

Do you want to implement a scalable and sustainable financial inclusion strategy?

YES



Bringing financial services to the masses
An NCR White Paper on financial inclusion
2009

F R O S T  S U L L I V A N

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Acknowledgement

Frost & Sullivan is proud to be associated with NCR Corporation in creating a Whitepaper on the Financial Inclusion landscape in India. We would like to thank all the participants from the industry for providing us with valuable information to support this initiative.

The Key industry participants included Public Sector banks, Private Sector Banks, Co-operative Banks, Regional Rural Banks, Technology Vendors, Telecom Service Providers, Non Banking Financial institutes, Financial Education Institutes, Micro Finance and Micro Credit organizations, and Self Help Groups.

We thank you for your support and guidance, we truly believe this Whitepaper will help present a road map for the country to achieve its Financial Inclusion goals.

Executive Summary

Over the past decade, India has enjoyed strong economic growth and prosperity. Its gross domestic product (GDP) has averaged nine percent growth year on year for the past five years, earning a reputation as an emerging economic power. India is now the world's 12th-largest economy and fourth in terms of purchasing power parity (PPP), which is largely due to the increase in the size of its middle class consumer population. There are twice as many billionaires in India than in Japan and as many as in Germany, second only to the United States.

India's growth; however, is challenged by the disproportionate distribution of income and the disparity between the rich and poor. More than half the country's wealth is shared by only 10 percent of the population. In 2005, 42 percent of the population still struggled to live on less than US\$1.25 a day, the same proportion who survived on less than a dollar a day a quarter century earlier. This uneven growth has resulted in the exclusion of 51 percent of the country's population (560 million people) from formal sources of finance services, which is identified as a key cause of poverty, together with illiteracy, and a lack of access to social benefits, productive assets, and inadequate healthcare. India's continued growth can only be assured if steps are taken to ensure that the social and economic development is inclusive. Financial Inclusion is the delivery of formal banking services at affordable costs to the underserved sections of society.

The governments of India and other developing countries have made Financial Inclusion a priority – evidenced by policy development, regulatory reform and new funding vehicles. The government of India has set a target of reaching full inclusion by 2015. These objectives are being reached through financial instruments, such as microcredit, which have achieved positive results, helping thousands of the world's poor to lift themselves out of poverty. Globally, public recognition of the value of financial inclusion came when Dr. Muhammad Yunus, founder of Bangladesh's Grameen Bank, was awarded the 2006 Nobel peace prize for his work in bringing microfinance to the poor.

The intent of this White Paper is to examine the critical success factors and challenges that exist in the delivery of financial inclusion in India. In doing so, learnings were examined from case studies in India and other parts of the world. In depth interviews were conducted with stakeholders responsible for policy development and delivery in India, including representatives from the Reserve Bank of India (RBI) and leading financial institutions.

Conclusion: *The size of the unbanked and underserved population is too large and spread across too vast of geographies to be properly served by conventional channels alone. Self-Service technology solutions are essential to address the scalability and sustainability challenges facing financial inclusion.*

- *Providing greater confidence, security, and ease of use for those people using financial services, including overcoming issues such as literacy.*
- *Providing an affordable platform for the delivery of multiple financial products.*

In exploring these issues, the White Paper provides key learnings that policy makers, financial institutions and technology providers can use to establish a collaborative business model to deliver Financial Inclusion objectives.

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1. Introduction to Financial Inclusion

About 2.9 billion¹ people around the world do not have access to formal sources of banking and financial services.

In India alone 560 million² people are excluded from formal source of finance, a figure in tight correlation with the 41.6 percent (457 million) of the populace that still lives below the poverty line (US\$1.25/day).

While India has enjoyed growing domestic demand and globally recognized prowess in the areas of information technology, automotive, life sciences, telecommunications and even space exploration, its continued success and growth as an economic power (in common with other emerging economies) can only be assured if concrete steps are taken to ensure that the social and economic development is inclusive.

a. The role of Government

The importance of financial inclusion to national economies is evidenced by the support of individual governments as well as international bodies around the world.

The United Nations Capital Development Fund (UNCDF), which is present in 33 of the identified 50 Least Developed Countries³ (LDC), invests in local development and inclusive finance with a total program portfolio amounting to US\$130 million. UNCDF's vision of inclusive finance is to offer appropriate financial services to all segments of the population to be supported by sound government policies, legal and regulatory frameworks and infrastructure. UNCDF has been instrumental in taking innovative approaches to build inclusive financial sectors to help them reduce poverty and achieve inclusive growth.

"Financial Inclusion is Critical to achieve inclusive growth; which itself is a sin qua non for sustainable economic growth and development. Harnessing the power of technology is one of the most effective ways of integrating the unbanked population into the financial mainstream. Technology enables the provision of a host of services from depositing money into various government schemes to micro loans and micro insurance

P Chidambaram, Home Minister, (Former Finance minister), Government of India - In a message to Frost & Sullivan for the IT enabled Financial Inclusion event on 18th Sept '08

Similarly, the International Financial Corporation (IFC), a member of the World Bank, supports numerous causes designed to support the proliferation of financial inclusion.

¹ World Bank, United Nations

² Source: National Sample Survey Organization

³ Least Developed Countries (LDC) are low income countries, where according to the United Nations; growth faces long-term impediments – such as structural weakness and low Human Resource Development. ("High Income Economies" have GNI per Capita of \$11,456 or more: World bank criteria)

b. The role of technology

Government policies have laid a strong foundation wherein technology has helped to spread the reach of financial services. Some of the technology solutions being implemented today are Smart Cards, Biometric ATMs, Point of Service Devices and Mobile Phone Applications. Leading banking and financial institutions are engaged in providing banking services to the financially underserved through pilots or limited commercial rollouts using either one or multiple technologies cited above. However, the needs of the vast majority of the underserved and unbanked have not yet been addressed. Technology solutions are being promoted to address the scalability challenges facing financial inclusion in India and other developing countries. Amidst the ever-changing technology landscape, Self-service has emerged as the foremost scalable and sustainable solution.

c. Financial inclusion case studies

At a national level, significant steps have been taken to achieve financial inclusion by a number of governments. Some of these initiatives are shared below.

United Kingdom



According to the Public Management and Policy Association, one out of every eight adults in the UK is financially underserved. In the 2004 pre-budget report, the British government announced its strategy to tackle financial exclusion by 'promoting financial inclusion.'

The three priority areas set out in the report were:

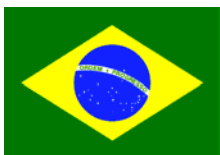
- Access to banking
- Access to affordable credit
- Access to free face to-face money advice.

The government established a Financial Inclusion Fund worth £120 mn for three years. The framework for delivering this ambitious plan also includes a Financial Inclusion Taskforce to monitor progress and give further recommendations.

Progress:

- In 2004, Government announced a goal of halving 2.8 mn adults without access to a bank account in two years. In 2005-06 unbanked population had fallen to 2 mn adults.
- Financial Inclusion Fund has provided growth funding which is about £42 mn initiative. The Fund provides capital for lending to financially excluded customers. Till December 2007, 46000 loans were made, totaling more than £20 mn.
- To provide face-to-face money advice, Department for Business, Enterprise and Regulatory Reform (BERR) recruited and trained 500 new money advisers. They have so far provided assistance to 66000 customers struggling with debt.

Brazil



Brazil's government has urged state banks to better serve poor people and reach out to the rural population. To support this aim, the government has relaxed account opening conditions and the rules for assigning banking correspondents⁴ (BCs) to deliver financial services. In Brazil, banks need to place 45 percent of sight deposits in reserve at the central bank at 0 percent rate of interest. To promote micro finance, central bank permits banks to take 2 percent of the allocated 45 percent deposit and deliver micro loans at between 24 and 48 percent interest rate. This acts as an incentive to reach out to low income population. Now, as a result of favorable government policy, there are more than 27,000 BCs in Brazil and four banks have acquired a total of eight million new customers in less than three-and-a-half years.

Kenya



In 2006, the Kenyan government passed The Microfinance Act, allowing Micro Finance Institutions (MFIs) to take deposits from May 2008. The Association of Microfinance Institutions of Kenya (AMFI) considers this act as a platform for MFIs to retain clients and provide better financial services. The Act addresses licensing provisions, minimum capital requirements, minimum liquid assets, submission of accounts to the Central Bank, supervision by the Central Bank, and limits on loan and credit facilities. It also seeks to protect depositors by mandating deposit-taking MFIs to contribute to the deposit protection fund.

China



China's central bank, the People's Bank of China, launched a pilot in 2006 to stimulate micro-lending to individuals and companies by township and village banks. Seven domestic micro-credit corporations were established in five provinces and two micro-credit corporations were created with assistance from the International Finance Corp (IFC), a member of the World Bank. After the success of the pilot, in October 2007 the China Banking Regulatory Commission's program was expanded nationwide. The program now covers 25 village banks.

India



The government of India's National Rural Financial Inclusion Plan (NRFIP) has set a target to achieve complete financial inclusion by 2015. The plan aims to serve fifty percent of the financially excluded (280 mn) population by 2012 through regional and semi-urban branches of commercial and regional rural banks.

⁴ Banking Correspondents (BC) or better known as agents represent the bank while delivering financial services from shared access outlets or during 'doorstep banking'. The BC may not necessarily be a bank employee but could be a financial service provider.

To help achieve these goals, two funds of about US\$125 million⁵ each have been allocated – the Financial Inclusion Fund (FIF) and the Financial Inclusion Technology Fund (FITF).

