2

9.10.1 Participation Model in CTS

1. *Direct*: Bank has its Capture and Clearing House interface (CHI) infrastructure and participates on its own.

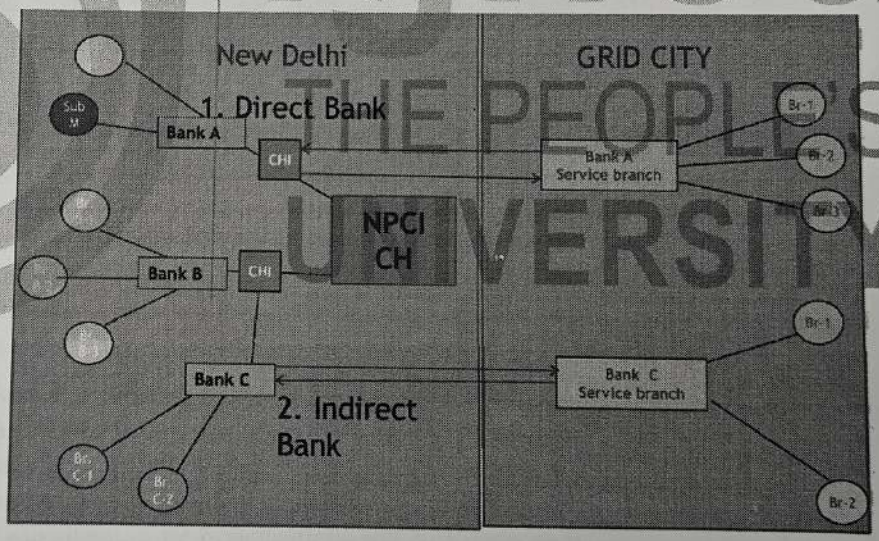
   Indirect: Bank has its Capture infrastructure; however it uses the CHI infrastructure of another bank.

2. *Sub-Member:* Sub-member is one who is an extended branch of another bank. They will not have their MICR code and identity in the clearing process. They will route all their transactions through the sponsor bank, and settlement will happen in the books of the sponsor bank.
3. *Service Bureau:* Capture infrastructure is established by the vendor and they will have an arrangement with a third party bank for using their CHI infrastructure.

9.10.2 GRID CTS

Grid-based Cheque Truncation System (CTS) has been launched in Chennai, Mumbai, and Delhi, covering several States and Union territories. The goal is to cover the whole area with a single CTS. A GRID is like a regional office in the CTS system used all over the country.

Figure 9.2: GRIDWork flow



Under the Negotiable Instruments Act of 1881, all states and Union Territories shown in the above grid have different holiday schedules. As local clearing houses are slowly absorbed into the CTS, it has become important to develop a policy for uniform holidays to ensure that grid-based CTS operations run smoothly.

1. Each bank in a Regional Clearing house, or GRID, will only have one CHI.
2. The bank can connect to the clearing house through one of the three GRID clearing centres.

3. The files processed in each city will be brought together at the bank level and sent to their CHI, which in this case, is Chennai.
4. Each bank in the GRID will have a single settlement. For example, the settlement for the southern GRID will be made in Chennai.
5. One of the most essential parts of the "Paper to follow" Process is that government checks and IQA (Image Quality Assurance)-failed checks will be physically given to the drawee bank.

9.11 NATIONAL AUTOMATED CLEARING HOUSE (NACH)

The National Automated Clearing House (NACH) is an electronic clearing service (ECS) developed by the National Payments Corporation of India (NPCI). The system is used for bulk transactions, such as salary and pension payments, and recurring expenses, such as utility bills.

The NACH system allows for the efficient and automated processing of large transaction volumes, saving time and reducing the risk of errors. It also enables transactions to be processed in real-time, ensuring that funds are credited to the beneficiary's account on the same day.

One of the critical features of NACH is its flexibility. It can process various transactions, including direct debit, credit, and e-mandates. This allows organizations to use the system for multiple payments, such as loan instalments, insurance premiums, and mutual fund investments.

Another advantage of NACH is its security. The system uses a two-factor authentication process, which ensures that only authorized parties can initiate and authorize transactions. This provides an added layer of protection for both the payer and the payee.

The NACH system is also user-friendly. It provides a simple and intuitive interface that users with limited technical expertise can easily navigate This makes it easy for organizations of all sizes to use the system, regardless of their technical capabilities.

NACH system is a powerful and reliable tool for processing bulk and recurring payments. Its flexibility, security, and user-friendliness make it an ideal solution for organizations of all sizes. With the government promoting digital payments the use of the NACH system will see massive growth in the coming years. It is a win-win situation for organizations and customers as it ensures timely, safe and efficient transactions.

NACH's Aadhaar Payment Bridge (APB) System, uses the table of Aadhaar No., and bank code, bank account number of a customer; this table is, called Aadhaar Map per, and NPCI maintains it. Banks daily update it to NPCI for changes if any. Govt. pays its DBT payment by sending a file to its account-maintaining bank to debit Govt., and credit beneficiaries. The govt. file has the customer Aadhaar number only, and the payment amount. So the paying bank debits Govt., and sends credit to NPCI and the payees 'Amount - vs- Aadhaar list. NPCI system, using the map per, sends payments through NACH to the various banks maintaining customer accounts, providing

customer bank, branch, Account No., Aadhaar No., Amount, etc., so that automated postings can happen.

