Alternate Channels of Banking

In India, State Bank of India has more than 14000 branches with a business volume of more than Rs. 15 Lac crores, but ICICI Bank has 1/5th of the branches SBI has but it has a business volume of 1/3rd of SBI. How does ICICI generate more business with less number of branches? – The solution is Alternate channels of Banking.

I. Channels of Banking

Banking as a service can be offered through many channels. There are specific advantages to each channel of service. Well known channels of banking are

a. Branches,
b. ATMs,
c. Kiosks,
d. Call Centre / Phone banking service units,
e. IVR,
f. Internet Banking,
g. Mobile Banking
h. Personal service units and so on.

Some banks are handling the personal service units as part of branches. In banking terms, branches are considered as conventional channels and others are considered as Alternate channels.

❖ Why Banks are focusing on alternate channels?

The basic reason for the banks to focus on alternate channels is competition. Various channels provide specific combination of benefits to the banks. Some of them are (a) Simple and Fast service delivery (b) Secure service offering (c) Easy to access new and existing customers (d) Lower operational and transaction cost and (e) Wider geographical coverage

❖ What are all considered for offering the services through channels?

Banks are offering set of services through these channels depending on the (1) rules and regulations laid by central banks, (2) Penetration of the Technology in the society, (3) Cost of service, (4) Risk of offering through the channels, (5) Product fitment to the channel

❖ Benefits and Risk associated with channels for banks and Users

Each channel has its own benefits and risk associated for both the bank as well as the users. Following are some of the benefits and risk associated.

The Benefits for the banks: (1) lower cost of acquisition, retention and operation (2) increased customer satisfaction by flexible service (3) Reaching the geographies without physical presence and so on

The benefits for the users: (1) Faster and 24 hours Service offering (2) Low risk on cash handling (3) Reduced formalities on banking transaction and (4) Simplified tracking of the banking transactions

The Risk for banks: (1) Technology malfunction / Hacking (2) Risk on authenticating the users (3) Obsolescence of technology, (4) Training the bank resource and customers on technology, and so on.

The Risk for the users: (1) Theft of details/ information, (2) Fraudulent / unauthorized access, (3) Accessibility to the service, (4) Lack of awareness on the use of channel and so on

On 27th June 1967 the first commercial "Cash Machine" commonly described as "Mini-Banks" which allows the customers to access cash 24 hours a day, outside of the restrictive opening times of banks was installed at Barclays Enfield by Barclays Bank in London. John Shepherd Barron, the inventor of the ATM described the ATM as "Hole on the walls". This is the origin of the Alternate delivery Channel for Banks services. For information, Automated Teller Machines were in use from 1939.

***Disputes on who invented ATMs are still inconclusive since many patents registered for automatic cash vending machines during the period**

II. Alternate Channels of Banking – Mobile Banking

One of the major advantages of alternate channels of banking is allowing the customer to do the cashless transaction. The mobile banking which is the fastest growing alternate channel of banking in the world.

❖ Mobile Banking:

Mobile Banking also termed as M-banking in banking industry is the service offered by the banks to customers via any mobile devices including the mobile phones that can support the mobile network technology. It is one of the low cost channels for banks and convenient form of banking for the users.

Mobile Banking has the provision to the availment of banking and financial services with the help of mobile telecommunication devices. The scope of offered services may include facilities to conduct bank and stock market transactions, to administer accounts and to access customized Information.

Currently, the services of banking offered by mobile banks are (1) Balance confirmation (2) Payments (3) Fund Transfers (4) ATM withdrawals (5) Investments etc.

❖ Difference between Mobile Banking and Mobile Payments:

Mobile banking and Mobile payments are often misused terms in banking. They are differentiated by way of service provided. Mobile Banking is managing the services offered by the financial institutions through any mobile devices whereas mobile payments are using the services offered by the commercial establishments to pay for the purchase of service or goods.

Mobile Banking is nothing but using mobile devices to gain access to the financial services. Mobile payments on the other hand may be defined as the use of mobile devices to pay for goods or services either at the point of purchase or remotely. Bill payment is not considered as a form of mobile payment because it does not occur in real time.

❖ Evolution of Mobile Banking:

The earliest form of mobile banking is the way of SMS and is now referred as SMS banking. With the invention of smart phones with WAP and the use of mobile web technology enable the wide spread of mobile banking. Now a days the presence of mobile banking application like Sybase's MBanking 365 and the devices that supports better operating systems like Android, the concept of mobile banking is growing faster.

❖ SMS Banking:

SMS banking is a type of mobile banking technology that supports the service offerings from banks to its customers using the SMS messaging services. SMS banking services are offered in the form of Push and Pull messages.