The objectives of the FIF is to support "developmental and promotional activities" with a view of securing greater financial inclusion, particularly among weaker sections, low-income groups and in under developed regions and hitherto un-banked areas.

Current banking infrastructure in rural India relies on the manual delivery of services. This presents a massive hurdle in reaching out to the sheer number and geographical spread of the financially underserved population. In matching the FIF with the Financial Inclusion Technology Fund (FITF), the government has given equal importance to the development of technology that can provide scalable and sustainable solutions for inclusive growth.

Specifically, the objectives of FITF are to enhance investment in Information and Communications Technology (ICT) aimed at stimulating research and technology innovation in the area of financial inclusion, increase the adoption of technology among financial services providers and users, and encourage an environment of innovation and cooperation among stakeholders.

The government has also set up a Committee on Financial Inclusion under the chairmanship of the ex-governor of the Reserve Bank of India (RBI), Dr. C Rangarajan, to study the pattern of exclusion, identify barriers, review international experience and provide recommendations for achieving the objectives of financial inclusion.

"Our banks can be the best banks only when they take their services to the remotest part of the country. We expect to have complete financial inclusion in the next five years. Today, no banker worth his salt can succeed without financial inclusion. The road is long but I believe it can be easily traversed."

**P Chidambaram
Former Finance Minister,
Ministry of Finance, Government
of India**

"The country has moved on to a higher growth trajectory. To sustain and accelerate the growth momentum, we have to ensure increased participation of the economically weak segments of the population in the process of economic growth. Financial inclusion of hitherto excluded segments of the population is a critical part of this process of inclusion."

**C Rangarajan
Ex Governor, Reserve Bank of
India; Chairman, Committee on
Financial Inclusion Government
of India**

⁵ In Indian currency, Rs. 500 Crore for each fund

2. India's Socio-Economic Landscape

In the Index of Financial Inclusion (IFI) prepared by the Indian Council for Research on International Economic Relations (ICRIER), India has been placed 50th position in the list of 100 countries. The Index of Financial Inclusion, which measures the availability and usage of banking services, is based on indicators like the number of bank accounts per 1,000 adults, number of ATMs and bank branches per million people and the amount of bank credits and deposits.

While economic growth in India has benefited a growing middle class, it has also created great disparities between urban and rural areas, prosperous and lagging states, and between skilled and low-skilled workers. Poverty is fuelled by a lack of access to social benefits, productive assets and financial resources. High levels of illiteracy, inadequate healthcare and extremely limited access to social services only aggravate the situation.

Financial Inclusion has emerged as a tool for the *socio-economic development* of the society. The basket of financial services under Financial Inclusion will create an opportunity to capture the *underserved market* fulfilling *corporate social responsibility* thereby driving the *economic growth* of the country.

About three-quarters of India's population in poverty live in rural areas and are mainly dependent on agriculture. Indeed, agriculture employs a full 65 percent of India's population, but contributes only 22 percent of GDP. Typically, small and marginal farmers, unable to access financial loans to grow their businesses, have been forced to get loans from local agents at extremely high interest rates of above 40 percent per annum.

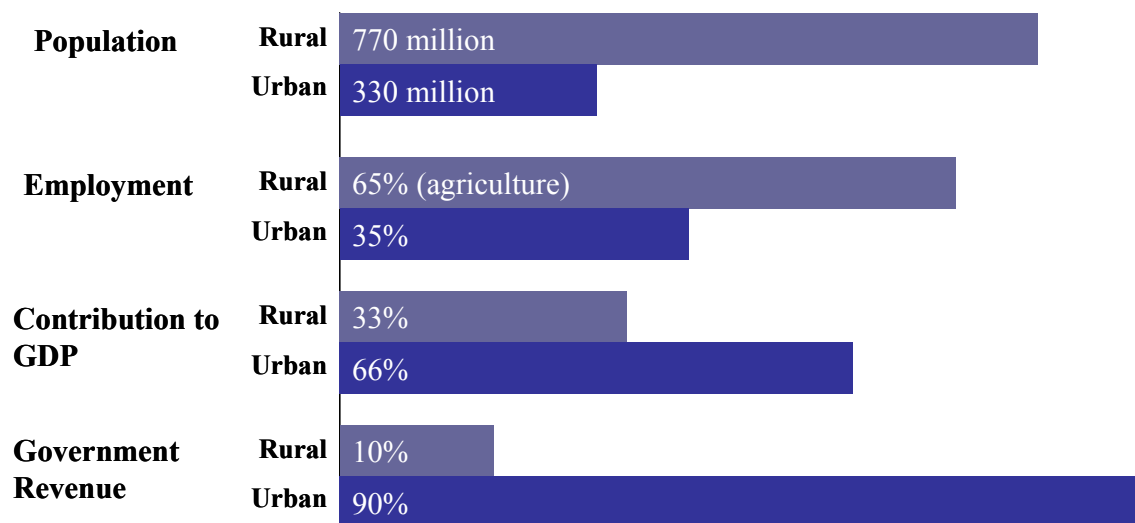
Agriculture employs large sections of the populace that is semi-skilled and semi-literate and at times unskilled and illiterate.

Rural, semi-urban and urban slums have a similar nature of human resources available.



2.1 Rural/Urban Divide

Chart 2.a: Rural Urban Divide



Source: World Bank Report, Frost & Sullivan Research

2.1.1 Urban India

World Bank data shows that a third of India's populace lives in towns and cities and generates about 90 percent of the government's revenues and two-thirds of GDP. Migration from rural to urban India stands at 30 percent.

In India, a quarter of the urban population lives in slums. In Mumbai, that figure rises to half of its 13.6 million people. It is not surprising that the highest concentrations of un-banked populations in urban areas are found in slums⁶. According to United Nation's statistics division, 55.5 percent of country's population in 2001 was living in slums. At present, migrant unskilled labour forms the biggest fraction of the urban slum population. Poor infrastructure, absence of financial network for urban poor, absence of credit rating and financial history and absence of financial knowledge deprives slum-dwellers of formal sources of credit.



⁶ Slum: A group of individuals living under the same roof that lack one or more of the following conditions: access to safe water; access to sanitation; secure tenure; durability of housing; and sufficient living area (Source: United Nations)

Case Study 2S1: Swadhaar

Microfinance institution in the urban slums of Mumbai

About half of Mumbai's residents live in slums without basic amenities such as clean water or indoor plumbing. The urban poor have always been neglected or underserved and the Slum areas in Mumbai being the most difficult to tackle in terms of poverty.

Swadhaar, a non-profit organization, assists the poor in Mumbai slums to break out of poverty through access to financial services. Founded in 2006, Swadhaar currently serves over 2,500 individuals, providing an average loan of US\$85 and achieving a high repayment record. It has a target of reaching 195,000 clients by 2011 in strategic partnership with Unitus and with microfinance expertise from ACCION.

Swadhaar has been successful in implementing several financial service projects for the urban poor. It has a strong management information system and is investing in building technology and professional expertise to make the institution a success.



Busy street in Dharavi, Mumbai Slums

2.1.2. Rural India

About 70 percent of the population (770 million people) lives in villages, a fraction lower as compared to the post independence (in 1947) figure of 75 percent. The vast majority of this group – a full 65 percent of the population – is employed in agriculture. For financial inclusion policy makers, this fact emphasizes the importance of financial facilities being made available to the unorganised primary sector, particularly agriculture and agro-based industries. Small investments such as seeds, fertilizers, pesticides create demand for micro-credit for small and medium sized farmer households.

Non-farming household's dependent on unskilled activities, including landless labour, construction workers and farm product processing workers, are also underserved by formal sources of finance due to low income. "The Report of the Committee on Financial Inclusion" (January 2008) stated that 72.7 percent of India's 89.3 million farmer households are excluded from formal sources of finance.

Case Study 2S2: Institute of Integrated Resource Management (IIRM)

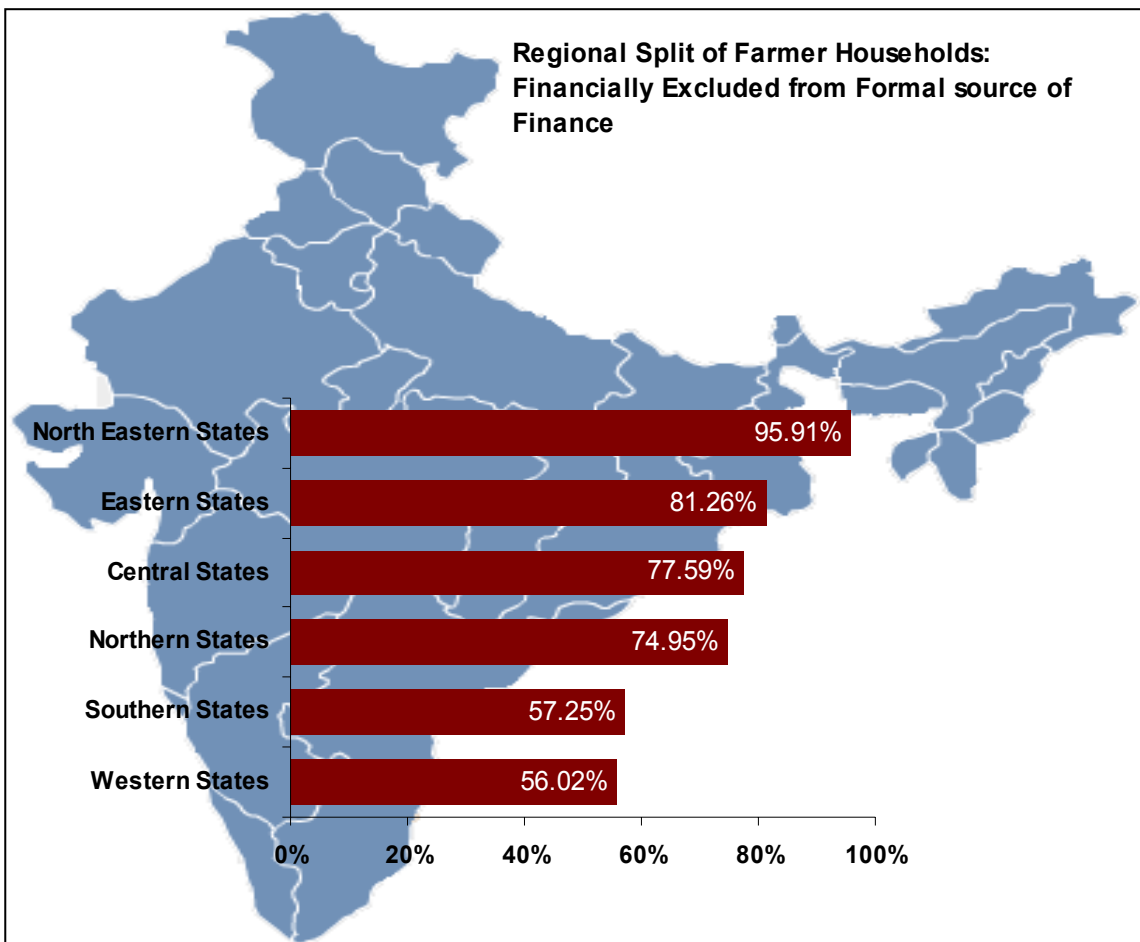
Rural socio-economic support for north-eastern states

