

Information and Communication Technology (ICT) – an easy apparatus for Financial Inclusion



Commerce

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ABSTRACT

The domain of business, society and economy are all influenced and driven by the developments of Technology. Today we are living in the era of highly developed Technologies which are changing our lifestyle, activities and use habits of different processes. The Information and Telecommunication technology (ICT) is bringing newer changes in our daily habits especially, the banking operations. The process of delivering the customer services, sanctioning the credits, reaching to prospective customers etc. are changing in a rapid way due to the ICT developments. This technology has important merits i.e. time saving mechanism. A person can operate entire banking services through this ICT. Much spoken and practiced function financial inclusion which basically is the delivering the financial services to the most deprived, lower income and unattended segments of the society at affordable costs. Credit facility, entrepreneurial credit, loans, mortgages, financial services, payment-remittance services and saving accounts are all come under the very periphery of the financial inclusion services. Thus in financial inclusion the target is to include everybody in the financial functions at their reasonable costs. In this domain the major supporting role is played by the ICT. This article will discuss the key components of financial inclusion and the related developed ICT which assists the financial inclusion as an easy apparatus.

I. INTRODUCTION:

The technology has changed the style of business, commerce, society and economy. In the hyper competitive market the organizations existence is determined by its competitiveness in the zone of technology. The better the access to the technology better is the capture to the market.

Liberalization, Globalization and Privatization has brought different practices that the organizations are compelled to implement measures for their existence. Through technology the organizations design their product, process and services which they basically do to differentiate their offerings from their competitors. Technology may be of different types like product technology, process technology and systems integration.

Information and communication technology (ICT) which is basically the combinations of computer hardware, software, network, databases and telecommunication devices integrated together. The ICT applications are helping the organizations in an efficient manner to design their products and also to offer their services. Technology in the competitive market hardly remains static, but it is really dynamic in nature that keeps on improving time to time.

The vital and indispensable link of the economy is the banking function. The bank performs several functions so as to circulate the fund in the economy. The banking functions are designed with the applications of ICT so as to offer the services to the customers. ICT makes the process of services easier.

II. NEED OF THE STUDY:

The banking services are targeted to the customers. The recent target of the banks is to capture the customers, who are basically the deprived sections, poorer section which is not yet exposed to the different banking services. These types of practices are referred as Financial Inclusion. Necessities of the study of financial inclusion are discussed below:

Financial inclusion is the delivering the financial services to the most deprived, lower income and unattended segments of the society at affordable costs.

Credit facility, entrepreneurial credit, loans, mortgages, financial services, payment-remittance services and saving accounts are all come under the very periphery of the financial inclusion services. Thus in financial inclusion the target is to include everybody in the financial functions.

The different deprived sections of the society like domestic workers, day laborers and farmers residing in the slums and rural areas are not exposed to the banking services. They do not even know the real functions of the banks. This financial inclusion will help them regarding those matters.

Now the initiatives like inclusive growth and financial inclusion are emphasized by the Government. Due to this banks are also proceeding in this track.

Lot of technologies is developed recently to help the businesses, banks and organizations. The growth and penetration of Internet coupled with ICT brought phenomenal changes in the business sectors.

The present study will explore the above facts from the observation in our society.

III. REVIEW OF LITERATURE:

A proper literature review can generate a wide range of ideas to the authors about their development of an article. The financial inclusion which is really the front line activities of different Financial Institutions and Banks are presented with the help of few literature reviews also some key technology applications in the banking sectors are focused.

50% of the Indian adult population is excluded from the financial sectors. In his work Gangopadhyay pointed out that it is not the rural people that have excluded but also lower income group of the urban areas are also excluded. According to his view it is largely due to the organized way of the services. The work further develops few questions like how can the transaction cost be reduced? Is it possible to develop some intermediary between banks and deprived sections? How to develop technology platform to address the issues? These were the major emphasis (Gangopadhyay ,2009).

Financial inclusion is the access of formal financial services at an affordable cost for all members of an economy targeting the low-income sections. It is the important part in poverty reduction and economic growth. They also mentioned the role of ICT in the financial inclusion to impart better services (Diniz, Birochi & Pozzebon ,2012).

Potential of technology is to connect people, commerce and provide access to education, entertainment and services. They basically concentrated on the applications of ICT in banking and

commerce (Foley & Ferri, 2012).

Financial Inclusion gives incremental and complementary solutions to tackle poverty and to promote inclusive development. They further elaborated that during global financial crisis it is the need to scale up Financial Inclusion (Chibba, 2009).

