Banking technology

Ranging commended the setting of Atoms in India. 4 Major objective of Computerizing In Banking: a. Customer service c. Decision making b. Housekeeping d. Productivity and profitability Different types of Computer System: 1 . Stand-alone Computer System: is used by one person at a time, it was used by the bank at the initial stage of computerizing. 2. Multi-user System: Several people can work at a time. (example: Mini computers, Main frame Computers, Micro Computers and more powerful Super Computers) What Is Multi-user Computer Networking In such a system computers are based on the centralized processing concept.

All information is kept and processed at the main central machines and various terminal attached to the main computer. Most of the Bank developed their centralized processing by using Unix as operating system. Most of the Relational Data Base Management Systems (Orders) and other Data Base Management Systems (Dobbs) use Unix platform. Use of Compensation at different level of a Bank Branch Level: a. Provide better and speedy customer service b. Improve housekeeping service c. Analyses the branch level data for decision making Regional/Zonal/Circle office level: a. Branch profile b.

Inter-branch reconciliation . Business/Credit monitoring d. Personal data management Head office level: a. Operations b. Planning c. Personnel d. B e. Services etc. LANA: Local Area Network is computer network that links computers and peripherals within a localized area say, within a building. (LANA will not extended beyond 100 meters. However, it can be maximum spread of 1 Km and the number of devices supported may also vary from 2 to 1000) WAN: Wide Area Networks are large scale computer network spread

over a span of sizeable geographic area. In this network computers can be linked by using: a.

Ordinary Telephone Lines (dial-up network) . Satellite links c. Microwave links (broad band links) In comparison to LANA transmission speed and capacity are limited and data transfer rates are very low in case of WAN. In LANA the way in which the devices are interconnected is known as Topology. When all devices on the network are connected to single continuous cable is known as Bus Topology. Data transmission is possible in both directions. It is easy to set- up. When the devices are connected in a closed loop and Information passed from one node to others in series known as Ring Topology.

Data transmission is possible in en direction only. In a Star Topology, the central node is often the master, Each of the other nodes is joined to the master by separate links. The data, a user wishes to send commonly referred to as a message, is broken into smaller units called packets. UNINTERRUPTED POWER SYSTEM (UPS) General feature of an UPS is: It has an Inverter and battery charger with an automatic change over of power supply battery or load (electricity supply) charger-UCM-rectifier is then converted to a IV AC. CORE BANKING Benefits: a.

Enables the establishment of a reliable centralized data repository for the bank b. Facilitate data warehousing and data mining technology for business intelligence c. Easy implementation of integrated customer centric services like ATM, NIB, MBPS, KIOSK banking, any branch banking, SMS etc. D. Enables Centralized management information, decision support and executive Information Systems. E. Efficient and effective MIS, ALMA, Risk

Management etc. Using centralized data, f. Enables centralized management and control with centralized data g. Standardization of the branch automation software using a single version.

Quick adoption of software changes as change are done only at the central site. H. Facilitate Business Process Re- engineering (BPR) to streamline the existing processes. I. Relieves branches of Job like data backup, MIS generation etc. J. Requires infrastructure at the central location only for data backup. K. No extra cost for implementation of SF, ARTS etc. Disaster Recovery Site(DRY) Purpose: a. To avoid disruption in business activity b. To ensure non-stop functioning c. To act as a back-up for providing reliable and continuous processing environment.

Business Process Re-engineering (BPR) Helps: a. Realign the existing business process in tune with benefits provided by new technology platform. . In taking advantage of best business practices available in the technology platform to provide more efficient services. C. Process aligned with the technology platforms provided by the bank with the capability for the delivery of enhanced value to their customers and also gain from the changed processes. 2. PAYMENT SYSTEMS AND ELECTRONIC BANKING ELECTRONIC PAYMENT SYSTEMS: Atoms (Automated Teller Machines): Convenience of Atoms To the Customers: a. Ex. access availability b. Less time for transactions d. Any time any where banking e. Acceptability of card across multiple bank Atoms, even at foreign f. Other services like Queue deposits, balance enquiry, Mini statement, Queue book requisition, Fund Transfer, AD account opening, MBPS registration etc. To the Bank: a. Cost of setting up Atoms is lower than setting up a branch. B. Time savings (to be

used in productive work) c. Reducing footfalls in the branches thus avoiding rush. D. Cost of transaction is low e. Less risk than handling cash payment manually. F. Touch point for cross selling.