NACH Debit

Used by an institution for pulling funds from large number of payers across multiple banks creates multiple debits to different destination bank accounts and a corresponding single credit to Sponsor bank account, who sends the debit file

Examples - Direct Debit of Bill payment, Insurance Premium, Mutual Fund SIP, Loan EMI, school fees etc., against previously given mandates.

NACH Credit

Used by an institution for affording credit to a large number of beneficiaries

Single debit to the sponsor bank's account and multiple credits to different destination banks' account

Examples - Dividend Payments, Interest payments, Bonus, Commission, Salaries, Pay-outs, etc.

APBS (Aadhaar Payment Bridge System)

Used by an institution for disbursement of subsidies/government benefits to a large number of beneficiaries. Single debit to the sponsor bank's account and multiple credits to different destination banks' account

Examples - LPG Subsidy, Pensions, MNREGA etc.

This is mostly for Govt. use to disburse benefits/subsidies, etc.

9.12 NATIONAL FINANCIAL SWITCH (NFS)

At a meeting on September 24, 2009, the Board for Regulation and Supervision of Payment and Settlement Systems (BPSS) agreed, in principle, to let NPCI run different retail payment systems in the country. On October 15, 2009, the Reserve Bank of India also gave NPCI permission to take over the operations of NFS from the IDRBT "as is, where is." On December 14, 2009, NPCI took over running NFS.

What is an ATM Network?

A bank's ATMs are all connected to its ATM switch. An ATM network is a more extensive network formed by connecting the ATM switches of various banks. There can be a 2-bank network or a multi-bank network of banks. If a particular bank is not part of any ATM network and if it does not have any bilateral agreement with any other bank, then its customers will be able to operate at its own ATMs only.

An ATM network brings 'Inter-operability' for banks' customers by allowing them to operate at ATMs of other Banks as well, which are part of the network.

On-Us: It is a transaction in which a customer uses the same bank ATM and

ATM Card, *e.g.* SBI cardholder using SBI ATM.

Off-Us: It is a transaction in which a customer uses different banks' card and ATMs; *e.g.* SBI cardholders making use of an ICICI Bank ATMs.

This Off-us can be transacted if these two banks' (ICICI and SBI) switches have a direct connection (bilateral connection) or both are in a network with more banks (say 3, 5, 10) with a common central switch.

On a larger scale now, all banks' ATM switches in India, are now connected to NFS, forming a country-wide single network, and all bilateral connections have been discontinued:

a. The ASA (Authentication Service Agency) is connected to UID (Unique Identifies) by leased lines. Similarly, AUA is connected to ASA. There can be a sub-AUA, *i.e.*, agencies/BC organizations with their systems collect the authentication data from field devices and exchanging it with banks.

b. NPCI, as ASA, offers customer authentication gateway services to banks and non-bank financial companies, clearing and settlement activity (for OFF-US), and an AEPS DMS (Dispute Management System) to handle interbank disputes.

Any ATM network, including NFS, handles off-us transactions of Banks only. On-Us transactions are handled by issuing bank only between its ATM and its own ATM switch.

Some ATM Transaction definitions are given below.

Approved: ATM has dispensed cash, either full or partial amount.

Declined: ATM has not dispensed cash. The transaction has been declined at switch and CBS.

Business Decline: Declines based on the customer behaviour or business logic, e.g. Invalid Account, Invalid PIN, Exceeds Funds Available, Exceeds Withdrawal Limit etc.

Technical Decline: Declines due to technical issues, i.e. Hardware/ Application/Network/Power failures.

The NFS 24X7 Helpdesk team monitors and raises alerts to internal teams and NFS members to ensure the service is resumed at the earliest.

9.13 SUMMARY

The payment system in India is a complex network of various institutions and technologies that facilitate financial transactions within the country. The Reserve Bank of India (RBI) acts as the regulator of the payment system in India and oversees the operations of various institutions such as banks, non-bank entities, and payment service providers. India's most widely used payment systems are the National Electronic Funds Transfer (NEFT) and the Real-time Gross Settlement (RTGS) systems. These systems are discussed in

details in this unit. The new technologies such as blockchain and digital currencies which have emerged as potential disruptors of the global payment systems are also discussed. In conclusion, the payment system in India is a complex network of various institutions and technologies that facilitates financial transactions within the country.

9.14 KEY WORDS

Payments System- describes the system in place to facilitate money transfers between individuals, businesses, and other institutions.

e-payment system-also known as an electronic payment system, is a method of conducting transactions electronically, typically over the internet.

Payment and Settlement System is a financial infrastructure that enables the transfer of funds between different parties.

Real Time Gross Settlement (RTGS)-is a real-time funds transfer system that facilitates the transfer of large-value transactions between banks on a gross settlement basis.