IIRM was set up by Dhattateya Hoshagrar, a native of Karnataka, after experiencing the difficulties faced by the poor in north-eastern states in accessing essential financial services.

IIRM took a traditional development approach of relationship-building in each village to navigate through the region's communities. This approach was instrumental in successfully implementing the microfinance project and providing socio-economic support to rural and urban poor communities.

IIRM currently serves nearly 8,000 clients and has a target to reach out to 157,000 by 2010. With an average loan size of US\$80, IIRM serves farmers, tea plantation workers, and small-scale entrepreneurs. Borrowers use tailored loan programs to expand their businesses and redirect extra income towards education, healthcare, and housing facilities for their families. Currently a non-governmental organization (NGO), IIRM plans to evolve into a non-banking financial company (NBFC)

Chart 2.b: India's Regional Split: Financial Exclusion



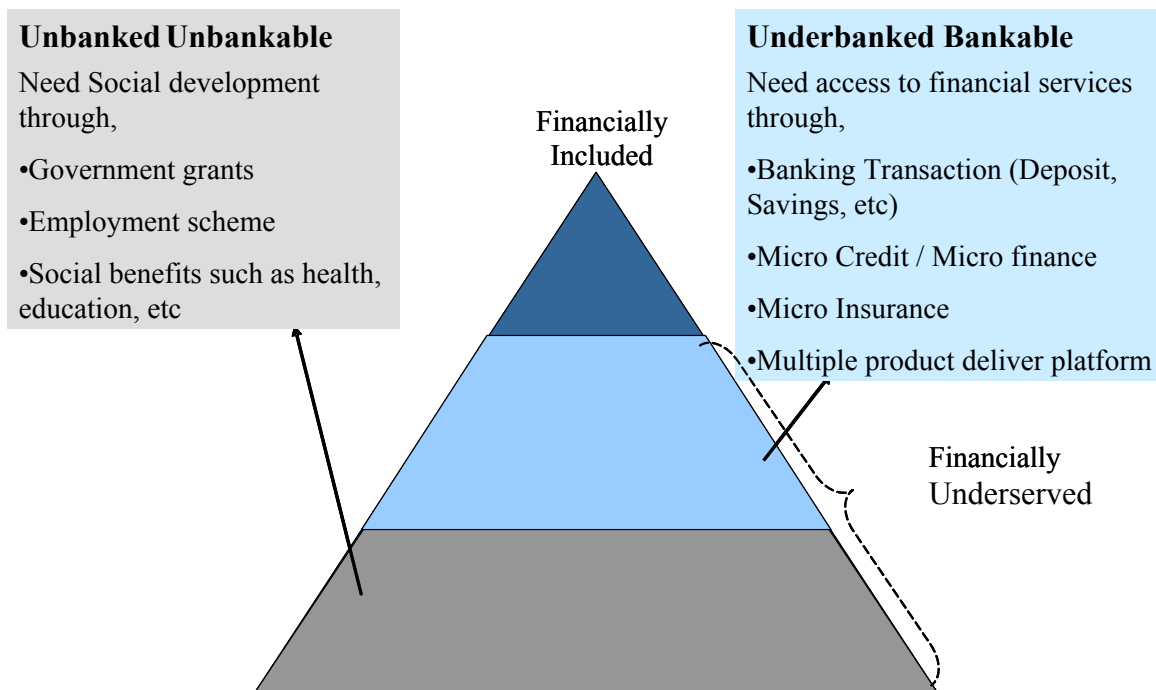
Western states: Maharashtra, Goa, Gujarat
Southern states: Karnataka, Andhra Pradesh, Tamil Nadu, Kerala
Central States: Madhya Pradesh, Uttar Pradesh, Uttarakhand, Chhattisgarh
Northern States: Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Rajasthan
Eastern States: Bihar, West Bengal, Orissa, Jharkhand
North Eastern states: Sikkim, Assam, Arunachal Pradesh, Manipur, Meghalaya, Tripura, Mizoram, Nagaland

Source: "The Report of the Committee on Financial Inclusion", January 2008

2.2 Un-banked unbankable population

Two-fifths (41.6 percent) of India’s population live on less than US\$1.25 a day. This section of underserved population needs social improvement and attention to basic needs such as health, education and housing amongst others through government grants. Social and economic development can be brought about by creating opportunities such as employment for the unskilled masses, developing work skills and providing a stable economical environment. For this group, the ‘unbanked unbankable’, economic development follows social development. Once they are socially and economically stable, financial literacy, formal sources of microfinance and appropriate delivery channels can aid inclusive economic growth.

Chart 2.c: Un-banked Bankable Population



2.3 Underbanked bankable population

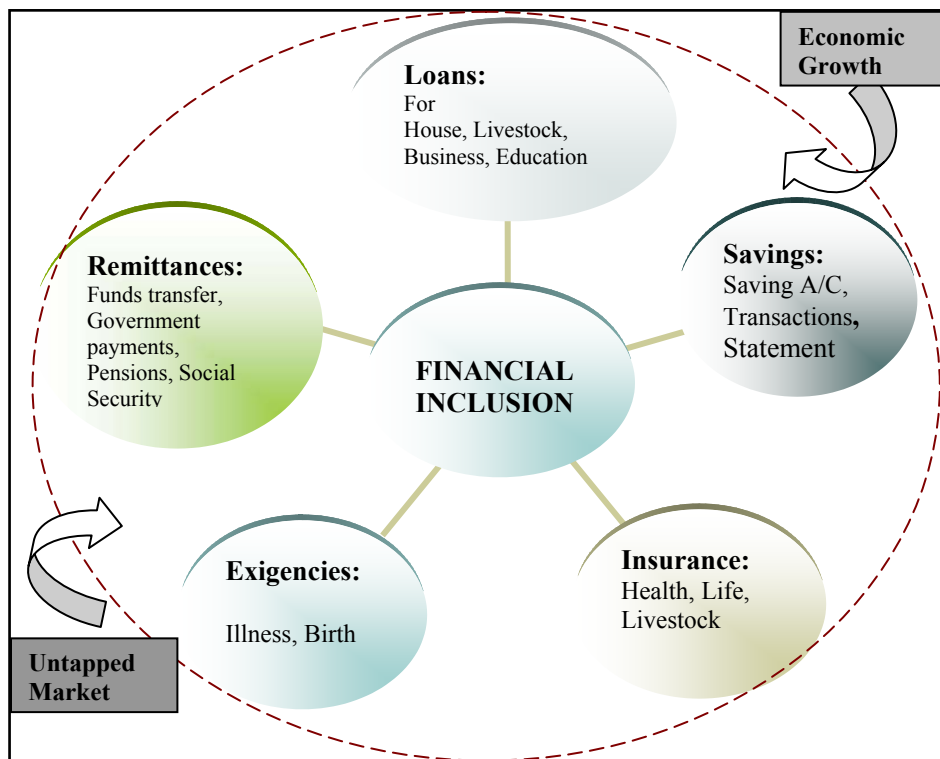
The section of Indian society just above the poverty line (living on between US\$1.25 and US\$2.00 a day) also requires social development and strong government support.

But this group, reckoned to number 370 million, is in a better position to benefit from economic stability and improve their socio-economic condition.

Access to products such as no-frills accounts, micro-insurance, government benefits, micro-credits, crop loans and microfinance for micro-enterprises encourage better management of funds and provide opportunities for financial stability and growth.

This section of society can be regarded as the 'underbanked bankable'.