One study focused that the relationship between financial inclusion and development empirically considering country specific factors that are associated with the level of financial inclusion. In their study they pointed that in the socio-economic aspects it is components like income, inequality, literacy, urbanization, physical infrastructure which matters a lot (Sarma & Pais, 2011).

The policy discourses, considered the geographical issues. The study also examined the institutional role of Post Office (Midgley, 2005).

The advances in electronic banking technology cater the banking affairs via online banking channels. The study investigated the online banking acceptance in the light of the traditional technology acceptance model. They studied the model with a sample study of the size of 268. The study concluded the usefulness and information on online banking on the website (Pikkarainen, Karjaluo & Pahnila, 2004).

The use of technology in the delivery of banking services has resulted cost reduction and the elimination of uncertainties. The study also pointed the role played by technology in banking and the impact on the delivery of perceived service quality (Joseph, Mc Clure & Joseph, 1999).

A descriptive study was carried out to understand the consumer's attitudes and adoption of Internet banking among customers. The study revealed the significant differences between the demographic profiles and attitudes of users and non-users (Akinci, Aksov & Atilgan, 2004).

There is impact of IT in relationship marketing. It emphasized on how customer how customers use a combination of IT channels to interact with their financial service providers (Lang & Colgate, 2003).

ON THE ICT AREAS IN BANKS:

Bank Website: The bank website is the first step in the ICT applications. Through the bank's website the bank displays all sort of information. Generally through website the bank presents all sorts of its activities to the prospective clients and to their stake holders.

Electronic Banking: Electronic Banking indicates the availability of banking and 24 hours services for cash through ATM or direct deposits of paychecks into checking or savings accounts. It generally focuses on different types of transactions, rights and responsibilities and fees.

Mobile Banking: The use of mobile and smartphones for the banking purposes help the banks and customers to process the services and receive the services. Services like SMS alerts are very much helpful to the customers on the transactions.

ATM: Automated Teller Machines at different zones by different banks helps the customers to withdraw money instantly, update check books automatically etc. User friendly operations of ATMs are quite impressive in the operations of banking services.

Electronic Fund Transfer Systems (EFTS): It is the transferring of funds from one bank account to another instantly either from the same bank or to different banks through computerized systems without human interventions.

Automated Clearing Houses (ACH): It is electronic networks for financial transactions. ACH processes large amount of debit and credit transactions in batches.

Internet Banking: Here the Internet is used to deliver the banking services at different locations.

Real Time Gross Settlement: Through this Banks give electronic instructions to transfer fund from one account to another.

Debit Card: It is issued by the banks to its customers to withdraw money and to pay for goods they purchase.

Credit Card: These are basically the pay later card or the short term financing.

BASIC COMPONENTS OF FINANCIAL INCLUSION:

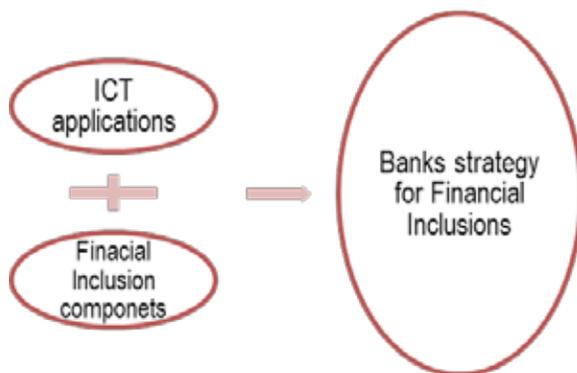
The Rangarajan Committee report on financial inclusion in 2008, RBI, IMAcS Research revealed the following facilities under the Financial Inclusion:

- Saving Products and Accounts.
- Credit Facilities.
- Entrepreneurial Credit.
- Loans and Insurance.
- Mortgage.
- Financial Advice.
- Payment and Remittance services.

IV. RESEARCH GAP:

From the available literatures it was observed that there were very limited studies on the contribution of ICT on Financial Inclusion. The study is situated in the right direction to fill the gap.

V. FRAME WORK FOR THE STUDY:



Model developed for the study By Dr.D.Ghosh, 2015

VI. OBJECTIVES OF THE STUDY:

Following are the objectives of the study:

- To know the penetration level of ICT in terms of Internet in the country.
- To know the status of Financial Inclusion in the country.
- To know the ICT services used by the banks customers in the order of their preferences.
- To know relationship between the ICT services of the banks with the satisfaction of the banks customers.