Push Messages are the messages sent to customer's mobile phones without any customer initiated request. For example: Marketing messages or message alerts from a bank due to some of the customer actions like (1) withdrawal of funds (2) payment through internet (3) Cheque bounce (4) Failure of payments (5) Salary credit etc. The best example of push messages are OTPs (One Time Passwords), the security passwords for doing any activity to the bank account through virtual channels.

Pull Messages are the messages that are initiated by the customers of the financial institution using a mobile phone. Most of the pull messages are for obtaining information from the banks like (1) balance enquiry (2) Stop payment of cheques (3) Hot-listing debit/ATM cards (4) currency exchange rate enquiry etc. To provide this type of services banks offer a standard code to a specific number. In general, it is mandatory to register specifically the mobile numbers with the banks for obtaining the service.

❖ How the Risk Involved in SMS banking is mitigated?

In terms of security in doing the transaction SMS technology is considered as high risk since the method of sending the information can be easily spoof-able due to insecure encryption. Most of the banks providing services through SMS banking are using quality gateways to avoid possible theft of information and also ensures a SLA (Service level agreements).

The lack of encryption is inherent to the SMS banking, so banks are introducing compensating controls and limiting the scope of the SMS banking only to the services where it has an advantage over the other channels. Advanced SMS banking solutions also cater to providing failover mechanisms and least-cost routing

Lot of software applications are available for banks to provide SMS banking, but the only open source online banking platform supporting mobile banking and SMS payments is CYCLOS.

The first mobile banking service in Bangladesh was offered by Dutch Bangla Bank from March 2011 using the Sybase mobile banking platform.

Sending the coded message (SMS) to process the request is part of mobile banking called SMS banking. Mobile banking supports more functions than detailed in our previous edition depending on the technology used.

❖ Concepts of Mobile Banking:

Basically mobile banking can be categorized under the following concepts. They are

1. Mobile Accounting Services
2. Mobile Brokerage Service
3. Mobile Financial information services

Transaction based services are categorized under accounting services or brokerage services. Non transaction based services but are required to process the transaction are considered under the financial information services like balance enquiry (information service) to do a fund transfer. Thus the technology vendors offer information services as an independent module and the accounting and the brokerage services are combined with information modules.

❖ Types of Mobile Banking operations:

A wide spectrum of models of operation through mobile banking is evolving. Depending on the objective of the mobile banking service, the structure of the operation of the mobile banking will vary in all the models. For example, if the mobile banking service is offered to attract low-income population in rural locations, the business model will include the banking agents i.e., retail or postal outlets that process financial transactions on behalf of the bank.

The banking agent is an important part of the mobile banking business model since customer care, service quality, and cash management will depend on them. Many telecom companies are supporting the banks by providing the agent structure through their retail sellers. Some banks in Latin America like Colombia, Brazil, Peru, are using pharmacies, bakeries as their agents of mobile banking.

These models differ primarily on who will establish the relationship (account opening, deposit taking, lending etc.) to the end customer, the Bank or the Non-Bank/ Telecommunication Company and the nature of the agency agreement. Thus the mobile banking can be classified into three broad categories - Bank Focused, Bank-Led and Nonbank-Led

❖ Bank Focused Model:

Bank focused model is nothing but extending the few of the services offered by the conventional branch through mobile banking channel to reduce the cost of the current operation of banking channels. This is considered an addition with the objective to reduce the cost of operation. This model doesn't involve any intermediaries. **Best example:** SMS banking where it shifts the existing customer to the new channel.

❖ Bank-Led Model

Bank led model suggest to provide the whole banking services through the mobile banking channel, thereby extending the presence of banking to different regions without present in the locations physically. This model employs more agents to offer the services to the remote locations. In this

model bank supports the access to banking through any of the defined telecom service providers. **For example:** the fund transfer using IMPS (Interbank Mobile Payment Service) is acting like NEFT to transfer funds from the one bank to another.

❖ Non-Bank Led Model:

In this model, the role of the bank is limited to the day to day accounting management whereas the telecom service provider contacts the individual customer directly. In general, this model works on loading the funds to the mobile service SIM account and utilize them for the required kind of transaction. **For Example:** In India, Airtel Money is a Non-bank led mobile banking service.

On Facts Card:

The Interbank Mobile Payments Service (IMPS) is piloted with four banks in India, namely State Bank of India, Union Bank of India, ICICI bank ltd, and Bank of India during the month of August 2010. Towards the end of piloting Yes Bank, Axis Bank and HDFC Bank joined as members. The IMPS was publically launched during the month of November 2010 by Deputy Governor of RBI in Mumbai.

Currently there are more than 50 member banks to the IMPS services. The fund transfer through IMPS is 24/7 unlike RTGS. The basic requirements to transact through IMPS are MMID (Mobile Money Identifier) and MPIN or with IFSC code.

