

Electronic Banking: The Next Revolution in Financial Access?

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Introduction

E-banking has the potential to revolutionise access to financial services for the poor. As David Porteous, then CEO of the FinMark Trust in South Africa, noted in a recent *MicroSave*³ virtual conference on e-banking, “Does e-banking not offer the prospect of substantial, if not massive, progress in banking the poor, provided certain threshold conditions are met?”

There is growing consensus that e-banking offers a unique opportunity to address mainstream banks’ two major barriers to serving the low-income market: the need for a branch infrastructure and managing high volumes of low value transactions. The potential of e-banking to significantly extend the reach of financial institutions into rural areas, without investing in “bricks and mortar” branches, is widely acknowledged. Nonetheless as William Randle notes, there are often significant disincentives for banks to develop e-banking solutions: “Existing branch delivery systems, which absorb more than half the operating capital and define the organizational structures of most banks, represent an important incentive to maintain the status quo⁴.”

TRANSACTION COST PER DISTRIBUTION CHANNEL

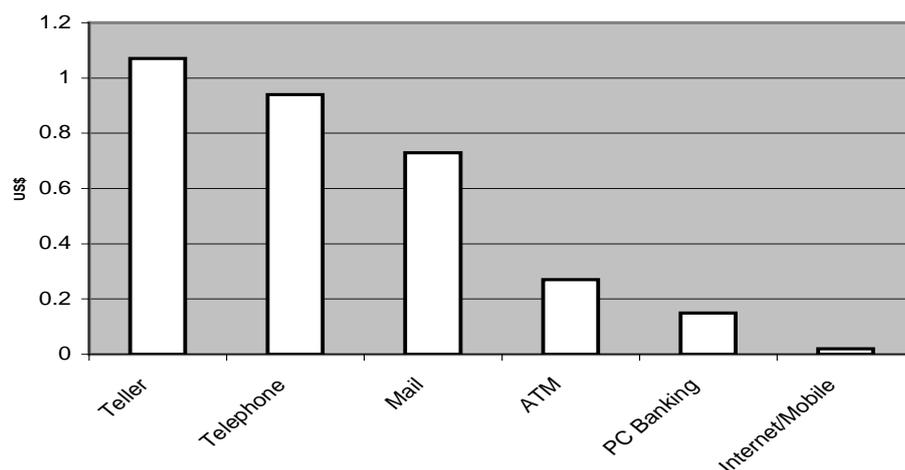


Figure 1:
Illustrative Costs per
Distribution Channel
Source: Quoted in Ketley
and Duminy 2003

Source: BAI

However, this reticence of banks to invest in alternative channels, and particularly m-banking, for the poor is changing for several reasons:

1. The reduced costs of serving customers through e-banking channels (see Figure 1. above);
2. Increasing number of high-end customers are seeking e-banking solutions and thus the banks are adding to their e-banking infrastructure – either through direct investment or through a growing range of collaborative switches that allow interoperability across networks;

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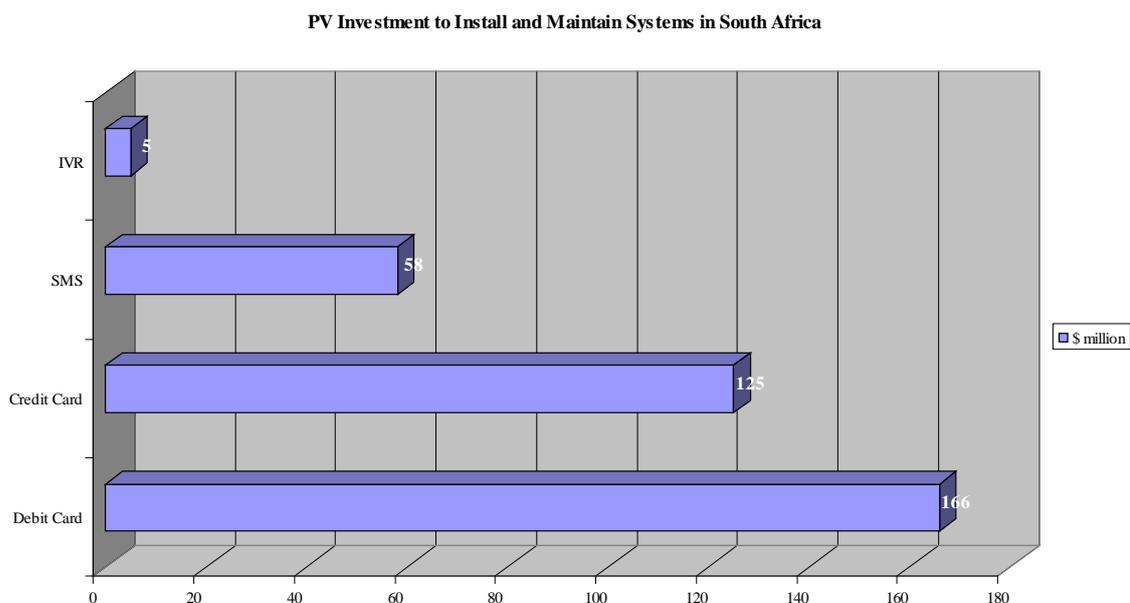
⁴ Quoted in Stegman (1999)

