White Paper

Incredible India! M-Payments and Prepaid Poised to Define Financial Institutions' Delivery of Banking & Payment Services to Rural India

Emerging Market Perspective Series: Report 2 of 2

By Amit Sethi

Executive Summary

Today it's fairly common to see a passenger board an international flight in New York by presenting a smart phone loaded with an e-boarding pass or a train in Italy by displaying a quick response code-enabled e-ticket on an iPad. Mobile transactions are catching on in developed markets as consumers increasingly move away from computers and on to a new generation of mobile devices. The next wave of electronic transactions–mobile payments, or m-payments–is on the verge of surging. This is especially true in emerging markets like India where frugal innovations could fill enormous market voids that leave large populations at the bottom of the pyramid (BOP) underserved. In particular, the symbiotic relationship between prepaid and mobile phones defines a natural entry point for inclusion of the rural unbanked into the formal financial system and would support adoption on a mass scale. Innovation at the intersection of these two already widely adopted services by India's BOP consumers is a market opportunity ripe for development by financial institutions.

In particular, the symbiotic relationship between prepaid and mobile phones defines a natural entry point for inclusion of the rural unbanked into the formal financial system and would support adoption on a mass scale.

Earlier in 2011, Yankee Group forecasted "unprecedented growth in mobile transactions worldwide, with the total value of global mobile transactions increasing from $162 billion to $984 billion in 2014."[1] This represents a compound annual growth rate (CAGR) of more than 90 percent. Industry analysts predict India's share of global transactions will exceed $1 billion by 2014. India's electronic payment transactions at the point of sale (POS) are experiencing 40 percent growth annually.[2]

A recent report from *The Economist* on the state of international banking noted that "banks in emerging markets are leapfrogging their rich-world rivals in efficiency, technology and innovation" and as a result are growing annually at 20 to 25 percent—often more.[3] At the same time, financial institutions (FIs) — domestic or multi-national — may largely be missing the boat on tapping the significant potential of the BOP market. According to C.K. Prahalad, "Multi-National Corporations (MNCs) often assume that the default rate among the poor is likely to be higher than that of their rich customers. The opposite is often true. The poor pay on time, and default rates are very low."[4] This misperception is just one reason why FIs have not made inroads with BOP customers. Other challenges include the BOP market's lack of credit history, the country's nascent credit bureau infrastructure and national ID system, and limited penetration of the formal banking and payment systems across rural India. Several compelling factors, however, should prompt FIs to rethink their conventional wisdom on such potential customers, particularly in India where opportunity abounds and partnership across consumer-facing industries could prove fruitful.

The significant mobile subscriber base and percentage of unbanked create a compelling proposition for FIs and mobile operators to form partnerships in support of mobile payments and services.

Future Cast: Mobile Banking & Payments

Urban User Base
- Urban user base expected to reach 65 million by 2012 as compared to 23.5 million in 2009
- As of 2011, the current mobile phone subscriber level is more than 800 million — and increasing[15]

Rural User Base
- Rural user base expected to reach 60 million by 2012, driven by RBI's constant promotion of financial inclusion

Active User Base
- Active user base is expected to increase to 2 percent in 2012 from 0.2 percent in 2009

3G Services
- Roll-out of 3G services should boost the usage of mobile for payments as faster, better and broader set of voice and data services that can be provisioned over 3G networks

Regulatory
- The RBI has also defined guidelines for India's mobile banking industry and is focusing on improving banking convenience and efficiency, reducing intermediation costs and ensuring security

Source: India Electronic Payment Market Opportunity Study: Executive Summary. TSYS/Evalueserve, May 2011.

First, unencumbered by the need for consumers to transition from old to new technologies, emerging markets like India are poised to outpace other more established markets in the adoption of m-payment transactions, especially among the rural unbanked. India's vast and established mobile networks have the ability to supplement the traditional branch-based approach to banking. This would allow mobile to provide the technology platform and the distribution channel for extending banking services to rural populations. In other words, mobile operators already have in place extensive rails covering a significant portion of the country on which the payments industry can ride in order to deliver m-payment services.

The financial sector in India is well positioned to develop two distinct and complementary types of electronic payment transactions, which may materialize simultaneously.[2] The first is the more traditional card-based payment model, which is discussed in report one of the "Incredible India: Emerging Market Perspective" series, titled, *Four Imperatives to Accelerate Electronic Payment Adoption*. The second type of transaction includes mobile-based payments, (referred to throughout this report as m-payments) which have the potential to transform the banking landscape for India's underserved rural populations.