National Electronic Fund Transfer (NEFT) -is an electronic funds transfer system that allows individuals and businesses to transfer funds between banks on a deferred net settlement (DNS) basis.

9.15 SELF-ASSESSMENT QUESTIONS

1. What do you understand by the term 'Payments Systems'? Discuss the characteristics of a Payment System.
2. Explain the Evolution of Payments Systems in India.
3. Describe the IFTAS- INFINET MPLS Network Architecture.
4. What is payment and settlement system? Explain the payment systems that operate globally giving suitable examples.
5. Describe the National Electronic Funds Transfer (NEFT) System. What are the benefits of NEFT when sending or getting money?

9.16 FURTHER READINGS

https://www.ciscopress.com/articles/article.asp?p=2460771

www.npci.org.in/PDF/cts/notified-documents/GRID_CTS_Implementation_Northern_Grid.pdf

https://www.npci.org.in/who-we-are/about-us

Roles & Responsibilities of NPCI

a) NPCI owns and operates the Unified Payments Interface (UPI) platform

b) NPCI prescribes rules, regulations, guidelines, and the respective roles, responsibilities and liabilities of the participants, with respect to UPI. This also includes transaction processing and settlement, dispute management and clearing cut-offs for settlement

c) NPCI approves the participation of Issuer Banks, PSP Banks, Third Party Application Providers (TPAP) and Prepaid Payment Instrument issuers (PPIs) in UPI

d) NPCI provides a safe, secure and efficient UPI system and network

e) NPCI provides online transaction routing, processing and settlement services to members participating in UPI

f) NPCI can, either directly or through a third party, conduct audit on UPI participants and call for data, information and records, in relation to their participation in UPI

g) NPCI provides the banks participating in UPI access to system where they can download reports, raise chargebacks, update the status of UPI transactions etc.

Roles & responsibilities of PSP Bank

a) PSP Bank is a member of UPI and connects to the UPI platform for availing UPI payment facility and providing the same to the TPAP which in turn enables the end-user customers / merchants to make and accept UPI payments

b) PSP Bank, either through its own app or TPAP's app, on-boards and registers the end-user customers on UPI and links their bank accounts to their respective UPI ID.

c) PSP Bank is responsible for authentication of the end-user customer at the time of registration of such customer, either through its own app or TPAP's app

d) PSP Bank engages and on-boards the TPAPs to make the TPAP's UPI app available to the end-user customers

e) PSP Bank has to ensure that TPAP and its systems are adequately secure to function on UPI platform

f) PSP Bank is responsible to ensure that UPI app and systems of TPAP are audited to safeguard security and integrity of the data and information of the end-user customer including UPI transaction data as well as UPI app security

g) PSP Bank has to store all the payments data including UPI Transaction Data collected for the purpose of facilitating UPI transactions, only in India

h) PSP Bank is responsible to give all UPI customers an option to choose any bank account from the list of Banks available on UPI platform for linking with the customer's UPI ID.

i) PSP Bank is responsible to put in place a grievance redressal mechanism for resolving complaints and disputes raised by the end-user customer

Roles & responsibilities of TPAP

a) TPAP is a service provider and participates in UPI through PSP Bank
b) TPAP is responsible to comply with all the requirements prescribed by PSP Bank and NPCI in relation to TPAP's participation in UPI
c) TPAP is responsible to ensure that its systems are adequately secure to function on the UPI platform
d) TPAP is responsible to comply with all applicable laws, rules, regulations and guidelines etc. prescribed by any statutory or regulatory authority in relation to UPI and TPAP's participation on the UPI platform including all circulars and guidelines issued by NPCI in this regard
e) TPAP has to store all the payments data including UPI Transaction Data collected by TPAP for the purpose of facilitating UPI transactions, only in India
f) TPAP is responsible to facilitate RBI, NPCI and other agencies nominated by RBI/ NPCI, to access the data, information, systems of TPAP related to UPI and carry out audits of TPAP, as and when required by RBI and NPCI
g) TPAP shall facilitate the end-user customer with an option to raise grievance through the TPAP's grievance redressal facility made available through TPAP's UPI app or website and such other channels as may be deemed appropriate by the TPAP like email, messaging platform, IVR etc.

Dispute Redressal Mechanism

1. Every end-user customer can raise a complaint with respect to a UPI transaction, on the PSP app / TPAP app.
2. End-user customer can select the relevant UPI transaction and raise a complaint in relation thereto
3. A complaint shall be first raised with the relevant TPAP in respect to all UPI related grievances / complaints of the end-user customers on-boarded by the PSP Bank / TPAP (if the UPI transaction is made through TPAP app). In case the complaint / grievance remains unresolved, the next level for escalation will be the PSP Bank, followed by the bank (where the end-user customer maintains its account) and NPCI, in the same order. After exercising these options, the end-user customer can approach the Banking Ombudsman and / or the Ombudsman for Digital Complaints, as the case may be.

4. The complaint can be raised for both the types of transactions i.e. fund transfer and merchant transactions

5. The end-user customer shall be kept communicated by the PSP / TPAP by means of updating the status of such end-user customer's complaint on the relevant app itself