Chart 2.d: Financial Inclusion Ecosystem



3. Historical Reasons for Financial Exclusion - India

Why	What	How
Why Financial Exclusion?	What are the possible solutions for Financial Inclusion?	How solutions can be applied?
Under developed IT-Telecom infrastructure in the interiors of country	<ul style="list-style-type: none"> IT-Telecom integrated platform Accessible network in interiors of country Microbanking products Technology platform that can be shared to reduce cost and improve efficiency 	<ul style="list-style-type: none"> IT – Telecom Integration Data connectivity Shared access⁷ Well connected delivery channel for real time transaction
Higher cost of funds and administrative expenses	<ul style="list-style-type: none"> Influx of technology products to scale Higher Volumes Better usage of data Reduction in cost of delivery of service 	<ul style="list-style-type: none"> Low cost technology products, (standardised and inter-operable) Shared access and self-service solution Low cost data management system Developing delivery channel such as BC model and self-service solution
Population and poverty	<ul style="list-style-type: none"> Social development program Involvement of other non-government bodies Literacy campaign 	<ul style="list-style-type: none"> Government initiatives in social development Government incentives and support for NGOs and SHGs Development of MFI, SHGs & NGOs Corporate involvement in literacy drive, e.g. Teach India campaign
Illiteracy (Includes financial illiteracy)	<ul style="list-style-type: none"> Financial literacy campaign Use of technology where ever possible Customization of product for excluded populace 	<ul style="list-style-type: none"> National alliance driven by MFIs, SHGs, NGOs and even technology vendors Interactive Voice Response System (IVRS), Self-service solution Literacy campaign Corporate drive for financial literacy
Regional barrier (language and culture)	<ul style="list-style-type: none"> Delivering solution in regional language Localization of delivery channel Co-operative or community center 	<ul style="list-style-type: none"> Technology Solution such as IVRS, Delivery channels: Self-service and Business correspondent model Higher involvement of regional SHG, MFI, NGO
Absence of Feasible Technology	<ul style="list-style-type: none"> Need high transaction volume Reduction in input cost for feasible products Interoperable solution Setting up industry standards(Inter-operability) 	<ul style="list-style-type: none"> Low cost products or innovative business models (Pay Per Use) Government incentives and favorable policies Shared Access Standardisation and collaboration

Source: Frost & Sullivan

⁷ Shared Access is defined as consolidation and sharing of services by different departments within an organization or by different organizations to lower cost, increase efficiency and increase service levels.

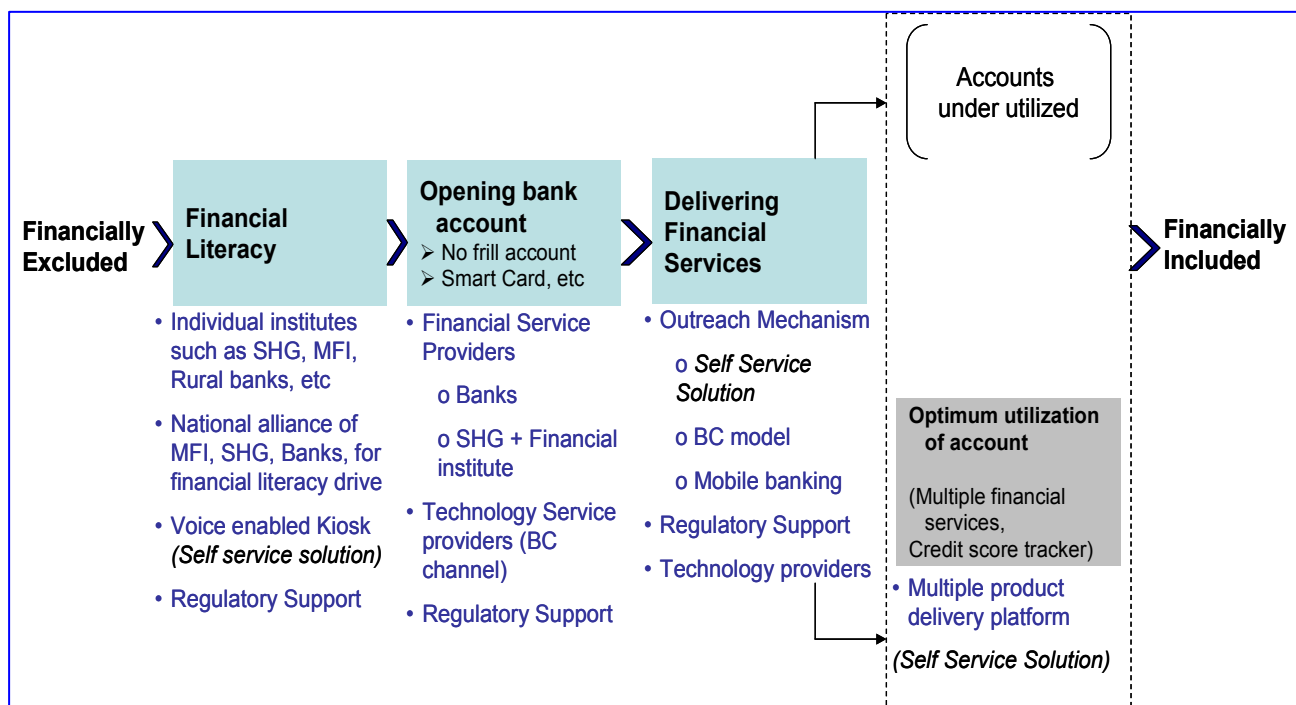
4. Financial Inclusion Lifecycle

The first step of Financial Inclusion is to educate customers and open an account. However, merely opening a bank account for a poor individual is not financial inclusion. This approach generally results in an inactive account or, at best, a repository for government benefits.

A three-step approach (see Chart 4a) is required to bring financially underserved individuals into a financially inclusive society. After improving financial literacy and opening an account of some form, it is usage of that account, linkage with other financial services and access to all the financial instruments that are required to complete the financial inclusion lifecycle.

Optimum utilisation of an account should be another target for banking service providers.

Chart 4.a: Financial Inclusion Lifecycle



Source: Frost & Sullivan

Step 1: Financial Literacy

To begin the financial inclusion process, one needs to understand financial products, usage, operation and management of accounts.

As defined by the Reserve Bank of India (RBI), financial education is "the process by which financial consumers/investors improve their understanding of financial products, concepts and risks and, through information, instruction and/or objective advice, develop the skills and confidence to become more aware of

financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being."

Efforts for financial literacy can be driven through microfinance institutions (MFIs), self-help groups (SHGs), cooperative and rural banks. Collaboration between these parties would accelerate results.

Step 2: Opening a Bank Account

Opening a bank account is the second step towards financial inclusion. It provides access to financial facilities for the financially underserved through formal sources of banking. Financial services providers, technology service providers and regulators are the functioning participants in the system.

As a major initiative to promote financial inclusion, the RBI has directed banks to introduce a basic 'no frills' banking account with either zero or very low minimum balances to better meet the needs of the poor. The RBI has also eased 'know your customer' (KYC) norms to minimize the procedural obstacles of opening a bank account.

Step 3: Delivering Financial services

The cost of delivery of service is considered to be the bottleneck in the value chain because, for the very consumer, anything but very low transaction costs are not feasible.

Currently, the favored delivery channel for microfinance and microcredit is via the business correspondent (BC) model, whereby an agent (who may or may not be a direct employee of the financial institution) personally travels within a wide geographical area to enroll customers, delivers loans, and collects repayments. The 'doorstep banking' model has obvious restrictions of scale as well as security. Agents may abscond with their clients' funds or may themselves be the target of thieves.

Conventional delivery model

Technology can improve conventional delivery channels such as the BC model by adding new levels of security, speeding up enrolment procedures or ensuring accuracy. Used in this way, technology offers conventional models the chance to increase scale, though to a limited degree. A conventional BC model will always be restricted by the amount of ground the agent can physically cover.

Technology-enabled delivery model

Alternatively, technology can actually become the direct delivery channel. Self-service technology, in particular, has already achieved this in the broader financial industry, through ATMs, the internet and user-driven mobile phone banking.

With policy support, self-service technology can provide a feasible platform for the delivery of financial services to the financially underserved population. As well as technology providers, the other participants in this third step are the financial services providers.

5. A Feasible Solution for Financial Inclusion

5.1 Financial Instruments

One of the key reasons for the failure of Regional Rural Banks post independence was the absence of customised products for the marginal poor. The banks failed to measure the affordability of services for the poor classes. The success of microfinance institutions (MFIs) and self-help groups (SHGs) in the last decade has largely been due to the customization of financial products for the financially underserved population.

There are about 3.37 million SHGs and about 750 registered MFIs in India. The ecosystem built by MFIs and SHGs can be termed as “microbanking” with services designed for small (low value) transactions.

5.1.1 No-frills savings account

In a ‘no-frills savings account’ an account holder is allowed to have a very low or zero balance. He is also given five to ten free ATM-based transactions each month. The Committee on Financial Inclusion has set Indian banks a compulsory target of opening 250 no-frills accounts per branch per year in rural and semi-urban India.

In just two years, the number of no-frills accounts opened has increased from less than half a million in 2006 to 15 million in 2008. Though the numbers are impressive, the RBI has said that most accounts have remained unused due to access constraints, financial illiteracy and other factors. A greater solution for access to the account is needed; otherwise, opening a no-frills account would merely be a target than a tool for Financial Inclusion. A ‘multiple product access platform’ supported by formal education and easy-to-use technology, well spread self-service kiosks and a collaborative model backed with MFIs and SHGs can address this issue.

Chart 5.a: Number of ‘No-frills’ bank accounts in India

Bank Category	March 31, 2006	March 31, 2007	March 31, 2008
Public sector banks	332,878	5,865,419	13,925,674
Private sector banks	156,388	856,495	1,879,073
Foreign banks	231	2,753	33,115
Total	489,497	6,724,667	15,837,862

Source: RBI, I

Major Challenge Adressed	Limitations	Solution Roadmap
Affordability of account: Zero/negligible balance required for operating account	Dormant Account: Negligible frequency of access in most cases	Microbanking, financial literacy campaigns
	Absence of Linkages: Absence of links with other financial services	Self-service solutions, Business Correspondent (BC) Models
	Absence of Credit scores: Absence of credit rating system for further financial services	

5.1.2 Microfinance/Microcredit

There are about 750 MFIs registered with the Reserve Bank of India (RBI), serving a client base of 10.5 million of which, ninety percent of this client base is served by the top 40 MFIs. This includes SKS Micro finance Pvt. Ltd, Bandhan, Microcredit foundation of India, Saadhan Microfin society and Grameen koota amongst others.