This report will explore how the untapped market opportunity of m-payments can act as both a significant market opportunity for FIs and a great equalizer for BOP consumers in rural India. It will then discuss the key market indicators that highlight the sea change underway in electronic payment transactions, specifically m-payments, in India: 1) the promise of frugal innovation as an alternative to expensive infrastructure improvements needed to expand limited access to retail banking outlets; and 2) high and rapidly rising mobile tele-density, combined with increasing familiarity with and receptivity to prepaid payment instruments. This includes 'no frills' accounts, which are changing the traditional "cash is king" attitude among rural consumers. Next, the report identifies some challenges that exist for m-payment adoption and calls out the key lessons learned from the successful penetration of rural markets by fast moving consumer goods (FMCG) partners, known in the U.S. and Europe as consumer packaged goods companies. Finally, this report explores elements fundamental for m-payment adoption, including prepaid payment cards, partnerships between FIs and mobile providers and the proactive and supportive role of the Indian government, all of which can help fulfill the goal of bringing consumers into formal and organized financial markets that are accessible, secure, convenient and rewarding. Improving connections between these complementary industries and the government could provide great rewards for all constituents.

> "In an interview with *The Economist*, the former Chairman of State Bank of India (SBI) pulled his mobile phone out of his pocket and stated, "This [the mobile phone] is the [bank] branch."

Mobile as the Bank Branch: A Promising Alternative to the Informal Financial Markets

Financial reports claim economic growth in rural markets has surged nearly 40 percent beyond that of urban markets, which have been increasing at 20 percent, and rural growth now accounts for half of India's GDP.5 Just as FMCG companies have tapped into India's rural market opportunity, a distinct opportunity exists for financial services in serving the rural unbanked. McKinsey & Company estimates that "informal lending in rural areas amounts to $85 billion, roughly one-third the amount of credit from the formal financial systems."[6] Many of India's unbanked are engaged in agrarian activities. At the end of a harvest season, without a financial mechanism such as a savings account to carry them over until the spring season, kitchen utensils have sometimes acted as a stored-value system. Bought at the end of the harvest, the utensils are stored until cash is needed to invest in the next cycle of farming operations. Janmejaya Sinha of the Boston Consulting Group in Mumbai speaks to the creativity of the rural poor who devised these unusual and primitive financial products: "In the past they would buy kitchen utensils and keep them unused, then sell them back to the merchant for a 10 percent discount when they needed money for food. Now technology is supplanting kitchen utensils."[3] In the formal markets, it is hard to imagine a customer promotion designed with the expectation of a 10 percent loss at withdrawal as an attractive customer acquisition strategy, but in the agrarian society of rural India it is treated in a way similar to insurance.

Mobile as a consumer servicing channel is a global phenomenon, but nowhere more so than in emerging markets like India. For FIs in India, a platform that provides the ability to package payments and alerts and deliver key customer payment transaction services is one begging for expansion. For India to meet the market's expectation of its emergence as a powerful global player and ensure sustainable market growth – a stated objective of the Reserve Bank of India (RBI) – developing a financial ecosystem inclusive of the rural unbanked will be critical. Partnerships between the leading mobile operators and FIs are already being formed to meet this objective. Joint ventures, such as that between Airtel and State Bank of India (SBI), highlight the potential for global or domestic FIs to partner or strengthen existing relationships with mobile carriers operating in India. These partnerships can help provide m-payment transactions that support basic banking services for India's rural population, an extremely large and underserved population of more than 800 million, 600 million of whom are estimated to be unbanked.[7]

The Economist's World in 2011 predicts the Indian m-telephony revolution will not just be about phones, but also about networks that will enable mobile phones to be a great equalizer connecting the underserved to the rest of India and the world. These networks will allow India's rural populations to access current crop prices, enabling price discovery, transparency and other benefits from a host of services and information previously unavailable. However, "millions of ordinary Indians will get online, cheaply, for the first time in 2011."[8]

In Addition to Public and Private Sector Banks Other Types of Institutions Serve the Rural Markets

Regional rural banks
- Banks primarily serving rural markets, smaller than those operating in metropolitan markets
- At least 80 banks with the number of branches totaling approximately 15,000[32]