Currently, for any transaction performed in the account an SMS is sent to customer's registered mobile number. Beyond SMS there are huge set of services offered by banks through mobile banking.

❖ Category of Mobile Banking services:

There are different types of services that are offered by banks through mobile banking. They are broadly classified as Information services, Transaction services, Investment services, Allied services and Other General services.

Information Services: The lists of information services offered by mobile banking are (1) Transaction history, Example: Mini statements (2) Alerts, Ex: Salary credit, Cheque bounce (3) Monitoring information Ex: Maturity of deposit, Balance below threshold (4) Product information, Ex: Loan / mutual fund details (5) Enquiries, Ex: Last Transaction, delivery status of cheque book

Transaction services: Mobile banking supports many transaction services like, (1) Fund Transfer within and outside the branch accounts (2) Payments for purchase (3) International remittances (4) Cash deposit and Withdrawal – through banking agent (5) Deposit and Withdrawal through ATMs (6) Mobile recharge (7) Bill payments etc.

Investment Services: Banks offers many investment services through mobile banking. They are (1) Portfolio management services (2) Secondary market trading and information services (3) Mutual funds purchase and sales (5) Insurance services etc.

Allied Services: Non-financial transactions offering of the banks are covered under the allied services. They are (1) Ordering the Cheque books (2) Cheque stop payment services (3) Blocking of cards (4) PIN generation (5) Account opening and loan application (6) Complaints support etc.

Other General Services: The services offered by mobile banking that are not covered under the above mentioned are covered under general services. They are (1) Locating a branch or ATM or banking agent (2) Loyalty or Marketing offers (3) News and weather updates etc.

❖ Future projects on mobile banking:

According to the article published by World Business Institute of Australia based on the "International Review of Business Research Paper", there are many proposals under review around the world. Some of them are

1. Communication Enrichment – Voice interaction with banking agents and advisors
2. Universal transaction services – Comprehensive " Mobile Wallet"
3. Customer Education – Creating awareness about banking services
4. Personalization of corporate banking services
5. Brand building

❖ Challenges of Mobile Banking:

Banks are facing multiple challenges to offer banking services through mobiles. Few of the challenges are

1. **Handset operability:** Banks can't force the customer to use specific model of mobiles, so banks are required to find a compatible mobile banking solution. Based on the handset and its application few services offered may not be available to all the customers. Some countries like South Africa which adopted by policy to USSD (Unstructured Supplementary Services Data) to achieve communication with wide range of phones.
2. **Security:** Security of the financial transaction executed is the common responsibility of the mobile application developer, Mobile operator and the bank. The challenges related to security are the device security, the application security (password to access the mobile service), security of accessing the mobile banking, data encryption etc. Bank SLA (Service Level Agreement) should cover the security issues in detail.
3. **Scalability and reliability:** The biggest challenge for the banks is to satisfy the customer expectation on the number of services provided during the course of time and also providing the continuous reliable service to the customer anywhere and all the time.
4. **Application Distribution:** Any updation of the mobile banking application to be distributed to all the customers opted for the service at the earliest and convenient way. The mode of supplying the update to the users is one of the big challenges.
5. **Personalization:** One of the major challenge for the banks are personalizing the mobile banking services like language, Formats, alerts etc.

❖ USSD Technology some facts

1. USSD allows session based communication between the server and the mobile device
2. Real time messaging as against the store and forward nature of SMS technology
3. Guaranteed message delivery and acknowledgment
4. Consistent service during roaming with the use of HLR (Home Location Register) Technique
5. Supporting wider variety of applications platforms J2ME, WAP, CAMAL, SIM Toolkit
6. Works only on the GSM mobiles

III. Banking Services through Internet

E- Banking is the term coined for all types of electronic channels of banking. Out of all the virtual channels of banking, Internet banking is the most successful banking channel in terms of number of services offered.

❖ Internet Banking Services

It is one of the services offered by banks through electronic channels to access the bank account without any restriction on the time and location. It should not be confused with fully internet based banks like Security First Network Bank in US which were operated virtually during the late 1990s.

Now a day's more than 90% of commercial banks are providing their services through internet. The list of services offered through internet depends on the compatibility of the banking product/service to the medium and the regulatory guide lines. Internet banking acts as a vehicle that delivers the banking needs to the door steps.

❖ Functions of internet banking:-

The services offered through internet banking channels are basically classified under the following categories

1. Information and data related services – (Information related to the complete relationship of the customer with the bank including accounts, loans, investments, insurances etc.)
2. Payment and Fund transfer – (To make bill payments, transfer funds to other bank account, International remittances etc.)
3. Application and New product services – (Opening of an account, applying for a loan, enquiry about the services etc.)