VII. SCOPE OF THE STUDY:

The study explores the banks ICT applications and Financial Inclusions in a detailed manner.

VIII. LIMITATIONS OF THE STUDY:

The present study only restricted to the southern part of Assam (I.e, Barak Velley) with limited sample size.

IX. RESEARCH METHODOLOGY AND DATA:

The present study is exploratory and empirical in nature with

the data gathered from both the primary sources as well as the secondary sources. Secondary sources of data were gathered from the annual reports of RBI, different publications etc. The primary data were obtained from the set of questionnaires, observation and interactions. Total of 50 numbers of people were studied. The sample was judgmental sample. To find the fourth objective the parameter for ICT services is chosen as ATM and Mobile Banking service –SMS alert

The following sample frame was designed for the study to find the third and fourth objective:

	From Area	Rural	From Area	Urban	Total
People	25		25		50

The statistical techniques like tables, charts are used here also the regression technique has been utilized.

X. DATA ANALYSIS AND FINDINGS:

To evaluate the first objective of the study, following table is used to locate the status of internet in the world.

Table1 World Internet Usage and population statistics JUNE 30, 2015

	Internet Users	Internet Users	Population	%of internet users in latest data
World Regions	Dec. 31, 2000	Latest Data	(2015 Est.)	upto June 2015
Africa	45,14,400	31,32,57,074	1,15,83,55,663	27.04325485
Asia	11,43,04,000	1,56,32,08,143	4,03,24,66,882	38.7655544
Europe	10,50,96,093	60,41,22,380	82,15,55,904	73.53393446
Middle East	32,84,800	11,58,23,882	23,61,37,235	49.04939367
North America	10,80,96,800	31,38,62,863	35,71,72,209	87.87437967
Latin America / Caribbean	1,80,68,919	33,31,15,908	61,77,76,105	53.92178579
Oceania/Australia	76,20,480	2,71,00,334	3,71,57,120	72.93443087
World Total	36,09,85,492	3,27,04,90,584	7,26,06,21,118	45.04422598

Source: Compilation of data from <http://www.internetworldstats.com/stats3.htm>

The statistics shows that the Internet users in Asia are 1,563,208,143 as per June 30, 2015. In term of % Asia are using 38.80% of internet at the end of 30th June 2015 ,which is very much than developed countries, like, Europe, North America, Australia etc. Also the study conducted by Oracle in 2014 revealed that the business world is accumulating data every seconds of every day. It is estimated that approximately 2.5 zetta-bytes of data were generated in 2014, and the trend shows that the data will be growing in the subsequent years, as the volume of businesses and customers are growing rapidly. The study of Cisco on global mobile data traffic and estimated that 24.3 EB for the year 2019, which is shown in Figure 1.

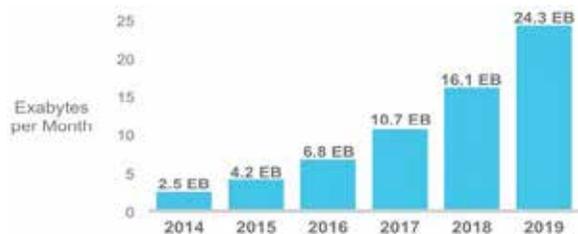


Figure 1. Mobile data traffic projection

Source: Cisco Global Mobile Data Traffic Forecast 2014-2019

TABLE 2: ASIA INTERNET USE

	Internet Users,	Internet Users	Users

Asia	(Year 2000)	30-Jun-15	% Asia
Afganistan	1,000	4,005,414	0.10%
Armenia	30,000	2,126,000	0.10%
Azerbaijan	12,000	5,851,753	0.40%
Bangladesh	100,000	44,625,000	2.90%
Bhutan	500	254,998	0.00%
Brunei Darussalam	30,000	318,900	0.00%
Caombodia	6,000	5,000,000	0.30%
China	22,500,000	674,000,000	43.10%
Georgia	20,000	2,411,370	0.20%
Hong Kong	2,283,000	5,751,357	0.40%
India	5,000,000	354,000,000	22.60%
Indonesia	2,000,000	73,000,000	4.70%
Japan	47,080,000	114,963,827	7.40%
Kazakhstan	70,000	9,966,444	0.60%
Korea, North	--	--	--
Korea, South	19,040,000	45,314,248	2.90%
Kyrgystan	51,600	2,194,400	0.10%
Laos	6,000	985,586	0.10%
Macao	60,000	413,608	0.00%
Malaysia	3,700,000	20,596,847	1.30%
Maldives	6,000	193,795	0.00%

