1. INTRODUCTION
In India, getting the poor to bank has been difficult, thereby leaving financial inclusion. Technology is the key to financial inclusion as it can reduce costs significantly and can take banking to the masses. All technologies are not suitable for financial inclusion due to issues of affordability, accessibility, security, and privacy. In the last decade, mobile phone technology has emerged as the most promising and well-suited channel for financial inclusion. The use of mobile phones for inclusive finance is very popular in countries where most of the population is unbanked or under banked. The Indian government has also realized that the mobile phone can be an important mode for the propagation of financial inclusion in the country. The deep penetration of the mobile to the poorest sections has opened up possibilities of their inclusion through this technology. Additionally, studies show that the poor do save in various forms as they have several financial needs.

1.1. Role of Technology in Financial Inclusion
Developments in the field of Information Technology (IT) strongly support the growth and inclusiveness of the banking sector, thereby facilitating inclusive economic growth. It not only enhances the competitive efficiency of the banking sector by strengthening back-end administrative processes, it also improves the front-end operations and helps in bringing down the transaction costs for the customers. It has the potential of furthering financial inclusion by making small ticket retail transactions cheaper, easier and faster for the banking sector as well as for the small customers. The Reserve Bank has been actively involved in harnessing technology for the development of the Indian banking sector.

A major technological development in banking sector is the adoption of the Core Banking Solutions (CBS). CBS is networking of branches, which enables customers to operate their accounts and avail of banking services from any branch of the Bank on CBS network, regardless of where the customer maintains his/her account. The customer is no more the customer of a branch as he becomes the Bank’s customer. CBS is a step towards enhancing, customer convenience at anytime. It is important to leverage on this technological advancement to look at areas beyond CBS that can help in not just delivering quality and efficient services to customers but also generating and managing information effectively. Another major technological development, which has revolutionized the delivery channel in the banking sector, has been the growth of Automated Teller Machines (ATMs). The banking space has seen considerable growth through the ATM.

1.1.1. Micro ATMs: The presence of ATMs mostly found in Metro/Urban centers and banks are not keen to install ATMs at Rural/Semi-Urban centers on account of high investment and low transaction volume. In order to make the ATMs viable at these centers, there is a need to deploy low cost ATMs with basic features such as cash withdrawal and balance enquiry and should be located at places where rural folk pays frequent visits such as petrol pumps, mandis etc. It is convenient and cost effective compared to paying visit to the bank branch located at nearby center.

1.1.2. Biometric ATMs: The penetration of ATMs into Rural/Semi-urban areas may not serve the envisaged purpose unless it is put to use by illiterates/semi-literate whose presence is predominant in rural areas. The existing ATMs are not being used optimally by rural folk on account of PIN and Password related issues. Introduction of Biometric ATMs enables the illiterate and semi-literate customers to avail ATM facilities on par with literate customers. Under this, Thumb impression of the cardholder will be scanned and transfer the same to central server as one time measure. ATM dispenses cash and other services only after verifying the thumb impression of the cardholder with that of finger print available with the bank’s server.

1.1.3. Mobile ATMs are designed for providing ATM facility to the rural folk as well as other customers. The Van would move to the pre-determined places and also accessible to Biometric card holders. Opening of accounts also can be undertaken during the visits to the rural areas.

All these above initiatives warrant the banks to invest substantial amount on infrastructure besides recurring expenditure. The distribution of financial products and services at the lowest rung of the pyramid requires a low-cost model that allows accepting and making of a large number of micro payments to and from the poor. The high intermediary cost of the banks is a stumbling block to reach the poor, which need to be addressed. Hence, it is warranted the banks to search for the following alternate models to extend Branchless Banking across rural India. High Operating Costs and Low Business Volume are the major constraints of the banks in extending banking services especially in remote rural and inaccessible areas through Branch Banking Model. To address this issue, RBI permitted the banks to make use of the services of Business Facilitators and Business Correspondents to take banking to un-banked areas in a most cost effective manner.

KEYWORDS
Financial inclusion, Information technology, Core banking Solutions

ABSTRACT
Technology has become the driving force of change in the modern world. Financial inclusion initiative primarily aims to deliver financial services to all the people in a fair, transparent and equitable manner at an affordable cost, making latest technologies available in these areas are also one of the prerequisites for overall development of our country. Technology has not only changed the way we communicate, but has also altered our economic structures. This paper focuses on role of technology in financial inclusion.