Microcredit creates an opportunity for a source of income for the lending institute and for the borrower a prospect for alleviation of his poor financial situation. Microcredit is the basis for the formation of various non-banking financial companies (NBFCs) including Bangladesh's oft-cited Grameen Bank and a tool for the permanent eradication of financial exclusion. Microfinance institutions operate in small volumes and have deeper penetration than banks due to local networks knowledge and presence, adoption of better delivery models and optimum technology usage. Due to the small enterprise size, flexibility in their operations and a profit-oriented approach, MFIs have shown better results than banks in reaching out to the financially underserved population and providing access to financial services.

Major Challenge Adressed	Limitations	Solution Roadmap
Affordability of Loan: Microfinance and microcredit	Absence of Credit history: Absence/Improper repayment record	Self-service Solutions, Joint Liability Groups (JLG) and Self Help Groups (SHG)
	Cost of Service: Micro size of transaction	Shared service, Self-service solutions, BC model

5.1.3 Kisan Credit Cards (KCC)

The Kisan Credit Card (KCC) scheme is a form of cash credit facility for farmers and was introduced in 1998-99 by the Government of India, the National Bank for Agriculture and Rural Development (NABARD) and the RBI.

A pioneering credit delivery mechanism, KCC is intended to provide adequate and timely support from the banking system to farmers for their cultivation needs, including the purchase of seeds, fertilizers, pesticides and livestock in a flexible and cost-effective manner.

According to the Report on Trends and Progress of Banking in India for the year 2006-07 released by the RBI, a total of 66.55 million Kisan Credit Cards had been issued by the end of 2007.

Major Challenge Addressed	Limitations	Solution Roadmap
Credit facility: Spontaneous credit	Absence of track record, cumbersome process	Self-service kiosks, data network and SHGs
	Unavailability for poor farmers: Available exclusively for privileged class of farmers	Innovative products, self-service solutions, shared service outlets, BC and flexible credit policy
	Ignorance: Facility virtually ignores landless and marginal farmers as well as non-cultivating households	

5.1.4 Remittance

Indian agriculture is characterized by seasonal rain (monsoon), seasonal crop patterns and labour-intensive, non-mechanised cultivation techniques. Wool work, agro-based and several small scale industries in rural and semi-urban India are mostly seasonal, dependent on crops or festive seasons (such as the production of firecrackers used in 'Diwali' festival in India).

As a result there is a large migrant population moving between rural and urban centers in search of (mostly unskilled) jobs. Earnings from this section of the population (put at 30 percent or 330 million people by the latest Indian census) need to be regularly remitted to their families back in their villages.

Today, India Post's 'money order' service is the biggest remittance platform, thanks to its vast network of 155,000 branches. As well as being the biggest, it is widely considered to be the costliest, charging five percent of the funds transferred. In 2005-06, India Post handled 96 million money orders worth \$1.8 billion.

Western Union Money Transfer (WUMT) channeled domestic transactions in India worth \$937 million in 2006-07. According to one estimate, the total market for domestic Indian remittance is about US\$6.5 to US\$10 billion.

Many Indians, across a broad range of income groups, travel overseas for work. The RBI estimates that India received \$26 billion in overseas remittance in 2006-07, more than any other country.

WUMT intends to capture the largest shares of both the foreign inward and domestic remittance markets. It has grown its agent base more than 13 times since 2001 and now has 40,000 agents across India. Since mid-2007, WUMT in India claims to have grown by 95 percent.

Major Challenge Addressed	Limitations	Solution Roadmap
Remittance of cash for migrant populace	Higher cost of remittance through the widely used 'money order service' (postal network) in India.	Self-service kiosks that provide access to multiple products through the same platform.
	Usage of informal and illegal delivery channels leading to exploitation.	Collaborative model of banks, MFIs and shared access can provide remittance platform at the required destination.
	Limited access to remittance platform.	

5.2 Technology Solutions

Technology providers are developing innovative solutions to help banks and MFIs address a large section of the financially underserved population. Their objectives are to reduce cost, provide ease-of-use and to drive 'small ticket', high-volume transactions. It is the scalability of these solutions being able to reach a huge financially underserved population across a vast geographical area at low cost that will make the delivery of financial inclusion viable for financial service providers and other stakeholders. However, conventional technologies that require human assistance will continue to be challenged in this regard.

Self-service solutions have the ability to deliver multiple financial services on a single platform and eliminate the need for human assistance in the transaction process. Accordingly, financial services providers should look to deploy self-service solutions that scale easily are convenient to use and offers a 'multiple product delivery channel' in a profitable way.

5.2.1 Conventional Solutions

The Business Correspondent (BC) model (sometimes known as 'banking correspondent') is a conventional solution that delivers financial services to the underserved population through a human banking agent supported by technology. As a solution for doorstep banking, this model has evolved over a period of time and has been implemented by various developing countries including Brazil, India and Bangladesh. Several MFIs, SHGs, public/private sector rural banks follow this model whose promise is to deliver financial services to the geographically divided population tapping local resources.

Technology has been employed in the BC model to aid the financial inclusion process, but the delivery of financial services is dependent on the reach and presence of bank agents and therefore limited when it comes to scalability.

Some of the technology solutions being adopted today by Business Correspondents are smart cards, point of service devices, biometric readers and mobile phones

a. Smart Card

Smart cards contain a microchip that stores customer data including identification and account information such as that found on an ATM or credit card. Moreover, data can be written to (rather than just read from) the smart card, allowing it to serve as a repository of all transactions undertaken by the customer including account updates.



The card ensures easy tracking of the financial performance of the consumer and reduces operational and administrative costs for the bank.

b. Point of Service device

Point of Service devices facilitate the transaction process of the BC by taking banking services closer to the customer's doorstep. Using the device to access the bank's database, the agent can assist the client perform transactions and provide credit facilities on the spot. There is no specification for the features of the Point of Service device so it can be customised to the needs of a financial institution. The point of service device is scalable and can have a printer, biometric scanner, smart card reader to facilitate faster, more convenient and secure transactions.



The variations of a point of service device could be a hand held devices or a mobile phones supported by peripherals.

Point of service devices improves the mobility of the BC model, helping to deliver financial services through door-step banking reaching a wider client base.

bi. Biometric Reader

Biometric scanners read and authenticate users through fingerprint recognition or retina scanning. They eliminate barriers caused by illiteracy and regional languages and also act as a second level of authentication thereby, enhancing transaction security. Biometrics thus opens the door to India's 433 million illiterate and semiliterate population and reduce errors caused by manual transactions.



c. Mobile Phones

In India, the penetration of the internet is only 5.2 percent⁸ as compared to the 31.5 percent of the population that have a mobile phone. The country's wireless telecommunications infrastructure covers remote rural areas and appears to be a robust platform to deliver financial services to the geographically divided, unbanked masses. Accordingly, mobile phones are used as a communication device and for data connectivity by the BCs.

5.2.2 Self-service Solutions

As stated by the RBI, the majority of no-frills accounts are used purely to receive government benefits, such as social security and pensions. Financial illiteracy and access constraints to financial products are some of the key reasons historically cited for financial exclusion.

⁸ Source: International Telecommunication Union (ITU)

Self-service technologies offer proven solutions for better access to financial services deployed either independently by separate institutions or as a network of self-service devices shared by various banks and MFIs.

Self-service technologies enable businesses to better serve their customers how, when and where they choose across points of service, mobile and online channels. They can play a key role in transformation of the unbanked populace in India by introducing solutions that are secure, cost-effective and highly scalable.

Coupled with Interactive Voice Response Services (IVRS) in local languages, self-service has the capability to both educate customers about financial products and to also guide them through the transaction process. Tracking customer behavior, usage and transaction records and building a credit profile are some of the additional advantages of the self-service solutions.

There are two types of self-service solutions: Full Self-service and Assisted Self-service.

a. Full Self-service

With full self-service, there is no third-party intervention or assistance; the transaction process is driven entirely by the user using self-service technology. Financial transactions performed at an ATM over the internet or on a mobile device, (see below) are examples of full self-service.

Full self-service solutions reduce errors, enable faster transaction times, improve productivity, allow increased volumes of transaction and deliver multiple financial services from the same device.

Bank branches and agents simply cannot scale to cover India's huge population spread across geographically divided states. Full self-service, as part of a portfolio of solutions, has the ability to scale quickly and at low cost.

1. Automated Teller Machine (ATM)

Automated Teller Machines (ATMs) are banking terminals that provide bank account holders easy access to cash and financial services in public locations. Today, there are over 40,000 ATMs across India.

As a full self-service device, the entire transaction is performed by a customer without any intervention by bank staff. ATM cards are used to identify the customer and authorisation is granted through a code (Personal Identification Number, or PIN) known only to the customer or via a biometric reader. ATMs can deliver a number of financial services including cash deposit, check deposit, cash withdrawal, balance enquiry, remittance, bill payment and bank statements.

While there are numerous solutions being worked on today for financial inclusion the ecosystem must plan for the challenges presented by the increase in volumes of transaction, change in demographics, ease of use and interoperable services. Interoperability refers to usage of service from different locations with the same account. For example, ATM cards can be

used at any ATM location to avail financial services. Interoperability provides flexibility to transact and secures cash. These facilities are currently not available for the financially underserved population but there is a need for these services for this set.