	Internet Users,	Internet Us-	Users
Asia	(Year 2000)	30-Jun-15	% Asia
Mongolia	30,000	808,085	0.10%
Myanmar	1,000	1,182,724	0.10%
Nepal	50,000	4,871,521	0.30%
Pakistan	133,900	29,128,970	1.90%
Philipines	2,000,000	47,134,843	3.00%
Singapore	1,200,000	4,653,067	0.30%
Sri Lanka	121,500	5,689,800	0.40%
Taiwan	6,260,000	19,666,364	1.30%
Tajikistan	2,000	1,432,773	0.10%
Thailand	2,300,000	23,716,968	1.50%
Timor-Leste	0	14,035	0.00%
Turkmenistan	2,000	638,233	0.00%
Uzbekistan	7,500	12,716,575	0.80%
Vietnam	200,000	45,579,922	2.90%
Total Aisa	114,304,000	1,563,208,143	100.00%

Source: <http://www.internetworldstats.com/stats3.htm>

From the above table it is observed that the Internet users in Asia as per 2015, 30 June is 1,563,208,143 and India in 2nd position and China is the first in the race. Thus it indicates a wide potential to offer services by Internet in India.

In order to find the second objective the RBI annual report was explored and following things were obtained:

Table 3: Targets and Achievements for Agricultural Credit (rs. Billion)

End March	Sched-uled Com-mercial Banks Target	Achievements	Coop-erative Banks Target	Achievements	RRBs		Total	
					Target	Achievements	Target	Achievements
2013-14	4750	5090	1250	1199	1000	827	7000	7116
2014-15*	5400	5997	1400	1384	1200	1025	8000	8406

Source: RBI Annual Report 2015, *provisional

During 2013-2014 it was observed that total target by Banks for agricultural credits was Rs.7000 billion and the achievement was Rs 7116 billion. In 2014-15 the target was Rs 8000 billion and the achievement was Rs 8406 billion.

TABLE 4 FINANCIAL INCLUSION PLAN SUMMERY PROGRESS OF ALL BANKS INCLUDING RRBs.

Particulars	Year ended March 2010	Year ended March 2014	Year ended march 2015	Progress April 2014-March 2015
Banking outlets in villages-Branches	33378	46126	49571	3445
Banking outlets in villages-Branchless mode	34316	337678	504124	166446
Banking outlets in villages-Total	67694	383804	553713	169909
Urban locations covered through BCs	447	60730	96847	36117
Basic Savings Bank Deposit A/C through branches (No in Million)	60.2	126	210.3	84.3
Basic Savings Bank Deposit A/C through branches (Amt Rs Billion)	44.3	273.3	365	91.7
Basic Savings Bank Deposit A/C through BCs (No in Million)	13.3	116.9	187.8	70.9
Basic Savings Bank Deposit A/C through BCs (Amt Rs Billion)	10.7	39	74.6	35.6
BSBDAs Total (no in million)	73.5	243	398.1	155.1
BSBDAs Total (Amt Rs Billion)	55	312.3	439.5	127.2
OD facility availed in BSBDAs (no in million)	0.2	5.9	7.6	1.7
OD facility availed in BSBDAs (Amt Rs Billion)	0.1	16	19.9	3.9
KCCs (no in million)	24.3	39.9	42.5	2.6
KCCs (Amt Rs Billion)	1240.1	3684.5	4382.3	697.8
GCC (no in million)	1.4	7.4	9.2	1.8
GCC (Amt Rs Billion)	35.1	1096.9	1301.6	204.7
ICT A/Cs BC Transactions (No in million)*	26.5	328.6	477	477
ICT A/Cs BC Transactions (Amt Rs Billion)*	6.9	524.4	859.8	859.8

Source: RBI Annual Report 2015, * During the financial year

From the above table the information about the financial inclusion is obtained, and regarding ICT A/Cs it is 477 in millions for

2015 March and Rs 859.8 billion ICT A/Cs BC Transactions during March 2015.

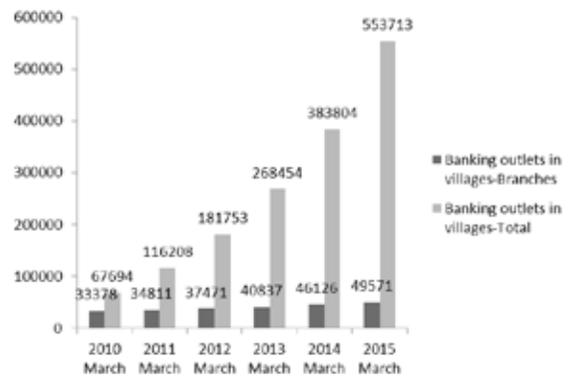
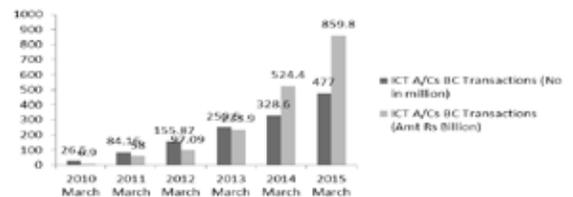