Cooperative banks
- A retail or commercial banking operation that is customer owned with presence in urban and rural centers
- The core services are savings and loans
- Approximately 7,300 cooperative rural bank outlets / 2,069 urban outlets[10]

Micro finance institutions (MFIs)
- Offer small-scale financial services to rural poor
- More than 3,000 MFIs exist. The leading 10-12 MFIs handle more than 60 percent of transactions
- The draft Micro Finance Bill 2011 proposes bringing all aspect of microfinance under the RBI's oversight

Financial inclusion providers
- These organizations — FINO & ALW — contract with several banks offering them access to their technology and distribution channels
- Across the country-appointed agents, Customer Service Providers (CSPs) service villages, handling deposits and withdrawals via a handheld terminal, mobile device
- Acting as a mobile ATM, CSPs batch the data back to the bank on daily basis[11]

These market indicators suggest a high probability that the rural unbanked mobile subscriber could advance directly to m-banking services, bypassing traditional banking channels, products and payment solutions.[5]

Indicators Point to a Market that is Primed for M-Payments Adoption

Limited Access to Retail Banking: Frugal Innovation as an Alternative to Expensive Infrastructure Improvements

For banking services to reach the rural unbanked, FIs will need to either focus on expensive investments to build out the network of POS devices and automated-teller-machines (ATMs), or design innovative solutions or alternative distribution channels to provide banking services that are affordable and accessible by all. More than 70 percent of India's population lives in rural villages with limited or no access to the most basic banking and credit services, including deposits, withdrawals, balance inquiries, small loans and basic payment services. Urban markets are attractive to FIs, but even with a variety of institutions serving portions of the rural markets — regional rural banks, cooperative banks, micro finance institutions and financial inclusion providers — an opportunity exists for FIs to provide additional services or supplement current ones. To date, the banking industry has focused on providing electronic payment mechanisms primarily to the burgeoning middle-class in the urban or semi-urban markets. As a result, Indian consumers' accelerating shift from cash to electronic transactions has been largely limited to the country's urban pockets. For banks extending into rural markets, it's not just the weak infrastructure that presents a challenge, but also the small average transaction size — commonly referred to as a micropayment — made by the rural poor that presents challenges for service delivery. For these reasons, the cost to conduct business in these markets has often outweighed the returns.

Mobile payments present an excellent, ready-made alternative channel for harnessing Indians' mobile phone usage. According to Gartner, by 2013 Indian texting could reach 192 billion messages.[9] Mobile technology has the potential to bridge many of the current market gaps, close the urban-rural divide, cultivate financial inclusion, and bring the Internet-based information age to millions — all for the benefit of consumers, the financial sector and the country's economy. The rural market in India represents an extremely large and underserved population, many of whom engage in the $85 billion informal credit market.[7] For this market segment, mobile phones present an attractive and near-term solution to leverage mobile operators' established and extensive networks that reach into these underserved markets. In fact, due to the ubiquitous nature of mobile phones in India's rural environment, mobile payments could advance and gain deeper market penetration than traditional card-based payments in India's 600,000 villages, of which approximately 550,000 have *no* access to banking, credit or Internet services. Figure 1 demonstrates the growing opportunity for m-banking at current trends. Global or domestic FIs in partnership with mobile operators hold the potential to develop payment channels utilizing a technology platform that is operationally scalable across geography, culture, education level and language barriers, while equalizing the imbalance of access between urban and rural segments. Mobile payments are a quicker, more efficient and more economically viable solution for FIs to provide banking services for consumers and merchants in these rural underserved markets.

The ubiquity of mobile phones in rural India provides FIs with an attractive alternative to expensive infrastructure improvements. This strategy leverages the *disruptive-innovation theory*, which advocates "…driving growth through new offerings that are simpler, more convenient, easier to access or more affordable…"[12] In India this is commonly referred to as a *frugal-innovation*, taking into account the needs of poor consumers by stripping the product down to its bare essentials. An article from *The Economist* underscores that while cutting costs is at the core of these innovations, frugal does not mean second-rate, as the products must be user-friendly, durable and relevant for local market conditions. As an example, Nokia's mobile handsets include a flashlight function in case of power outages, which occur frequently in India.[13] Indeed,

Mobile as an Acceptance Point Automating the Rural Supply and Demand Chain

Across the rural supply and demand chain, mobile could automate and transform the process for buying and selling goods & services.