There are different variations of ATMs:

Cash Dispensers and Cash Deposit Machines (CDM)

These would typically do routine transactions such as cash dispensation or deposits and statement printing

Multi-function ATM

These ATMs typically handle other transactions such as check deposit, bill payments and travel ticket bookings, etc, beyond the routine cash and dash like the CDM

2. Mobile Phone Applications

The explosion in mobile telephony has revolutionized the way individuals communicate with each other and with businesses. By the end of 2009, more than 60 percent of the global population will have a mobile phone subscription, representing global growth of eight percent. Across Europe and Russia, there is already more than one mobile phone for every man, woman and child. [Source: Economist Intelligence Unit].

Of all the telephone connections in India, 90 percent are mobile⁹. The demand for Mobile phones is expected to rise by 24 percent in 2009, far outstripping global growth rates.

In many markets, financial institutions are offering banking services via mobile phones, each with varying levels of functionality, ease-of-use, cost and mass acceptance.

In western economies, phone banking is offered to established customers as a means of convenience, eliminating the need for the customer to visit the bank and perform transactions 'on the go'.

Because of the penetration in poor and developing economies, mobile phones are regarded as a tool to deliver financial services to the masses.

The biggest disadvantage with mobile banking is the element of cash. When cash is needed, mobile banking requires the assistance of other technologies or channels.



⁹ Source: Telecom Regulatory Authority of India (TRAI)

Case Study 5S1: M-PESA, Kenya

Providing financial access through mobile phones

Launched in 2007, M-PESA is a money transfer and bank account service using mobile phones offered by Safaricom in Kenya.

It allows subscribers to deposit and withdraw money via Safaricom's airtime-sales agents, and send funds to each other by text message (SMS). The service is now used by around a quarter of Safaricom's 10.5m customers. Casual workers can be paid quickly by phone; taxi drivers can accept payment without having to carry cash around; money can be sent to friends and family in emergencies. More than twice as many people have a mobile phone than have a bank account in Kenya which indicates that mobile phones could act as an important tool for financial inclusion.

One popular practice is to deposit money before making a long journey and then withdraw it at the other end, which is safer than carrying lots of cash.

Transfer amount ranges from Kshs. 100 to a maximum of Kshs. 35,000. Kenya's mobile phone penetration stands at 34 percent of the population and is expected to increase to 60 percent in the next four years as more rural dwellers sign up. Thus, there is much scope to spread financial payment services across the country through the M-PESA service.

Safaricom's parent company, Vodafone, has launched M-PESA in Tanzania and Afghanistan, and plans to introduce it in India.

As well as bringing financial services to the unbanked, M-PESA has been a phenomenal success for the company. The mobile payments service added almost US\$8 million to the company's bottom-line in its first three months of operations and Safaricom is now the most profitable business in eastern and central Africa.

b. Assisted Self-Service

Assisted self-service provides solutions to perform some or all transactions with human assistance or through other technology interfaces. Unlike full self-service, assisted self-service is dependent on additional elements for complete delivery of financial services.

Those elements may include availability of other services, location and the level of customer service (assistance) provided.

1. Point of Service Terminal

Point of Service Terminal is a shared access platform that offers multiple financial services on a single location. It may or may not be technology intensive. The terminal can be in a small retail store that provides multiple bill payment options and delivers financial services in assistance with the local owner of the outlet. A customer can visit the terminal and pay his electricity bill, mobile bill, water bill, insurance premium, refill talk-time for wireless connection and any other payment. Though this is not a banking terminal, it delivers multiple services under one roof and customer may not end up visiting different locations to manage routine transactions.

Point of Service Terminal provides access to financial services through a convenient and local set-up and multiple services under single touch point.

5.2.3 Technology Enablers

While self-service solutions are readily available and have been deployed widely around the world, financial inclusion presents some unique challenges. Low levels of literacy, the high number of languages spoken and poor infrastructure, for example, require enabling technologies to bring self-service closer to the un-banked population.

1. Biometric Recognition

Biometric recognition eliminates the need for a personal identification number (PIN). It authenticates the user by scanning a thumb impression or retina of the account holder.

Biometrics is an important enabler when reaching out to the illiterate and semi-literate population that avoids banking due to fear of technology and security concerns. Implementation of a biometric solution can bring them onto the economic development ladder.

2. Interactive Voice Response Services (IVRS)

Interactive Voice Response Services (IVRS) are software-based solutions that relate the transaction process in a synthesized voice format and guide

a customer through the entire transaction flow. In India, this has obvious and immediate benefits as 36 percent of the population (433 million people) cannot read or write.

3. Multilingual Software

There are about 1600 languages spoken in India and, according to the country's constitution there are 22 'official' languages of communication. This creates a complex environment for the consistent delivery of any service.

As an extension of IVRS, multilingual software provides a navigation solution in multiple languages, overcoming regional barriers, communication issues and illiteracy.

4. Graphical User Interface

Graphical User Interfaces (GUIs) as part of the navigation process helps to guide a user through a transaction by providing an intuitive set of graphical images or pictorial references instead of words. For India's poor and illiterate, GUIs increase confidence in performing a transaction and thereby encouraging adoption of new technology. GUIs can also help to eliminate transactional errors through step-by-step guidance.

5. Wireless Connectivity

Every month, nine million new Indians subscribe to a mobile service. The growing wireless networks provide an excellent platform to reach out to the financially underserved population in the diverse and remote regions of the country. Mobile banking applications can deliver banking facilities to the financially underserved population at low costs.

For a geographically divided country like India with the growing rate of mobile connectivity, banking through mobile phone presents a strong future for technology enabled financial inclusion.

6. Internet Connectivity

A person's usage of Internet banking basically depends on access to Internet through computer or mobile phone either at home or in the office.

In Europe and North America, internet penetration is high and access to the Internet is chiefly via a home or office computer connected to a fixed telephone line. In most of Asia, where home computer penetration is much lower 15.3 percent, access to the internet, is increasing via the wireless mobile phone networks.

Nevertheless, India's internet penetration is barely more than five percent and it is difficult today to see the internet by itself being a key self-service enabler for eliminating exclusion and bridging the divide.

5.2.4 NCR EasyPoint™ 70 Tijori

To deliver doorstep banking, banks take risks transferring funds through non-employees who act as their agents, who may abscond with customers' money or may themselves be the target of thieves.

Construction of bank branches in every village or urban slum is simply not feasible.

A technology solution must therefore ensure safety of funds for both the bank and its customers and avoid the need for infrastructure.

NCR in partnership with FINO¹⁰ piloted NCR's Easy Point 70 Tijori that functions similarly to an ATM but in table top form factor. NCR's Easy Point 70 Tijori also leverages FINO's smart card and core banking platform to provide an end to end solution to Banks and MFIs to support the unbanked population.



The NCR's EasyPoint 70 Tijori that was initially designed as micro deposit machine is a scalable platform and can enable multiple financial services, such as savings, deposits, remittance and payment of micro-insurance premiums and utility bills. Transaction details are recorded in the device and on the user's smart card. Transaction data can be transferred to the bank's system via an online connection. The EasyPoint 70 Tijori can operate both online and offline, overcoming connectivity issues normally encountered in rural India.

The recording of transactional data enables low-wage earners to create a credit profile to access microcredit, further enabling them to seek aid from banks to assist their business.

a. Technology features

1) Biometric reader

A biometric reader scans the fingerprint of the customer as an authentication code for each transaction, allowing illiterate and semi-literate populations to transact with ease and ensure a second level of authentication.

¹⁰ Financial Information Network and Operations (FINO) provide end to end technology and operational solutions to financial institutes to serve the underserved and unbanked sector.

2) Audio-Video lead through

Use of the micro-deposit machine is made easy with instructions relayed in both video and audio (voice) formats.

3) Multi-lingual software

Voice instructions can be delivered in 14 regional languages

4) Printer

Customers receive a printed receipt for every transaction performed providing valid proof of deposits and withdrawals. This provides increased confidence for those using the device.

b. Distribution Model for NCR EasyPoint 70 Tijori

The 38% compound annual growth in India's mobile phone subscriber base has been largely contributed by its distribution system, whereby SIM cards for phones are easily available across the country through tens of thousands of merchant locations, such as retail stores, grocery shops and even local vegetable vendors. Easy access to mobile connectivity and the low price of recharge coupons have been identified as significant contributors in the Indian 'mobile inclusion' growth story.

The NCR EasyPoint 70 Tijori carries similar financial inclusion potential by taking formal banking services to the financially underserved population through the same distribution channel.

The NCR EasyPoint 70 Tijori's small physical size means it can be easily deployed in those same retail locations. Depending on the type of transaction, it operates as a full self-service device or, with help provided by the store owner or his/her employees, as an assisted self-service device.

As it continues to do with mobile telephony, the sheer size of these retail 'networks' can take microfinance to most if not all of India's financially underserved population.

c. Advantages of the NCR EasyPoint 70 Tijori

- Self-service technology reduces transactional, operational and infrastructure costs
- Small physical size allows distribution through vast retail and post office network, reaching majority of India's unbanked population
- Technology platform provides single solution to manage not only savings, but repayments on loans, insurance, remittances and derivative products
- Aids automation and streamlines the daily process of record/data entry and retrieval

- Helps to drastically reduce transactional, operational and card acceptance infrastructure costs.
- Captures client and transaction data for management and analysis

d. Results from the NCR EasyPoint 70 Tojori Proof of Concept

In a pilot project to assess the proposed business model and consumer acceptance, the EasyPoint 70 Tijori was installed in a few small retail locations in Mumbai.