3. The profitability of these complex systems is driven above all by the numbers of transactions and customers using the services they offer;
4. The steady (if not yet dramatic) falling costs of ATMs and point of sale (POS) devices and mobile phone hand-sets;
5. The size and potential of the market at the “bottom of the pyramid” is now better understood and recognised than previously; and
6. There is growing pressure from the telecommunication companies for collaborative arrangements with banks – and thus driving banks to enter into these agreements before their competitors do.

In India, both the Government and the regulator are quite concerned about the skewed outreach of the banking sector including the nationalised banks. Of the 428 million deposit accounts in the country, only 30% are in rural areas. With a rural population of 741.6 million, the rural penetration of banks is as low as 18%⁵. Even when access to banking is available, “The transaction costs of savings in formal institutions in India were as high as 10% for the rural poor. This was because of the small average size of the transaction and the distance of the branches from the villages.”⁶

These effects and the skewed outreach is further amplified by the service area system that has denied private sector commercial banks access to the rural areas, despite the primarily rural focus of the priority sector lending (PSL) requirements. This creates great incentives for those banks subject to the PSL requirements to extend their reach into the villages through alternative channels. Furthermore, subject to changes in the regulatory environment (discussed below), the increasing penetration of mobile phones and the extensive PCO network across the country, offer huge potential to massively increase access for poor households across the country.

Furthermore, as shown by Figure 2., this could be done on a very cost effective basis, thus offering the hope that mobile-based banking could become the basis for financial inclusion on a scale hitherto only dreamed of by the most optimistic of visionaries.



1. Assumes market of 150,00 merchants with 25% penetration of POS
2. SMS/IVR require one time cost of \$5 million for back-end IT systems

Figure 2. Present Value to Install and Maintain E-banking Systems in South Africa

Source: Datta, Arnab, Mehmet Pasa and Tom Schnitker (2001)

⁵ Singhal, Amit and Bikram Duggal “Extending Banking to the Poor in India” *ICICI Bank*, India 2002.

⁶ Markson, Todd, Hokenson Michael and Prahalad C. K. “University of Michigan Business School – Case Study” 2003

However, for all the growing talk of a revolution in financial access for the poor through e-banking, there is limited evidence of it actually happening. Indeed markets across the globe are littered with examples of unsuccessful e-banking initiatives that failed to achieve their potential. Despite the backing of Hewlett Packard and a host of well-known microfinance network organisations, the much heralded RTS system in Uganda has been abandoned by three of its four partners and seems to have stalled in the last one. Even in pioneering Indian microfinance institutions, such as BASIX and SKS, initial attempts to introduce smart cards failed. M-banking has, however, taken off in South Korea and also Japan. In the Philippines over 4 million customers use the financial services offered by the telephone companies Globe and Smart, but m-banking remains nascent in Africa and scarcely used elsewhere.

Careful examination of the reasons for the failures across the globe almost invariably traces the cause to one or several of three key factors:

1. Inadequate customer value proposition for the end users; and/or
2. A poorly developed business case for the companies collaborating; and/or
3. A debilitating environment.

Successful implementation of an e-banking solution is not dependent on technology – which has been available for a long time now – but rather on understanding these three key factors.