Different Models of Atoms in India: Online: When the ATM is connected to the Banks data base and provide online real time access to the customer account. Offline: When an ATM is not connected to the Banks data base. Stand-alone: When an ATM is not connected to any ATM network. Networked: When an ATM is connected to any ATM network. Cash Dispenser (CD): It is a pruned down version of the ATM used for cash withdrawal only. Components of ATM: a. Video display Monitor b. Keyboard/keypad c. Touch Screen d. Slots: I. Card Reader lie. Cash dispenser ill. Envelop Dispenser lb.

Deposit Slot HAWK: The intelligent Auto-teller and Network management systems are special breed auto teller machine. PIN: Personal Identification Number A magnetic strip fixed on the back of card. This strips hold certain information about the customer such as account number, validity etc.. After insertion of card into appropriate slot, the ATM/POS device reads the account number. Once card is valid it prompts for PIN. Once PIN is matched with stored in computer the card holder is allowed to proceed. PIN is like password but it is combination of 4 digit numerals only. Credit Card: A small plastic card around 8. Ex.. 5 CM.

Credit Card issuer in India: VISA International and Master Card International Different types of Credit Cards: a. Charged Card: In Such Cards, transactions are accumulated over a period of time, nearly a month and the total amount charged, I. E debited to the account and the credit card holder given about

25 to 50 days' time to pay the total amount debited. B. Credit Card: this is same as charge card difference is, in credit card the card holder has the option to pay entire amount as soon as the account is debited or may choose to pay only a certain percentage of amount debited an he gets a credit to extent of rest (I. He can pay it in monthly installments later). C. Debit Card: A debit card used like a credit card at POS or paying for Merchandise, the difference being that funds re immediately taken from the cardholders account. D. Smart Cards: looks exactly like any ATM card with integrated circuit (ICC Chip) installed. The ICC chip contains memory, may contain a processor, and communicate with external world through contacts on the surface of the card. I. Intelligent memory chip: they are being used in pay phones, identification, access control, voting and other application. It.

Micro- Processor Card: most advanced and ideally suited for banking and financial application. For smart cards, ISO 7816 defines physical features and communication protocol. ISO 10202 defines the security features. . Member Card: this is exclusively by member of a club or chain of hotels. Features of Smart Cards: One of the most primary features of the Smart Card is security to prevent card- related crimes and frauds. Chips for Smart Card are not publicly available. A. Multiple PINs b. Dynamic Signature verification c. Fingerprint Verification d. Voice recognition systems e. Hand geometry f. Retinal pattern verification g.

Vein recognition h. Visual recognition Electronic Purse: The card has pace for several 'electronic purses' each for storage of an amount. These can be used for different types of accounts of the user. In edition, there is space for user data such as address, the branch where the user has his account, and even

the last thirty to fifty transactions. Electronic Queue: The Smart Card can be used during electronic fund transfer at the point-of-sales (EFFETE). ELECTRONIC BANKING a. Anytime Banking b. Anywhere Banking c. Home Banking I. Corporate banking I'. Personal banking INTERNET BANKING Three types of NIB: a.

Basic level service is the banks websites which disseminate information on different products and services offered to customers and members of public in general. It may receive and reply to the customers' queries through e-mail. . In the next level is Simple Transactional Websites which allow customers to submit their instructions, are applications for different services, queries on their account balances, etc. , but do not permit any fund-based transaction on their accounts. C. The third level NIB are offered by Fully Transactional Websites. MOBILE BANKING: 128 bit encryption and open Internet Technology, I. E. T its not dependent on any specific service provider and the handset company. The service is free of charge. QUEUE TRUNCATION: As per section 6(b) of IN Act 'a queue which is truncated ruing the course of clearing cycle, either by clearing house or by the bank, whether paying or receiving payment, immediately on generation of an electronic image for transmission, substituting the further physical movement of the queue in writing'. Characteristics: a. It is an electronic image off paper queue. B. Only bank or clearing house can truncate a queue. C. Truncation is to be done only during the course of clearing cycle. D.

The electronic image substitute the physical queue. E. The paper queue after truncation, is kept in the custody of the bank/clearing house that truncated the queue. Way of Truncation: . MICA b. Using Image Processing. 3. DATA

COMMUNICATION NETWORK AND FT SEEMS DATA COMMUNICATION NETWORK COMPONENTS: I. Transmission Devices and Interface Equipment: The data is transmitted along the communication path between computer using electrical signal and bit sequences to distance, then the signals get deteriorated. To overcome this problem, the digital signals are converted into analogue signals for transmission over telephone lines.