1. INTRODUCTION
In India, getting the poor to bank has been difficult, thereby leaving financial inclusion. Technology is the key to financial inclusion as it can reduce costs significantly and can take banking to the masses. All technologies are not suitable for financial inclusion due to issues of affordability, accessibility, security, and privacy. In the last decade, mobile phone technology has emerged as the most promising and well-suited channel for financial inclusion. The use of mobile phones for inclusive finance is very popular in countries where most of the population is unbanked or under banked. The Indian government has also realized that the mobile phone can be an important mode for the propagation of financial inclusion in the country. The deep penetration of the mobile to the poorest sections has opened up possibilities of their inclusion through this technology. Additionally, studies show that the poor do save in various forms as they have several financial needs.

1.1. Role of Technology in Financial Inclusion
Developments in the field of Information Technology (IT) strongly support the growth and inclusiveness of the banking sector, thereby facilitating inclusive economic growth. It not only enhances the competitive efficiency of the banking sector by strengthening back-end administrative processes, it also improves the front-end operations and helps in bringing down the transaction costs for the customers. It has the potential of furthering financial inclusion by making small ticket retail transactions cheaper, easier and faster for the banking sector as well as for the small customers. The Reserve Bank has been actively involved in harnessing technology for the development of the Indian banking sector.

A major technological development in banking sector is the adoption of the Core Banking Solutions (CBS). CBS is networking of branches, which enables customers to operate their accounts and avail of banking services from any branch of the Bank on CBS network, regardless of where the customer maintains his/her account. The customer is no more the customer of a branch as he becomes the Bank’s customer. CBS is a step towards enhancing, customer convenience at anytime. It is important to leverage on this technological advancement to look at areas beyond CBS that can help in not just delivering quality and efficient services to customers but also generating and managing information effectively. Another major technological development, which has revolutionized the delivery channel in the banking sector, has been the growth of Automated Teller Machines (ATMs). The banking space has seen considerable growth through the ATM.

1.1.1. Micro ATMs: The presence of ATMs mostly found in Metro/Urban centers and banks are not keen to install ATMs at Rural/Semi-Urban centers on account of high investment and low transaction volume. In order to make the ATMs viable at these centers, there is a need to deploy low cost ATMs with basic features such as cash withdrawal and balance enquiry and should be located at places where rural folk pays frequent visits such as petrol pumps, mandis etc. It is convenient and cost effective compared to paying visit to the bank branch located at nearby center.

1.1.2. Biometric ATMs: The penetration of ATMs into Rural/Semi-urban areas may not serve the envisaged purpose unless it is put to use by illiterates/semi-literate whose presence is predominant in rural areas. The existing ATMs are not being used optimally by rural folk on account of PIN and Password related issues. Introduction of Biometric ATMs enables the illiterate and semi-literate customers to avail ATM facilities on par with literate customers. Under this, Thumb impression of the cardholder will be scanned and transfer the same to central server as one time measure. ATM dispenses cash and other services only after verifying the thumb impression of the cardholder with that of finger print available with the bank’s server.

1.1.3. Mobile ATMs are designed for providing ATM facility to the rural folk as well as other customers. The Van would move to the pre-determined places and also accessible to Biometric card holders. Opening of accounts also can be undertaken during the visits to the rural areas.

All these above initiatives warrant the banks to invest substantial amount on infrastructure besides recurring expenditure. The distribution of financial products and services at the lowest rung of the pyramid requires a low-cost model that allows accepting and making of a large number of micro payments to and from the poor. The high intermediary cost of the banks is a stumbling block to reach the poor, which need to be addressed. Hence, it is warranted the banks to search for the following alternate models to extend Branchless Banking across rural India. High Operating Costs and Low Business Volume are the major constraints of the banks in extending banking services especially in remote rural and inaccessible areas through Branch Banking Model. To address this issue, RBI permitted the banks to make use of the services of Business Facilitators and Business Correspondents to take banking to un-banked areas in a most cost effective manner.
1.1.4. Business Correspondent (BC) model envisages the use of identified institutional agents, organizations and other entities for supporting the Bank in extending Financial Services, operating from different locations away from the Bank branches. The scope of activities to be undertaken by the BCs will include Collection of small value deposits. Collection of interest Sale of micro insurance and mutual fund products or pension products and other third party products and receipt and delivery of small value remittances. Under this model, the user is required to open account with a Bank and franchised to BC for the purpose of extending approved services. Technology plays an important role to establish link between the User, BC and Bank for seamless operations duly protecting the interest of all the concerned. Many organized players are entering in to this area and showing keen interest to make the model success by providing the desired services to the Users in a most cost effective and convenient manner using innovative technology applications.