Responses were collected from new and repeat users as follows:

Instructions: Ninety percent of new users and 93.3 percent of repeat users found the textual, voice and video instructions easy to use.

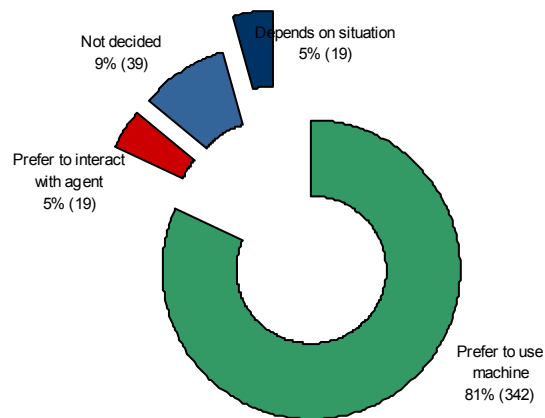
Time savings: Nearly everyone who used the device (96.9 percent) said it saved them time.

Safety and Security: After using the micro deposit machine, 75 percent felt that their money was as safe as depositing directly in a bank, whereas only six percent felt their money to be less safe than a branch transaction.

Preference:

Taking into account these factors of ease-of-use, safety of funds and time taken, 81 percent said they would prefer to use the machine over an agent model.

Chart 5.b: Preference for NCR Easy Point 70 Tijori



5.3 Multi Channel Delivery Models

5.3.1 Business Correspondents - Agent Model

The Business Correspondent (BC) model has been recommended by the RBI to provide an alternative structure to branch-based banking to achieve financial inclusion. The Business Correspondent is an agent authorized to undertake transactions for pre-defined levels of cash on behalf of a specific financial institution.

Several microfinance institutions, self-help groups, public and private sector rural banks follow this model to reach out to the geographically diverse population. Agents have the advantage over bank branches as they can deliver 'doorstep' banking across the geographical landscape, overcoming regional barriers of language and culture, and inadequate infrastructure in rural and slums.

The BC is increasingly aided by technology enablers such as a point of service handheld devices, mobile phones and a biometric scanner.

Although, being a key delivery channel, the agent model has restrictions of scale as well as security. While, technology can improve speed of delivery, security and accuracy, agents will always be restricted by the sheer size of their territory.

Case Study 5S2: Caixa Economica Federal, Brazil

Delivering financial services through the BC model, assisted by technology

The Government of Brazil has urged state banks to better serve poor people and rural areas and has relaxed account opening conditions and the rules governing the use of BCs for better delivery of financial services.

In Brazil, banks need to place 45 percent of sight deposits in reserve at the central bank at 0 percent rate of interest. To encourage micro finance, central bank permits banks to take 2 percent of the allocated 45 percent deposit and deliver micro loans at between 24 and 48 percent interest rate.

Caixa, established in the 19th century to collect national savings from the poor, is today Brazil's second largest bank. It reaches poor communities and villages using business correspondents who may deliver doorstep banking or use shared access sites such as retail stores, lottery outlets and drug stores. Caixa has 14,000 agents and handles all equipment, training and contracting through internal resources. Other banks, such as Banco Popular and Lemon Bank use third parties for these tasks.

The Caixa agent is assisted with technology such as a Point of Service device, access to the mobile communication network, a barcode scanner to scan the bill, and a type of teller machine with a screen (Computer) in the store.

The shared access retail outlet provides assistance to an agent to handle the transactions for client. Clients use bank smartcards that may have debit facilities. Under this model, Caixa delivers savings (withdrawal and deposit), credit, remittance, government benefits, pensions receipts, bill payment and topping up mobile phone air time.

Caixa has 32 million accounts and half of its customer base earns less than \$80 per month, which is itself double the minimum wage in Brazil.

5.3.2 Independent and Shared Access Networks

a. Independent Networks

Banks can independently deploy technology solutions to deliver financial services to the financially underserved population through their network of branches. Micro Finance Institutions (MFIs), Self-Help Groups (SHG) and Regional Rural Banks (RRB) have greater penetration than traditional banks amongst the financially underserved masses due to their geographic spread.

There are about 3.37 million SHGs and about 750 registered MFIs in India. An SHG-Bank linkage program has been one of the most successful initiatives post independence for delivering financial services to the financially underserved population.

All the above participants can deliver services using technology either independently or collaborate and create a common technology platform and shared network for their delivery.

b. Shared Access Networks

A shared service model spreads the cost of set-up, installation and operation across the different units within an organization or different organizations that use the service. Sharing a service increases efficiency and overall service levels. As such, a shared service (such as a physical or computing network, a delivery channel or a technology) offers a feasible solution for achieving wider and deeper financial inclusion.

As well as its 155,000 post offices, India has a network of 12 million retail outlets that includes vast numbers of small, family-run neighborhood 'kirana' stores.

This retailing base, together with the wireless telecoms network offers a huge 'shared network' that can be utilized to reach out to the unbanked population. These retailers from a financial inclusion perspective are strategically located and are spread extensively across urban slum areas and villages. They serve not only the lower strata of society but the rich and middle-class populations, as well.

The retail potential has not yet been explored and offers a ready solution for cost-effective and efficient delivery of financial services, overcoming what is currently a prohibitive bottleneck in the entire value chain.

The following three case studies demonstrate the success of shared services:

Case Study 5S3: Panchayat Sanchar Sewa Kendras, India

Collaborative model to provide postal and telecommunications facilities to unserved villages

There are 600,000 villages in India, of which 27,000 are unserved by road, rail or electricity.

A collaborative scheme between India Post, village administrations (known as Gram Panchayat) and BSNL (formerly the Department of Telecommunications) was established to provide basic postal and telecommunications services to villages without post offices.

For the scheme, the Gram Panchayat earmarks a suitable place, preferably a building owned by it, for locating the Panchayat Sanchar Sewa Kendra (PSSK). The PSSK becomes the nodal point for retailing some of the basic services like sale of stamps and postal stationery, booking of registered articles, delivery of letters and, where feasible, a facility for small savings.

The village administration selects a youth who will be designated as the Sanchar Kendra Agent (SKA) of the Panchayat for operating the scheme within the jurisdiction of the Panchayat. He/she is paid a fixed amount by the Department of Posts for rendering his/her services in addition to commissions from the retail sale of India Post items.

Under this collaborative scheme, there are now 6,000 PSSK outlets in as many villages where there is no post office, offering postal services, and telecom connectivity and retail sales. These PSSK outlets are now linked with India Post's 155,000 post offices across the country, and represent a network of fixed infrastructure that can be shared for delivering various services including banking and microfinance.

Case Study 5S4: Mzansi, South Africa

Shared services and Collaboration for Financial Inclusion

The Mzansi account is a National Bank Account product launched in 2004 in line with the commitments of South Africa's Financial Sector Charter, requiring banks to make banking more accessible to the nation and, specifically, to increase banking reach to poor communities.

The Mzansi account is facilitated through the four largest commercial banks – Absa, First National Bank, Nedbank, Standard Bank, and the government-owned Postbank. Each bank has established its own pricing competitively and some have placed a maximum balance limit on accounts.

To keep costs as low as possible and to ensure that the account is easy to use, transactions are limited to deposits, withdrawals and debit card payments - the account includes a debit card that can be used at retail outlets. No management fees are charged on Mzansi accounts, so customers are able to save without having their capital eroded by bank charges, with the only fees being for transactions made - and with ATM transactions costing the same regardless of which member bank's ATM is used.

In a money transfer service associated with the Mzansi account, a customer can transfer money even if not an account holder with a participating bank. Access to the account is provided through a combination of existing service point outlets and physical branch outlets:

- Merchant Point-of-Sale devices
- Any Mzansi institution ATM
- SASWITCH (BANKSERV) ATMs
- South Africa Post Office outlets

About 13-million South Africans were "unbanked" at the time of Mzansi's launch but within one year, Mzansi had two million account holders and now has three million. Eight-hundred thousand of Mzansi's account holders are from the poorest 57% of the population.

Mzansi has been a driving force behind financial inclusion – sixty percent of South African adults now have a bank account, up from 50% in 2006.

Case Study 5S5: Banco Wal-Mart, Mexico

Using a Retail network for Financial Inclusion

Wal-Mart, the world's largest retailer, has expanded its business by providing financial products and services in Mexico.

In November 2007, Banco Wal-Mart opened in existing stores thereby avoiding the infrastructure cost of setting-up bank branches. As the largest private employer in Mexico and with nearly 2.5 million people in Mexico visiting its stores every day, the new bank had a sizeable (and chiefly low-wage-earning) and loyal population from which to recruit customers.

Only a quarter (24 percent) of Mexico's population has access to banking; the remaining majority falls in the low income bracket and is unable to afford banking services.

Opening a Banco Wal-Mart account requires a minimum balance of less than \$5 while the competing banks require a minimum balance of \$100. However, Banco's interest rates on savings are only half that offered by other banks. Wal-Mart's annual rate of consumer loans is around 75 percent while the rates from competing banks are about 100 percent.

The Mexico remittance market is about \$23 billion (approximately), which the bank is now trying to exploit through its partnership with a money transfer company, Moneygram International.

Its other product offerings include debit and credit cards and loans of up to 50,000 pesos (about US\$3,500) for in-store purchases, thus promoting its retail sales.

6. Conclusions

India is a country of huge socioeconomic contrast evident by its growing middle class of more than 300 million people and the 600 million people that still live in extreme to moderate poverty. India's continued success and prosperity will largely be a measure of its inclusive development. However, inclusive growth is challenged by such factors as availability of financial services, accessibility across the vast rural and urban landscape, awareness through education and literacy programs (including financial literacy), and affordable cost points.