Customer Value Proposition

As too many e-banking solutions providers have discovered, if there is no value proposition for the customer, the solution will become a problem! Cash is an extremely effective exchange mechanism that has been used for many years, is low cost and highly acceptable to the poor – replacing it is no easy matter. Furthermore, most e-banking solutions providers over-estimate the value poor people attach to their security and time. Even in highly insecure environments such as Nairobi in Kenya, where *MicroSave* is working on two e-banking solutions with leading banks, MFIs and mobile phone companies, personal security is heavily discounted by users. Poor customers are typically more interested in saving money, than the time taken to make transactions and finally about increasing their personal security. It is therefore essential to conduct extensive market research to understand the needs, aspirations and motivations of the target market before designing an e-banking solution.

Typically poorer people are looking for the following from a basic current account offered using e-banking systems:

1. A safe place to keep money.
2. Accessibility/liquidity – The ability to turn electronic money into hard cash and vice versa at convenient locations (agents/ATMs).
3. Ability to transfer money – to and from the financial institution, to make payments and to remit value to friends and relatives.

A well designed e-banking solution will offer a combination of deposit taking, withdrawals, bill/premium payments, money transfers, pension and other social payments, air time top up, internet access etc. Getting the combination right and thus identifying the real needs/demands of the target market is key to success.

Box 1. Wizzit's Market Research

As part of its preparatory phase in South Africa, Wizzit used focus groups to establish the spending patterns and financial transactions of its low-income target group and the mobile phone-based solution was then built on the basis of this research. Wizzit quickly learnt that the clients wanted inter-operability with the mainstream ATM/POS-device-based payments system, which is already extensive throughout the country and had to change its original design accordingly.

David Cracknell points out in his seminal paper “Electronic Banking for the Poor - Panacea, Potential and Pitfalls⁷”, the customer value proposition depends on four basic criteria:

⁷ This paper can be downloaded from www.MicroSave.net under the Studies section.

1. *Features*: What needs does the e-banking solution meet? What features encourage the user to maintain an electronic account in preference to cash? For example the ability to transmit money rapidly from the place of business or to reduce cash-holding in areas of high insecurity.
2. *Accessibility*: Limited distribution of transaction points strongly reduces the value proposition to the customer. Walking/travelling many kilometres to be able to access the service is inconvenient and costly. Saturation of an area with the service is preferable to a wider thinner, distribution.
3. *Affordability*: Start up and transactional costs need to be as low as possible for both the end user and the merchants these users frequent. Cash is inherently largely “frictionless” there is no charge that gets levied each time value is transferred – cash-related costs do, however, arise through the transport/time etc. need to make a transaction.
4. *Ease of use – convenience*: A solution must be simple to use fast and user friendly. Wealthier individuals are prepared to accept a fee for convenience, however, lower value users will accept greater inconvenience to save money or to facilitate low value transactions.

If these criteria are not met positively, the market will see no value in the proposition and the customers will not adopt the solution.

Box 2. Banking Correspondents Provide Access in Remote Brazil

In Brazil, access is the key. Between them Banco Economica, Banco Postal, Banco Popular and Lemon Bank run nearly 30,000 “banking correspondent” outlets that now serve every municipality in Brazil - even though many of these are only reachable by boat or plane. The banking correspondents use small retail outlets and post offices with a combination of: a POS, a PIN pad, a bar code scanner to read bills, a PC and a sort of teller machine with a screen. They link to their parent bank through basic dial-up or satellite connections and manage millions of transactions every month. (Source: CGAP Note on Brazil’s Banking Correspondents, Gautam Ivatury, 2005).

One of the greatest challenges for e-banking solutions is identifying reliable “cash-in/cash-out” points with high prevalence and accessibility in the target market. This is particularly difficult in rural areas. In many countries, regulatory authorities are permitting small shops to fulfill this role, however this is not yet acceptable in India. Perhaps India Post offers a viable alternative.

Box 3: India Post – Does it Offer Solutions for E-banking Outreach in India?

Adapted from R Vaidyanathan, The Hindu Business Line, July 13, 2006

India Post operates the largest postal network in the world, comprising 155,516 post-offices, of which 89 per cent are in the rural areas (Annual Report 2005-06). Even the smallest branches in remote areas provide financial services such as banking and money-orders. The geographical reach of India Post is unparalleled in the country; it has more than double the number of branches of all the banks in the country put together. On an average, in 2004, a post-office in India served an area of 21.13 sq. km and a population of 6,585.

As on March 31, 2005 it had 540,334 employees, of whom 246,678 were departmental employees (45.65 per cent) and 293,656 (54.35 per cent) were Gramin Dak Sevaks, who provide the village postal services as franchisees of India Post (Annual Report 2005-2006).