1.1.5. Mobile Banking Model The mobile-phone revolution that is transforming the world could also turn into a banking revolution. Today, the number of Mobiles in India is 60 crore and this number is expected to reach 70 crore by next year. The reach of mobile to the remote village and its usage by the common man has become order of the day and it is estimated that around 14th of mobile users are residing in villages/small towns. The coverage of mobile phones and the use of such instruments by all section of the population can be exploited for extending financial services to the excluded populations. It enables the subscribers to manage their financial transactions (funds transfer) independent of place and time. The subscriber can approach to a retailer of mobile network for withdrawal/deposit of money and the transaction takes place using SMS messages.

1.1.6. National Payment Corporation of India (NPCI) has initiated steps to introduce Inter-Bank Mobile Payment Service (IMPS) which allows funds transfer across the banks to the credit of beneficiary accounts within India using mobile phones. It enables the banks to extend financial services independent of Agents or Business Correspondents. RBI is keen to implement this model by all banks by 31st March 2011 and allow transfer of funds up to 50000/- free of cost. South Africa and Philippines countries have implemented this model successfully and providing banking services to the remote rural areas.

1.1.7. Smart Cards State Governments are actively looking at making pension payments as also disbursements under Rural Employment Generation Program using through smart cards linked bank accounts. Smart card provides biometric authentication, which would help in reducing frauds and ensure identity of customers. Such cards can also hold all transaction details on the card. In order to popularize smart cards, all agriculture short term loans and payment of social security schemes are to be dispensed through Smart Cards.

1.1.8. Unique Identification Authority of India (UIDAI) with an objective to issue a unique identification number known as Aadhaar to all Indian residents with intent to eliminate duplicate/fake identities and to put hassle-free, cost effective verification/authentication system in place thereby to save considerable resources of various User Departments as well as beneficiaries at large. UID project gives a big push to the government’s financial inclusion agenda and also provides the strong foundation to deliver better services and paves the way to improve the operational efficiency of the system. All Public Sector Banks are acting as Registrars to undertake enrolment and authenticated services to their clientele and also other residents using technology embedded outsourced model.

1.1.9. Tie-up with Post Offices Modernization of Post Offices is in full swing and now they are well connected. Banks may make use of the presence of the post offices to extend banking services to the persons of unbanked areas. Smart Cards with bio-metric features will be delivered to them. The customer has to produce the Smart Card at post office for remitting cash or for withdrawal.

1.1.10. E-Server Centers Banks may enter agreement with the respective state governments for sharing of resources, so that our rural/semi-urban customers can undertake financial transactions (Cash Deposits/Withdrawals) at these centers, which will be updated at Banks’ server every day.

1.1.11 T-Banking The presence of Television in all households is the order of the day and now it has become one of the most cost effective modes to disseminate information across the country. Banks may explore the possibility of making use of cable network to extend banking services to remote rural areas and this can be used as non-branch service delivery channel.

CONCLUSION
Financial Inclusion has been presently is in the midst of an Information Technology revolution. Combinations of regulatory and competitive reasons have led to increasing importance of total banking automation in the Indian banking sector. Information Technology has basically been used under the different avenues in banking. It is involved in communication, connectivity, Business Correspondents, Business Facilitators, National Payment Corporation of India (NPCI), Unique Identification Authority of India (UIDAI), Mobile Banking, Model E-Server Centers, and T-Banking. Information Technology enables sophisticated financial development and implementation to reach the banking sector activities. The Indian banking sector has been an important driving force behind the nation’s economic development. It develops industrialization, agriculture, real estate through the public and private sector and cooperative banks especially for the development of rural India required more banking facilities. It can be concluded that the financial reforms have had a moderately positive impact on reducing the concentration of the banking sector and improving performance Information Technology. It has been adopted in banking system and made them more efficient and effective.

REFERENCES