The Business Correspondent (BC) model, whereby agents representing banks, Micro-finance Institutions (MFIs) or self-help group deliver 'doorstep banking' is the most persuasive model today supporting the government's drive towards Financial Inclusion. The BC model offers a lower cost channel and local presence without the infrastructure costs of branches. However, it is limited by poor security, time-consuming manual processes and a lack of scale.

Supplementing the BC model with technology can improve security, speed up enrolments and transactions, and extend the size of the physical territory that agents can cover. Even with enabling technology, the agent model in isolation, will always be limited to the size of the physical territory that can be covered.

In addition to assisting or supplementing an existing, labour-intensive delivery channel, technology can become a direct delivery channel for financial and information services. This is particularly true of self-service technology (e.g. ATMs, mobile phones) where transactions are driven by the consumer without third party interventions. Once the unbanked are brought into the banking model, a whole range of financial services can be delivered through self-service technology, with minimal need for person to person interaction.

Self-service technologies are the foremost sustainable and scalable solutions because they offer multiple products and services from the same platform/device, at lower costs, ease-of-use, higher levels of availability and accessibility by the potential of leveraging existing physical infrastructures (i.e. merchant partners and kirana stores) as a distribution channel.

Self-service can provide the scale necessary to achieve the Indian government's target of full Financial Inclusion by 2015.

Self-service has been readily adopted in many industries:

- In the financial industry, Automated Teller Machines (ATM) were invented over 40 years ago and are now deployed widely across geographies.
- In the travel industry, self-service has been a driving force in the emergence and success of low-cost airlines, stripping out cost from the full-service model and providing easy access to ticket sales and no-queue convenience at check-in.
- In retail, more than US\$500 billion of goods were paid for using self-service technology, a figure forecast to rise to more than US\$1.2 trillion by 2012.

To increase the adoption and usage enabling technologies have been integrated into self-service systems, such as biometric readers, multi-lingual software, interactive voice response services, and graphical user interfaces, helping to reach out to the millions of illiterate and semi-literate people in geographically and linguistically diverse regions.

Once the technology is deployed, the Economic Improvement Quotient (EIQ) as proposed herein measures the incremental change in the selected populace brought about by access to financial services. It captures the impact in value terms and establishes a business case for future reference that can be used for overall improvement in the delivery of financial services.

Together, policy makers, financial institutions and technology providers can establish a collaborative business model to profitably address the social, moral and economic imperative to bring financial and information services to the masses.

Appendix

Measurement System

A critical component of any business is the ability to measure its success and impact. Therefore we are proposing the Economic Improvement Quotient (EIQ) for future considerations.

While existing indicators such as Gross Domestic Product (GDP), Gross National Income (GNI), Per Capita Income (PCI) and the Human Development Index (HDI) all play an important role in measuring various elements of the economy and human development, we propose an equation to measure the change in the socio-economic value of an individual or a common population-set due to the direct impact of banking systems

1. Economic Improvement Quotient (EIQ)

The Economic Improvement Quotient (EIQ) is based on the fundamental assumption that rendering of financial services to the underserved population in a favorable external environment (with policy and technology support) results in the improvement of an individual or group's economic status.

The EIQ has been designed to assist government officials, policy makers, banking and financial services organizations, technology providers, and other stakeholders associated with financial inclusion to measure the positive impact created by the penetration of banking and financial services.

The equation is based on three variable factors:

- The range and type of financial services offered
- The current policy environment and how supportive it is towards financial inclusion in terms of specific policies and initiatives
- Enabling technologies available to scale access to financial services to a wider population

Definition:

Economic Improvement Quotient (EIQ) is the value that determines the incremental change in the selected population-set due to its exposure to banking and financial services in the presence of the existing policy environment and technology enablers.

$$\left[\sum_{i=1}^{i=n} w1(\text{Financial Services Rendered}_n) \times [w2(\text{Policy Support}) + w3(\text{Technology enabler})] = \text{EIQ} \right]$$

Where n = Number of Financial services rendered; $w1$, $w2$, $w3$ = Weighted Average, Scale from 0 to 10

1.1 Financial Services Rendered

Each of the following financial services is readily on offer from banks and financial institutions and is of varying value to the underserved population. The value ascribed to each financial service is based on two important determinants:

- The time taken for the service to have an impact on economic status
- The rate at which the service makes cash available (velocity)

The total value for all financial services cannot exceed 10.

Financial Service	Impact Time	Velocity of Cash	Value
Savings Account	Short Term	Very High	2.5
Short Term Loan	Short Term	High	2
Remittance	Short to Medium Term	High	1.75
Credit Card	Short to Medium Term	Medium	1.5
Long Term Loan	Short to Medium Term	Medium	1
Fixed Deposit	Medium to Long Term	Low	0.75
Insurance	Long Term	Low	0.5

1.2 Policy Support

Each of the following policy templates has been initiated by governments across the world. Research has shown that combination of more than one policy has had a greater impact.

We have arrived at a value for each policy based on two important determinants:

- Whether the nature of the policy has a direct or an indirect impact on financial inclusion
- Our estimate of the time taken for the selected policy to have full impact

Addition of all the policies cannot exceed 0.6. An overall weight will be calculated for application in the EIQ equation based on the summation of the individual values as given below.

Policy Template	Nature	Impact Time	Value
Task Force/Governing Council/Central Body formed to drive Financial Inclusion	Direct	Short to Medium	0.12
Special Fund created to assist Financial Inclusion	Direct	Short to Medium	0.12
Policy/Fund/SPV launched to assist Technology initiatives (research/investment) for wide distribution of banking services	Direct	Short to Medium	0.12
Central Government Policy with steps towards penetration of the banking services	Direct	Medium to Long	0.08
Regulation urging participants in the Banking and Financial Services Industry(BFSI) vertical to lay special emphasis on Inclusive Banking	Direct	Medium to Long	0.08
Policy framework for creation of customized services addressing microfinance institutions, self-help groups, etc.	Indirect	Short to Medium	0.05
Central Government Policy framework for the alleviation of poverty	Indirect	Long	0.03

1.3 Technology Solutions

One of the most critical links in this equation is the use of a sustainable and scalable technology to deliver financial service. The biggest challenge has been selection of the right technology to deliver a specific service. Several pilots in the past have not met expectations due to either selection of an inappropriate technology or the inherent inability of the selected technology to scale and be sustainable. Our approach is to simplify the technology selection based on its:

- Ability to deliver a particular service
- Ability to scale
- Ease of use (usability)
- Ability to eliminate regional/social barriers
- Ability to deliver multiple services

At a broad level, two delivery methods are available today, namely, Self-service and Business Correspondents. Technology can leverage one or both of these delivery methods for delivery of financial services.

Parameter	Weight
Ability to deliver a financial service	0.12
Ability to scale	0.1
Ease of use "Usability"	0.08
Ability to deliver multiple services	0.06
Eliminates social and regional barriers ¹¹	0.04

¹¹ Barriers to financial inclusion differ from one region to another. Technology deployed must be capable of delivering solutions for regional barriers. For e.g. Language spoken in southern India is different than any state in north India. A multi lingual software is an appropriate solution

2 Calculating EIQ

2.1 Measuring the impact of exposure to Financial Services for a labourer

Year 2005: A farm labourer lives on wages of INR 45/day (US\$1 per day) and has no access to financial services.

If we measure his economic quotient through the EIQ calculator his EIQ will be zero. He does not have access to financial services, which results in FSR value of zero. Absence of government policy and a technology solution with zero FSR will result in zero EIQ of this individual.

FSR = 0

Policy Environment = 0

Technology solutions = 0

EIQ = 0

Year 2008: The same individual now has access to a savings account and Kisan Credit Card.

With government policy initiatives and banks' focus on providing financial services to the financially underserved population, the individual now has access to a savings account and the Kisan credit card scheme. Access to these two financial services gives him an opportunity to manage his financials and get credit for cultivation of crops.

But lack of technology support means access to financial services to a limited set of the population and longer, manual transaction cycles.

If we measure the above scenario through the EIQ calculator, technology will score zero due to its absence. But government support and its impact on financial services rendered to this individual will result in a better EIQ score of that individual.

FSR = (2.5 + 1.5) = 4

Policy Environment = 0.4

Technology solutions = 0

EIQ = 1.6

2.2 Measuring the impact of Micro Deposit Machine in an Urban Slum

A bank currently caters to about 5,000 individuals of a low income group, who are primarily migrants based in an urban slum in Mumbai. The primary financial service being offered is a savings account through the bank's branch. No scalable technology has been deployed.

Let us see how the EIQ can help us gauge the pre- and post-deployment of an NCR EasyPoint 70 Tijori micro-deposit machine

Pre-NCR EasyPoint 70 Tijori deployment:

FSR: Savings Account, Value: 2.5

Policy Support: 0.4

Technology Enabler: 0.1

EIQ: 1.25

Post-NCR EasyPoint 70 Tijori Deployment:

FSR: Savings Account + Remittance + Insurance + Credit Card =
(2.5+1.75+0.5+1.5) = 6.25

Policy Support: 0.4

Technology Enabler: 0.4

EIQ= 5

Technologies like the NCR EasyPoint 70 Tijori helps in delivering faster, better and more secure transactions by removing people and time-related dependencies. The NCR EasyPoint 70 Tijori's ability to offer scale has resulted in faster penetration and better utilization of resources thus improving return on investment and cash management. The above scenario is an example of how technology can improve economic status.

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