❖ Advantages of Internet Banking:

Internet banking channels is one of most effective mode of alternate banking channels which are utilized by banks to offer maximum number of services next to branch channel. The advantages of internet banking channels are

Advantages to Banks are (1) reduced cost of operation (2) enhanced geographical and customer coverage (3) flexibility in offering the products and services (4) effective alternate medium of communication etc.

Advantages to customers are (1) easy access to banking (2) bill payments without queues (3) fast resolution on queries etc.

❖ Risk factors and Guidelines:

Security Risk: The major concerns with respect to internet banking are the safety and security related to data of bank account, transactional information and also the access of their accounts. Considering the risk involved in internet banking each country and regulators framed different types of rules to provide the services through internet banking.

The banks are bound to maintain certain security policies related to internet banking, there are specifications related to use of updated technology for banking sites and also the network. In India the RBI has issued guidelines for data base administration and testing on regular intervals by a separate department of a bank that works on these major aspects apart from the guidelines on technology use.

The guidelines go to the extent of (1) describing the access to the account (like unique user name and passwords), (2) multiple levels of protection on access and transact through internet (like login password, transaction password, card base authentication, mobile based authentication, security tokens etc.)

The guidelines are also issued in terms of limitation on the usage of services through internet banking like limits on the amount of transactions, limit on number of transactions, registration of beneficiaries, list of service offered etc.

Other security threats: The threats include Phishing, viruses, theft of user identity and password through other means etc. Banks issued guidelines to overcome these threats such as (1) using the net banking facility from personal computer only and not at cyber centers or any other places, (2) It is good to type the address of site instead of reaching the site through other links (3) It is good to provide relevant details only in relevant pages of banking site etc.

❖ Virtual Banking – A concept of Banking without branches

Manulife Bank is the first bank to introduce the concept of branchless banking. In 1991, it sold all the retail branch outlets to Laurentian Bank and transformed into a bank that provided banking services through advisors, banking consultants, call centre personnel, interactive voice response. After the introduction of internet banking they introduced web banking.

Many conventional banks are also floating virtual banks like ING Direct – part of ING Group, UBank – Part of National Australian Bank, First Direct – Part of HSBC group etc

❖ INTERNET BANKING – SPECIFICATIONS

Banking products in the internet platform are more vulnerable to many risks compared to other industry. Will the internet banking channel provide efficient service to the customers in this high risk environment?

❖ MAJOR REGULATORY CONCERNS ON INTERNET BANKING:

Each country regulator raises their concerns on offering banking services through internet, depending on the environment and the extension of the services offered to the global clients. These concerns can be clubbed into the following:

Operational risk related issues: The architecture of the Internet exposes the banks' systems to external world. Further, there is no audit trails on the access and vulnerability to cyber fraud. To mitigate the operational risk matters regulators issued guidelines on outsourcing, record maintenance, adequate disclosure to inform customers regarding the risks and issue of minimum standards of technology and security. (We discussed in detail in our last edition)

Cross border issues: The Internet enable banks to source deposits from jurisdiction where they are not licensed or supervised or have access to payment systems. Customers can park their funds in jurisdictions where their national authorities have no access to records. Another cross border issue is where banks choose to locate their processing centers, records and back up centers. Country specific approaches are being adopted at the national level and the BCBS (Basel Committee) is working at an international level.

Customer protection and confidentiality issues: The loss of customer data may pose a reputation risk. Internet exposes data to the possibility of interception by unauthorized agents, who may then use the data without the approval of the customers. To address these risks customers need to be educated by adequate disclosures.

Competitiveness and profitability issues: Internet banking is reducing the cost of doing transactions in the long run but doing the limited business by the Internet channel will not support the ROI for the infrastructure in which banks have invested. Considering these, the regulators framed the guidelines for tie-ups with solution providers in setting up payment gateways, portals and Internet solutions and the alliance with other businesses for cross-selling products.

❖ OVERVIEW ON THE INTERNET BANKING APPLICATION ACCESS ARCHITECTURE:

Internet banking applications run on diverse platforms, operating systems and use different architectures. The product may support bank-wide operations or branch level automation. These products allow different levels of access to the customers. The products accessible through Internet can be classified into three types based on the levels of access granted

Information only systems: General-purpose information like interest rates, branch locations, product features, FAQs, downloading applications, loan and deposit calculators are provided on the bank's web site. No identification or authentication of customers is done and there is no interaction between the bank's production system and the customer. **For Example:** Access to the account and transaction specific details would not be provided in the website without login credentials

Electronic Information Transfer System: These types of systems are providing customer specific information in the form of account balances, transaction details, statement of account etc. The information is still largely 'read only'. Identification and authentication of customers by relatively simple techniques (like passwords). Information is fetched in either the batch mode or offline from the Bank's production system. Thus, the bank's main application system is not directly accessed

Fully Transactional System: These systems provide bi-directional transaction capabilities. The bank allows customers to submit transactions on its systems and these directly update customer accounts. Therefore, security and control systems are required to be strongest in this form.