The strengths of India Post are its long tradition of handling financial services (from 1882) and its credibility and trust. It reaches the bottom of the pyramid with a minimum savings bank account of Rs.20, with more than 137,000 branches providing these services in the rural areas. Of course, Know-Your-Customer is one of the major strengths of India Post. Its vast army of postmen can be used by various service providers for verification of the customer's residential address. India Post has already announced its decision to verify the addresses of customers of mobile phone companies and there exists a good business opportunity for it in this area.

Business Case

The development and costing/pricing of the business case is central to a successful e-banking solution. There are of course, individual and mutual business cases for the partners involved in a solution. The business case will revolve around the level of functionality that the institution wishes to develop. Technology specialists and bankers often over-complicate the solution, adding every possible function. In some cases solutions are offered without a clearly defined need for them. It is important to get into the

market with one application responding to a specific need and then expand usage. Experience in South Africa and the Philippines shows that once customers have passed making around three transactions a month, they lose their fear of the technology and the number of transactions increases substantially. Thereafter, the e-banking solution provider can build volume through careful development of different functionalities and business segments. On mobile-based systems such as Teba Bank's A-Card and MTN Banking, for example, airtime top-up is a popular function that drives much of the revenue within the system.

Developing an appropriate revenue strategy depends on the functionalities offered, the segments targeted and the anticipated volume of transactions. The dilemma here is that high volumes are required to leverage the potential of e-banking systems and to allow solutions providers to offer the services at prices acceptable to the market. And it takes time to achieve these volumes. Indeed, one of the major lessons from the South African experience has been that take-up of e-banking solutions by the poor has been slower than anticipated ... patience and deep pockets are likely to be essential! In this context, it is important to control costs during the development phase to generate positive returns on investment – this once again dictates that solution providers identify key core functionalities and deliver on these first before expanding the range of options available to the customer.

For banks with existing infrastructure, migrating customers onto e-banking infrastructure can free up their existing physical infrastructure. In Kenya, *MicroSave's* partner Equity Bank now serves a million customers and is implementing an aggressive campaign to move them onto its ATM, POS and m-banking infrastructure in order to empty its crowded banking halls ... with a view to welcoming the next million customers in 2007.

Multiple business partnerships are essential in building a multi-functional e-banking solution and in supporting the distribution network. Each partner involved in the solution must benefit, whether through reducing costs, increasing efficiency, increasing turnover, or through direct income. Those involved in providing solutions should also be aware of the costs too – for example the cost of compliance with know your customer/anti-money-laundering (KYC/AML) legislation may be prohibitive. A particular risk for MFIs using group-based lending methods is, of course, that an m-banking solution will undermine the attendance of group meetings – clients will simply send their repayments to the MFI over the mobile from their businesses. M-banking solutions have huge potential to make individual lending programmes hugely more efficient for both MFIs and their clients but are the nemesis of groups.

Thus the business cases/value propositions for all partners are likely to be complex – by way of example, Figure 3. outlines the likely business case, value proposition and costs for partners in m-banking.

Figure 3. Business Case/Value Propositions for an M-banking Based Programme

Stakeholder	Benefits	Costs
Bank	<ol style="list-style-type: none"> 1. Massification of points of presence across the country. 2. Growth in customer numbers, some of whom might migrate to mainstream banking. 3. Growth in savings deposits. 4. Opportunities to lend (to MFIs/agents and possibly eventually directly). 5. Meeting Priority Sector Lending requirements. 6. Meeting government requests to serve the poor. 7. Monetary float and interest earned on security money held from agents. 	<ol style="list-style-type: none"> 1. Volume of low value accounts. 2. KYC requirements. 3. Call centre. 4. Integration of MIS/IT data-exchange systems with partner MFIs. 5. Risk management for agents.
Mobile Phone producer	<ol style="list-style-type: none"> 1. Increased sales of handsets. 2. Sales of solar-panel mobile chargers. 3. Meeting government requests to serve the poor. 	<ol style="list-style-type: none"> 1. Development of handsets with additional functionalities / language requirement 2. Advertising new features / application to attract customers