Figure 2: The scenario in Villages from March -2010- March 2015

Source: RBI annual reports of various years.

The data clearly shows that there is a substantial increase in the Banks Branch Outlets in villages from March 2010 to March 2015.

Figure 3: ICT A/Cs Branch Transactions:



Source: RBI annual reports of various years.

It is clear that the ICT A/Cs BC Transactions have increased from 2010 March to 2015 March.

To obtain the third objective the responses were obtained the sample and following facts were revealed which is presented in the form of table.

TABLE 5: ICT SERVICES USED BY BANKS CUSTOMERS

ICT Services	Customers Used	Percentage
ATM Services	50	100%
Direct deposit and withdrawal services	50	100%
SMS Alert (Mobile)	30	60%
Point of sale	0	0%
Internet banking	0	0%
Electronic cheque conversion	0	0%
Personal computer banking	0	0%

Source: Obtained in the field survey -2015

It was observed that 100% of the beneficiaries in the study were using the ATM services and 60% were using SMS alert (Mobile).

To derive the fourth objectives i.e, relationship between the

banks ICT service and the customers' satisfactions, the ICT parameter ATM service is chosen and the customers' satisfactions parameter sufficient and real time information by the banks were chosen in the study.

The parameter chosen ATM services is selected as X1, whereas customers' satisfactions parameter sufficient and real time information by the banks is chosen as Y. The study generated following table in the regression analysis in Excel 2013:

Regression Statistics	
Multiple R	0.608234522
R Square	0.369949233
Adjusted R Square	0.356823176
Standard Error	0.345990817
Observations	50

The ANOVA Table is :

ANOVA	df	SS	MS	F	Significance F
Regression	1	3.373937008	3.373937	28.184337	2.79418E-06
Residual	48	5.746062992	0.11971		
Total	49	9.12			

	Coefficients	Standard Error	t Stat	P-value
Intercept	1.950787402	0.344283896	5.666217	8.077E-07
ATM services	0.407480315	0.076754301	5.308892	2.794E-06

Thus the equation becomes:

$$Y = 0.407480315 X1 + 1.950787402$$

The coefficient of correlation between the parameters is moderate with 60.82%.

To derive the second part of the fourth objective i.e, relationship between the banks ICT service and the customers' satisfactions, the ICT parameter SMS service is chosen and the customers' satisfactions parameter sufficient and real time information by the banks were chosen in the study.

The parameter chosen SMS services is selected as X2, whereas customers' satisfactions parameter sufficient and real time information by the banks is chosen as Y. The study generated following table in the regression analysis in Excel 2013:

Regression Statistics	
Multiple R	0.504128285
R Square	0.254145328
Adjusted R Square	0.238606689
Standard Error	0.511233712
Observations	50

The ANOVA Table is

ANOVA	df	SS	MS	F	Significance F
Regression	1	4.274724	4.274724	16.3557	0.000189492
Residual	48	12.54528	0.26136		
Total	49	16.82			

	Coefficients	Standard Error	t Stat	P-value
Intercept	1.903543307	0.508711577	3.741891073	0.000487842
SMS Services	0.458661417	0.113411641	4.044218171	0.000189492

The equation becomes:

$$Y = 0.458661417 X2 + 1.903543307$$

The coefficient of correlation between the parameters here is 50.41%

XI. CONCLUSION:

Really it is the fact that the Government and Banks have taken good initiatives for financial inclusions. It is clear from the above findings that the activity by the banks for financial inclusion is increasing considering the penetration of Internet with the motto of Digital India. This is true that the application of ICT in banking is huge. The bank performs several functions so as to circulate the fund in the economy. The banking functions are designed with the applications of ICT so as to offer the services to the customers. ICT makes the process of services easier. Only thing that is needed is the education and training to the customers and banks staffs. This facility also saves our valuable time i.e. we can use our excess time in another part of development of the society. The E-governance initiatives may help in this aspect.

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