❖ AUTHENTICATION TECHNIQUES IN INTERNET BANKING:

Authentication is a process to verify the claimed identity. There are various techniques available for authentication. Password is the most extensively used method. Most of the financial institutions use passwords along with PIN for authentication. Technologies such as tokens, smart cards and biometrics can be used to strengthen the security structure by requiring the user to possess something physical.

Token technology: It relies on a separate physical device, which is retained by an individual, to verify the user's identity. The token resembles a small hand-held card or calculator and is used to generate passwords. The device is usually synchronized with security software in the host computer such as an internal clock or an identical time based mathematical algorithm. Tokens are well suited for one-time password generation and access control. A separate PIN is typically required to activate the token.

Smart cards: It resembles credit cards or magnetic stripe cards, but contain an embedded computer chip. The chip includes a processor, operating system and both Read Only Memory (ROM) and Random Access Memory (RAM). They can be used to generate one-time passwords when prompted by a host computer, or to carry cryptographic keys. A smart card reader is required for their use.

Biometrics: This technology involves identification and verification of an individual based on some physical characteristic, such as fingerprint analysis, hand geometry, or retina scanning. This technology is advancing rapidly, and offers an alternative means to authenticate a user.

❖ Fact Card:

Government of India has enacted The Information Technology Act, 2000, in order to provide legal recognition for transactions carried out by means of electronic data interchange commonly referred to as 'electronic commerce'. However, this Act will not apply to certain provision covered under the following

1. A negotiable instrument as defined in section 13 of the Negotiable Instruments Act, 1881
2. A power-of-attorney as defined in section 1A of the Power-of-Attorney Act, 1882
3. A trust as defined in section 3 of the Indian Trusts Act, 1882
4. A "will" as defined in clause (h) of section 2 of the Indian Succession Act, 1925
5. Any contract for the sale or conveyance of immovable property or any interest in such property
6. Any such class of transactions as may be notified by the Central Government in the official Gazette

❖ Internet Banking – B2B

Banking products in the corporate segment are more complex compared to the retail segment. In such a scenario, what would be the efficiency of the service provided by the internet banking channel? In this edition of BankTimes, we will see more about the Internet banking channel with respect to corporate banking.

❖ Clientele segmentation with respect to channels:

In general, bank segregate the non-retail clients into Corporates and business banking/SMEs – terminology of classification may differ from bank to bank. The business banking/SME division of bank services huge volume of clients compared to corporate banking with more or less standardized solutions, whereas corporate banking, serves comparatively lesser number of clients with larger value and with more customized solutions. In such a scenario the requirements of internet banking also vary based on the segment.

❖ Corporate banking internet services offering - an overview:

1. Fragmented form of services through internet banking with multiple logins for different set of services
2. Obsolete technology implemented at the client location unable to update frequently due to cost and training issues (Customer education)
3. Complex interfaces for multiple services and unavailability of integration to provide different offers on internet banking due to more dependency on the paper based operation
4. Less option to provide mobile services due to the IP based internet banking services for security reasons
5. No product purchasing capability (Example: Extending a new line of credit by online purchase)

❖ Business banking Internet services offering – an overview

1. Internet banking services are hosted in the retail platform with limited functionality
2. Security similar to the retail and limitation on the process of authorization
3. Limitations on selling banking services through channels due to the complex nature of the banking requirements by the clients
4. Limitations on providing the mobile services
5. Limitations on upgrading the technology and training issues

❖ Expectation of customers from corporate internet banking Channel:

Login – It needs to be simple and convenient. While most business banking customers only need one login, the same cannot be fit for all corporate customers. There are more than one login are provided by single bank to provide the comprehensive coverage of services to the corporate. Current focus by the banks is to provide a single login to the customers. Currently software providers are investing in convergence of the multiple logins to single login, delivering cost savings, improved service consistency and future transformation flexibility and upgrade.

Content management/personalization of roles – Internet banks need the flexibility data management. It needs to support addition and amend of content in real-time and content handling to be business rather than IT driven. Serving content relevant to the user could optimize the offerings, improving the opportunities and improve customer experience.

Improved usability – Bankers requires the redesigning of corporate and business banking websites around a more intuitive user interface (UI), which can deliver real benefits to users and save significant amount of time. This can help to increase customer 'stickiness' and the proportion of business given to a particular bank. Effective usability must extend over multiple channels and devices with a seamless user experience across channels.

Multi-signature and differentiated authorizations – Business customers increasingly look for multiple signature authorizations and the ability to grant view-only or segmented threshold payment/transfer rights. There are customers of banks who want to delegate only view rights or low-limit payment authorization according to the organizational structure.