Stakeholder	Benefits	Costs
Network Providers/ Managers	<ol style="list-style-type: none"> 1. Monthly phone account rental. 2. Revenue from SMS traffic. 3. Revenue from new clients with mobiles in their hands. 4. Revenue from increased usage driven by over the phone top-up. 5. New service and thus increased “stickiness” of over all service package. 6. Meeting government requests to serve the poor. 	<ol style="list-style-type: none"> 1. Integration of costs. 2. Product marketing/ communications. 3. Increased coverage of remote locations to serve m-banking clients
Agents/ shop-keepers	<ol style="list-style-type: none"> 1. Revenue from transaction commission. 2. Increased footfall on their premises (and thus potential sales). 3. Cash-back options. 4. Direct purchases on the solution. 5. (Over time) ability to offer direct loans. 	<ol style="list-style-type: none"> 1. Security deposit/bond to be deposited with bank. 2. Likely to need to manage larger cash floats to meet the liquidity demands of m-banking users. 3. Commission paid on purchases made through the solution.
MFIs	<ol style="list-style-type: none"> 1. Reduced administrative costs (COs should be able to focus on following up on defaulters and on loan appraisal) and thus profitability. 2. Integrated and thus more accurate IT/portfolio management systems. 3. Automated reminders through SMS/call centres for those in arrears. 4. Incentive for group members to maintain excellent rating to graduate to individual m-banking based loans. 5. New loan/savings product lines and thus greater client loyalty. 6. Gradual integration in the financial value chain as agents / correspondents to banks. 	<ol style="list-style-type: none"> 1. Passed on KYC requirements/ routines. 2. Undermining of groups through rapid graduation of clients to m-banking based individual products. 3. Need to learn/implement individual lending methods – this may involve different field officers. 4. Need to amend IT/MIS system for integration into the system. 5. Need for extensive product education/marketing.
MFIs’ Customers	<ol style="list-style-type: none"> 1. Accessibility – quick access to many outlets for deposit or withdrawal services as well as loan repayment. 2. Convenience - ability to repay loans from work premises – thus saving travel cost and time and reducing security risks. 3. Convenience - over the phone pre-paid top-up facilities. 4. Security – less cash around the home or needing carrying to where it is to be used. 5. (Over time) P-2-P and P-2-B transactions with others on the system – thus saving travel cost and time and reducing security risks. First targets should be utilities payments/insurance companies; thereafter need to examine options provided by migrant workers. 	<ol style="list-style-type: none"> 1. Cost of acquisition of the solution: mobile phone and software. 2. SMS and transaction commission.
RBI / Government	<ol style="list-style-type: none"> 1. Possibility of reaching out the underserved and the unbanked through this channel. 2. Greater integration of the cash economy with the banking sector. 3. Integrating MFIs into the formal banking system, reducing risks and utilizing their outreach to expand savings services to rural areas. 	<ol style="list-style-type: none"> 1. A paradigm shift in the banking systems, including reworking of the service area approach, priority sector approach and targets etc. 2. Reorienting banking policies and regulatory framework to enable e-banking.

Environment

The environment for electronic banking will be determined by the nature of the financial and retail market - for example existing e-banking infrastructure in terms of ATMs and POS devices already in place. In South Africa the widespread presence of these devices meant that there is demand for access to these service points and a hybrid card/mobile-based system is most likely to succeed. These factors will drive product features, accessibility and transaction volumes.

Another key environmental determinant is the financial literacy of the target market. The level of financial literacy influences communication of the product, the nature of the distribution channel and the nature of transactions made. Creative campaigns that combine key financial education and product marketing will be essential for e-banking for the poor to succeed. Nonetheless, it is important not to under-estimate the creativity and flexibility of the poor when it comes to using technology. In most of Africa and Asia, airtime has already become a surrogate currency with people sending the PIN code numbers of prepaid cards across to their relatives/friends or business associates. Indeed this system has already been formalised with value transmission services in some countries. In Kenya, Safaricom launched the *Sambaza* product that allows subscribers to send small amounts of airtime value across the network to others. Within a few weeks of its launch, many thousands of transactions were being made using this service.

However, the biggest challenge and in many cases, obstacle, to harnessing the full potential of e-banking to massively increase financial access is the regulatory and policy environment. This includes banking regulations and appropriate communications, security, and information policies. Across the globe, central banks and other regulatory authorities are struggling as they assess how to respond to the opportunities offered by e-banking, and particularly m-banking. Specifically, they typically remain concerned about agency arrangements, KYC/AML requirements and the creation of a parallel payments system.