This conversion between the digital and analogue forms is carried out by an interface device called Modem (Modulator De modulator). There are two types of modem internal modem installed in the computer and external modem connected externally to the computer. I'. Transmission Medium: a. Terrestrial Cables: I. Terrestrial-wire pair it. Coaxial cable iii. Optical fiber b. Microwaves systems: these are very high frequency radio signals used in telephone system and television transmissions. C. Communication satellite iii. Transmission Processors: a. Message Switches b. Multiplexers c. Front end processors.

Modes of Transmission Simplex: is capable of transmitting data in one direction (Radio broadcasting) Half- duplex: allows data movement in both direction but in only one direction at a time. Modems, on a line, are examples of half-duplex) Full-duplex: for simultaneous two- way communications (four wire full duplex modem used on telephone lines) MAJOR NETWORKS IN INDIA Exclusive for Banks: Banknote and SWIFT (Society for Worldwide Inter-Bank Financial Telecommunication). 'NET: set up by department of Telecommunication in the year 1991. ANCIENT: set up by National Informatics Centre, GO', it is Indian's largest WAN.

INTONED: it was set up by CM Ltd. In 1980 BANKNOTE: set up by RIB in 1991. RIB Net: a communication software, allows for free format messaging and file transfer n the existing BANKNOTE infrastructure with the help of servers installed at the four metros. Rib's VAST: As per the recommendations of Sara Committee, the RIB decided to set up a countrywide data communication network for banks linking major centers of the country. This network christened as the INFINITE (Indian Financial Network) has been set up at Hydrated. This network use satellite communication using Vast (Very Small Aperture Terminals). Two forms a.

Credit Transfer b. Debit Transfer. Facilitators Wire transfer, Atoms, POS, Card etc. Land Marks in India ARTS and Queue Truncation System NEFF: National Electronic Fund Transfer . Any amount inclusive of paisa components b. Payment instructions process in batch by batch and settled in netting basis. C. No acknowledgement are envisaged under NEFF d. Process Flow: (Through SF: Structured Financial Messaging system) Customer > Sending Bank Branch > Sending Bank NEFF Service Centre > NEFF Clearing Centre (National Clearing Cell of The Receiving Bank Service Centre > Beneficiary Bank Branch > beneficiary Customer. . Every participating bank shall open and maintain in NEFF centre, lambi, a settlement account for settlement of payment obligation. ARTS: Real Time Gross Settlement a. RSI. 200000. O or more b. Payment instruction process in a continuous or Real Time basis and settled in gross or individual basis. C. Process Flow: Each Bank has a single gateway interface called Participant Interface (P') for ARTS system. Customer > Sending Bank Branch > message through Pl > Inter Bank Fund Transfer

Processor (FTP) > ARTS system at RIB > FTP > Beneficiary Bank Branch > beneficiary Customer 4.

ROLE OF TECHNOLOGY GRADATION AND ITS IMPACT ON BANKS Data Warehousing: Data base known as Data Warehouses are designed, wherein data from heterogeneous sources is sources and stored to generate critical information for decision support systems. Characteristics of Data Warehouse are: a. It is subject oriented b. It is integrated, and are no inconsistencies c. It is non-volatile. D. It is time variant The Pasadena Committee has recommended to RIB for this. Data Mining: is a technique to reveal the strategic information hidden in the data warehouses. It is the process of automatically finding pattern and relations in large data base.

Storage of Data in data warehoused and their extraction through data mining technique can be applied in: a. Loan risk analysis. B. Credit risk Analysis d. Data analysis of demographic information about customers. E. Risk Analysis by insurance companies and banks. Data and message transferring: Computer facilitate the processing of data. Communication technology helps in transmission of data. Combined application of above two, embodied as information technology banks are able to transferring data and message which reduce operation time and cost of the bank.

Electronic Data Interchange: is inter-organization exchange of Business documentation, which can be processed by computers. Some EDITS are: a. SWIFT (Society for Worldwide Inter-Bank Financial Telecommunication) b. In India VASS provides Gateway for Electronic Data Interchange Services (SEEDS) worldwide. EDIFICE: Electronic data interchange for administration

of commerce and transport is the universal set of standards and guidelines

for communication by EDI Corporate Websites: Banks open their own web

sites for service delivery and also for: a.