Alerts – Customers want online banks to offer configurable alerts. Customers want to be able to set alerts limits as per their requirement and receive alerts by their preferred delivery mechanisms (text, email, etc.). This includes a range of transaction alerts.

The absence of such simple functionality in these basic areas reduces customer service, increases costs and restricts the options for the bank in enhancing their Internet propositions on business opportunities.

❖ Challenge for banks in product offering for corporate customer

Internet banking for the B2B segment is more complex compared to retail segment because of more complex nature of the banking. Providing the effective B2B banking requirements like Trade finance services, Cash management service, Foreign exchange service and others through internet banking are difficult.

Example: Cash management

Offering effective cash management is critical to the success of any corporate Internet bank. Currently very few banks offer cash management to business banking customers in better way. Following are the list of few challenges (1) Requirement of analytical tools, (2) Analyzing the historical transaction data and refine the forecast to recreate the profiling of the transactions pattern, (3) Automated cash forecasting, (4) Supporting tools to execute the cash management requirements like sweeps, zero balancing by customer itself, (5) Optimization of cash managements requirements, (6) Cost control etc.

Legal:

As per Indian law, there IT related malfunction by the banks (any deviation of the Information security procedures and guidelines) can be considered under both the civil and criminal offenses. The civil liability exposes the banks to pay damages by way of compensation up to Rs. 5 crore under Information Technology Act before the Adjudicating Officer and beyond five crore in a court of competent jurisdiction.

The Criminal liability included the imprisonment of Top management of the banks up to 3 years along with the fine.

IV. Phone Banking – IVR

One of the major reasons for banks to choose the alternate channels of banking is to reduce the cost. Phone banking is one such channels of banking. IVR is a constituent of phone banking which is used to provide the service at a very low cost.

❖ Interactive Voice Response – defined

IVR – It is a technology that automates interactions with telephone callers. It allows a computer to interact with humans through the use of voice and keypad inputs. It allows the customers to interact with a company's host system using the device keypad or by voice recognition. Banks are increasingly turning to IVR to reduce the cost of common services, inquiry and other support calls.

IVR applications can be used to control most of the functionality where the interface can be broken down into a series of simple interactions. It is deployed in the network to handle large call volumes. IVR solutions have used pre-recorded voice prompts and menus to present information and options to callers, and touch-tone telephone keypad entry to gather responses. Modern IVR solutions also enable input and responses to be gathered via spoken words with voice recognition.

❖ Features of IVR:

Many features of IVR are that supports the requirements of banks to service customer at a low operating cost. Some of them are as follows

a. Supporting multiple languages
b. Flexibility of using any network lines (Wired, wireless, VOIP)
c. Flexible in supporting multiple category of services
d. Full Cut through – (can be interrupted at any point of time to switch to other channel of response)
e. Caller Identification and data storing

❖ How IVR are used in providing banking services?

IVR systems are typically used to service high call volumes, anytime service, reduce cost and improve the customer experience.

1. The use of IVR and voice automation allows callers' queries to be resolved without the need for queuing and incurring the cost of a live agent. If callers do not find the information they need or require further assistance, their calls are often transferred to an agent. The need of a physical employee is reduced and banks can use the agent's time for more complex interactions.
2. IVR systems can identify and segment the callers based on the inputs. The caller can be given the option to wait in the queue, choose an automated service, or request a callback. The system may obtain caller line identification (CLI) data from the network to help identify or authenticate the caller. Additional caller authentication data could include account number, personal information, password and biometrics.
3. Out-bound Calling: IVR systems can be used for outbound calls, as IVR systems are more intelligent than many predictive dialer systems, and can use Call Progress Detection to recognize different line conditions
4. IVR interacts with customer information systems and databases and also log call detail information into its own database for auditing, performance report, analyzing services and future system enhancements

❖ List of service provided by IVR:

Some of the services common services supported by IVR are (1) Call diverting (2) Message reverts (3) Call back support (4) Balance information (5) Payments and fund transfers (6) Biller registration (7) Marketing support etc.

Some of the advanced services provided by IVR systems are (1) Video response called as interactive voice and video response (IVVR), (2) Interactive messaging response - Response in the form of message to the registered mobile number etc.

❖ Some Technical Facts:

Dual-tone multi-frequency signaling (**DTMF**) is one of the technologies used in IVR for interaction with the customer. It is based on telecommunication signaling over analog telephone lines in the voice-frequency band between telephone handsets and other communications devices and the switching center.

The version of DTMF that is used in push-button telephones for tone dialing is known as **Touch-Tone**. AT&T is the leading telecommunication company which introduced the DTMF technology in the year 1963.

V. Phone Banking – Call center

Banks are pushing customers from conventional banking to alternate channels to reduce operating cost. Call centre is also one of the alternate channels used to provide banking service to the customers like branches.

❖ What Is Phone banking?