A recent review by Bankable Frontier Associates for DFID noted "Most African providers of m-payments and m-banking services noted that the major barriers to their growth related to (i) uncertainties over customer adoption, which is common at an early phase of market development; and, in South Africa at least, (ii) specific regulatory issues such as remote customer due diligence [KYC/AML] requirements and access to the payments system." Similar issues are reported by *MicroSave's* partners in Kenya. As the Box 3. below (from Cracknell, 2004) demonstrates, the Indian environment, has been particularly difficult for those seeking to offer e-banking services.

Box 4. Regulatory and Policy Constraints in India

Adapted from a paper by ICICI Bank "Extending Banking to the Poor in India", (Singhal and Dugal, 2002)

Eligibility of clients: under Reserve Bank of India guidelines, smart / debit cards can only be issued to clients who have maintained their account satisfactorily for six months. This is likely to restrict the ability of the bank to provide specialised services using a card.

Loading of value: The section on cash withdrawals does not permit the withdrawal of cash or deposit through a POS terminal, which means that all facilities for loading value on smart cards must be housed within bank premises. If the banking system is to extend services to the poor it must be able to do so cost effectively.

Presence at ATMs: The current guidelines do not allow the presence of any persons other than security guards at ATMs, effectively preventing the bank from providing direct assistance to low income, frequently illiterate customers.

Written record of transactions: A written receipt is required either at the instance of the transaction or in a regular report. This may prove difficult with low value high volume transactions.

Customs duties: While automatic teller machines have a customer duty of 60% their cheaper avatars (Cash Dispensers), which have the potential to reach out to the mass market, have a customs duty of 150%.

Service Area Agreements: The current service area approach restricts competition between banks in rural areas, thus making it more difficult for a bank to strategically roll out networks of ATM machines.

There may indeed be additional barriers for as Porteous (2006) notes, “The field of m-payments and m-banking is not only new and fast evolving but also sits at the overlap of several regulatory domains – those of banking, telcom and payment system supervisors, and anti-money laundering agencies. The overlap substantially raises the risk of coordination failure, where the legislation or regulatory approaches are inconsistent or contradictory. In such environments, it is likely that m-banking may simply be an added channel for already banked customers. A comprehensive vision for market development between policy makers, regulators and industry players can help to define obstacles and calibrate proportionate responses to risk at appropriate times”.

Porteous goes on to propose a framework of principles which are necessary, (noting that they may not be sufficient) to enable m-banking. “First tier principles are those necessary for m-banking to happen at scale at all:

1. There should be sufficient certainty around electronic contracting.
2. Customers should be adequately protected against fraud and abuse in the m-banking environment.
3. Inter-operability should be encouraged, through ensuring that providers can access payment platforms and that consumers are able to switch financial providers”.

Second tier principles: for transformational models [that will extend banking services to the un-banked thus massifying financial inclusion, through m-banking solutions] to emerge and succeed, “the following additional principles are also necessary.

4. KYC/AML procedures for account opening should be risk based, and not unduly prejudice remote account openings by low-value customers.
5. Customers should be able at least to make deposits and withdraw cash through agents and remote points outside of bank branches.
6. Adequate provision must be made for the issuance of e-money by appropriately capitalised and supervised entities which are not necessarily banks” (Porteous, 2006).

Conclusion

India’s 200 million un-banked represent a tremendous opportunity for financial institutions, and telecommunications companies interested in serving the bottom of the pyramid. Serving this market requires the management of high volumes of low value transactions – which is precisely what robust e-banking systems are designed to do. Indeed profitable e-banking systems are dependent on managing large volumes of transactions, since it is these transactions that drive the majority of their revenue. With the significant and growing penetration of mobile phones, linked to the potential the public call office system, and the low cost of mobile telephony in India, one can only hope that m-banking will be allowed to play a significant role in the push for financial inclusion.

With India’s leadership in technology one can only wonder why countries like Brazil with its correspondent banking system and the Philippines/South Africa with their m-banking solutions are so far ahead. Policy makers in India are clearly committed to optimising financial inclusion whilst maintaining the integrity of the financial system, securing depositors’ savings and suppressing money laundering – this is a balancing act that will continue to challenge regulators worldwide.

However, even with the most enabling of regulatory environments e-banking solution providers are only going to be successful in the short term if they concentrate on areas where cash is inconvenient and the e-banking solution can do things that cash cannot. To do this effectively, they need to spend more time on understanding the market and building the value proposition and business case ... the is technology ready and available!

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