Phone banking is one of the channels of service provided by banks. This channel enables customer to perform financial transactions over the telephone, without the need to visit a bank branch or automated teller machine. Some Banks offer the service on a 24 hour basis. From the bank's point of view, phone banking reduces the cost of handling transactions by reducing the need for customers to visit a bank branch document less and non-cash related transactions. Call Center, IVR or combination of both would be considered as Phone banking.

Access to phone banking is the set up designed as per the bank's policy. Mostly access is by entering the details of the customer number and password by keypad. Some banks have set up additional security steps for access like OTPs, dual authentication, but there is no consistency to the approach adopted.

❖ What is Call Center?

Like the ATM, the call center also provides customers with a mechanism to make enquiries and issue service requests. This channel has helped banks cut branch and employee costs. Most banks first established in-house call centers. Many banks outsource the call centers later for economic reasons. Thanks to progress in technology, banks are able to offer more functionality to customers.

The facility to speak to a call center executive at any time during the transaction adds the all-important human element and enables a branch-like experience. Round the clock service can be provided through call centers. It also allows customers of any area in the world to transact with a single setup of the call center.

❖ Types of Call Center:

Inbound call center: It is designed to receive a large volume of requests or inbound calls from customers by telephone. Inbound call centers typically handle telephonic requests of customers for product, account assistance, sales, other inquiries related to the banking relationship.

Outbound call center: It is designed as telephone agents or telemarketers to make outgoing phone calls. Outbound call center are mostly employed for selling products and servicing customers for their request made in any channels. An outbound call center may be employed only for the purpose of servicing complaints and feedback.

❖ Limitations on call Centers:

Though call centers can provide service any time anywhere for customer, but it can't provide many services offered by branches. Some examples are (1) It is not convenient for financial planning services (2) Less manual intervention for providing the customized service (3) Less effective in cross sell or in providing alternate solutions to customers (4) The cost benefit equation is directly proportional to the average call time since involvement of human element in providing the service and transactions are more time consuming etc.

❖ Process adopted for effective Call center activities:

Each bank follows its own way of process at call centers according to the need. Some of the most common activities performed to improve the efficiency and effectiveness are

Queue and TAT Management: Call centers employ many technologies for managing the queue of call. The widely used techniques are ACD – Automated Call distributors and Skill based routing which distributes the call to the respective queue by analyzing the customer requirements (key inputs) and the availability of the specific service providing sections/departments.

Call Recording and Barging: Calls are recorded based on the sampling mechanism designed and the recorded calls would be analyzed for the quality for multiple dimensions like call time, effectiveness of service offered and employee efficiency, customer satisfaction and so on. Call barging is one of the methods of analyzing the quality. Barging is a feature of a key telephone system KTS or PBX; barge-in allows an authorized user from an authorized station to join, without invitation, an active call on a call in progress, using an authorization code.

❖ Services Offered by Call centers:

The types of financial transactions which a customer may transact through call centers are (1) Enquiry on account balances, list of latest transactions, Cheque status etc., (2) Electronic bill payments, (3) Funds transfers between accounts (4) Product Enquiry (5) Complaints Handling (6) Customer education (7) Marketing and Cross selling products etc.

❖ Some Facts about the Call Centre:

- First Call Center as part of centralizing the phone banking service was launched in the year 1983 in US by MCI.

- Phone banking is the 4th preferred channel of banking in the world after Internet banking, ATMs and branches as per the survey conducted by TEFEN Tribune.
- **Computer telephony integration**, also called **CTI**, is a common name for any technology that allows integrated voice interactions between telephone and computer. Service like call routing, Call recording, screen popping and many are part of the CTI technology.

VI. Automated Teller Machine – The ATM

Most widely distributed channel for banks across the geography to run the banking business is branch. With the advent of the wireless telecommunication technology, importance of the branches in the banking got replaced by Automated Teller Machines (ATMs).

❖ What are called Automated Teller Machines – ATMs?

ATM is the telecommunication device integrated with the banking servers to perform the activities of a human teller in the bank in order to service the client without human intervention. They are sometimes called as Automated Banking Machines (ABM), Automatic Teller Machine, Cash Machine, Cash dispenser, cash point and also called as hole in the wall in colloquial language in the UK.

❖ How the ATM serves the customer?

Most of the ATMs identify the customers using plastic cards with a magnetic stripe or a plastic smart card with a chip that contains a unique card number and security information like card expiry date or CVV number. Access to operate the banking account is provided by entering a personal identification number (PIN). ATMs can also use biometric recognition to identify the customer. Some banks operate the ATMs without plastic cards but by using the mobile phone number along with a specific identification code.

ATMs are connected to the interbank networks like Cirrus, PLUS for accessing any bank account through any ATMs and the authorization for the financial transaction are performed as per the standard ISO 8583 messaging system.

❖ How secure is the ATM for doing banking transactions?

Security of the ATM can be classified as Physical security and Data Security.

Physical Security: The possible Vault protection mechanisms are placed in the ATMs like double key (Digital key) opening, Strong Doors etc. Still the ATMs are vulnerable to burglary like ram-riding; in such scenario the risk is with banks, not to the customers of banks. Some banks in the world follow the concept of Intelligent Banknote Neutralization Systems, to trap the burglars easily.

Physical security implies the security to the customer visiting the ATMs; most of the financial institutions provide the emergency call assistance, inbuilt security cameras, silent alarm by reverse emergency PIN system and also armed guards to secure the ATM and the customers visiting the ATMs.

Data Security: Transactional secrecy and integrity of the ATM transaction are depending on the integrity of the crypto-processor. Sensitive data in the ATM transactions are usually encrypted based on Data Encryption standards, Remote Key Loading, Message Authentication code (MAC) etc.

❖ Services offered by the ATM Channel

Banks offer all possible teller functions through ATMs, Most widely available functions of the ATM are (1) Cash Withdrawal, and (2) Balance Enquiry.

Some banks offer additional services like (1) Recent Transaction History (Mini statements), (2) Cash Deposit (immediate credit in case of currency recognition is enabled), (3) Cheque deposit, (4) Static data update like mobile number (5) Bill Payments, (6) Passbook updation, (7) Credit card payments, (8) Fund transfer within the bank account and some time outside the bank network – based on configuration, (9) Product information, (10) Grievance addressing etc.

Automated Cash Handling: It is the process of handling the cash without using much of human effort. This concept is widely used by banks, casinos and other business environment where huge volume of physical cash involved.

Automated cash handling involves cash dispensing, counting, tracking, recycling, validating based on the configuration in the business environment.

Best Example: Teller assist units in retail bank branches. It works like an ATM and dispense the cash based on the input by the teller in the system. It reduces the time of teller in dispensing and accepting the cash at the counter.

VII. POS (Point of Sale) & KIOSK

Financial services are offered by multiple channels by institutions based on the nature of the customer market and cost of the channel. Branch is the costliest channel of banking; still banks can't do specific business without branches due to nature of some services offered.

Banking channels other than branch channels like ATM, Internet Banking, Mobile Banking, Phone Banking, POS Machines, Banking Agents, Banking Kiosks etc., are considered as alternate channels of banking. POS machines, banking kiosks, banking agents are cost effective but limited service channels of banking.

❖ What is POS Machine?

POS Machine, means Point Of Sale device generally refers to the physical electronic cash register. Current devise in POS terminals are advance compared to the initial microprocessor based machines. Current machines are integrated with the banking services through communication network. They are equipped with accessing the customer's bank account online and perform the transaction.

Banking services are offered through POS machines depending on the central bank regulations and bank's preferences. Most familiar transaction through the POS machines is payment to any purchase made at the merchant. Apart from the payments, some banks allow cash withdrawal, vendor bill payments, balance enquiry etc.

POS standards: POS Machines are interfaced with the network mostly through dialup phone lines by standardized interface systems. Initial standardized system is the OPOS based on Component Object Model. Most of the current POS machines work on JavaPOS which is largely platform independent.

POS machines functionally act as an interface between the bank customers, where the merchants/retail customers and consumers are linked.

❖ What is Banking Kiosk?

Banking Kiosk is one of the channels provided by banks to offer service to the customers. They are designed mostly to support the customers who are difficult to reach by other channels. It is the combination of ATM, Internet banking and Banking agent model. The functionality of the banking kiosk depends on the banks policy, central bank regulation and target customer segment.

Banking Kiosk allows the customer to do transfer of funds within bank account, to other bank accounts, Balance enquiry, Statement printing, Cash Deposit, Loan disbursement, Booking deposit, investment services, DD/MC printing, bill payments etc. The services offered by banks through kiosk are generally to reach the customers otherwise difficult or costly to reach. Services offered through kiosk are limited, but the same can be enhanced along with the combination of banking agents or mobile banking service.

Some banks operate mobile kiosks combined with banking agents to reach more customers in difficult terrains. Apart from kiosks, banks offer services through banking agents independent of other channels.

❖ KIOSK in Indian Context:

Banking Kiosk and BC (Business Correspondent) channel of banking are proposed by RBI as part of the financial inclusion plan. As part of financial inclusion, opening banking branches or any one of the channel of banking to cover villages with population above 2000 by March 2012 was achieved and process of ensuring coverage of villages with population below 2000 is underway.

Banks are mandated to open one in four branches in rural areas and fee less banking account with primary services as part of the financial inclusion plan.

Banks are allowed to process cash withdrawal at POS merchant locations considering the existence of more than 212 million debit cards in India.