Step 1 Manufacturer to Regional Distribution Center

- Manufacturer and distributor can accept and track orders and exchange payments.

Step 2 Regional Distribution Center to Retailers & Kirana (neighborhood) Stores in Rural Markets

- Mobile wallet can access a prepaid card or line of credit for transactions with smaller merchants.
- As a payment acceptance device, mobile device price points would need to fall significantly to become a viable merchant option.

Step 3 Kirana (neighborhood) Stores to End Consumer

- Customers are incented with convenience, product discounts, and loyalty/ rewards at point of sale if transaction is by mobile payment.

the simplest and cheapest mobile handsets in India also allow users to engage in video games, access the Web and conduct basic financial transactions.

Rising Mobile Tele-Density and Prepaid Card Propensity: Changing Attitudes About Cash Among Rural Consumers

Today, the high mobile tele-density level in India's rural environment provides FIs the ability to offer Internet and mobile banking services without a bank branch.[14] For India's population of more than 1 billion, the promise of electronic payments is fueled by the sheer volume of micro transactions given the size of the market and the number of mobile subscribers. As referenced in an earlier sidebar, the total mobile banking (m-banking) subscriber base in India is projected to reach 65 million by 2012 as compared to 23.5 million in 2009.[2] This is a mere fraction of the total mobile subscriber base of more than 800 million in 2011.[15] Currently, the majority of m-banking transactions support payments for utility bills, mobile recharge, movie tickets and airline tickets. As urban mobile penetration levels peak, most of the growth is driven by rural and semi-urban areas. Deloitte reports that subscriber levels increased 35 percent between March 2009 and 2010, with tele-density levels of approximately 30 percent.[16] This translates to approximately 8.76 million new mobile phone subscribers *per month* in rural areas between December 2009 and March 2010.[5]

Particularly compelling is a report on *The India Prepaid Card Market* that states the number of mobile phones in rural India reached 236 million as of July 2010.[5] This figure exceeds the estimated number of rural bank account holders — 187 million adults — and far outpaces the total population's access to broadband Internet at 8.8 million connections as of March 2011.[9] In India's rural communities, mobile phones are significantly more common than financial outlets. The majority of mobile phones operate on a prepaid model, and consumers are both comfortable and reliant on credit or stored value. These market indicators suggest a high probability that the rural unbanked mobile subscriber could advance directly to m-banking services, bypassing traditional banking channels, products and payment solutions.[5] In an interview with *The Economist*, the former Chairman of the State Bank of India (SBI) pulled his mobile phone out of his pocket and stated, "This is the [bank] branch."[3]

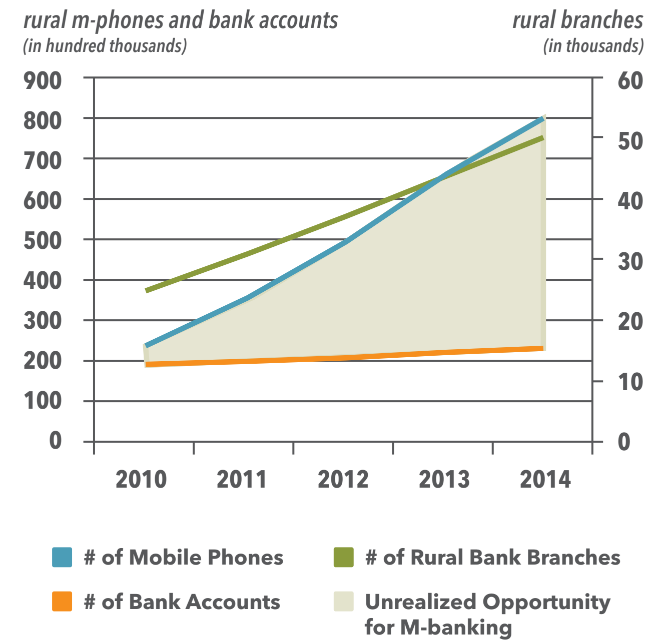
Prepaid cards already fill a distinct market niche for many Indian consumers—as evidenced by skyrocketing growth projections of more than 50 percent for a customer segment estimated to be approximately 600 million.[5] Furthermore, the fact that mobile carriers' recharge plans are based on the prepaid model suggests that many consumers in this market segment are already comfortable with the idea of mobile electronic transactions. According to Edgar, Dunn & Co. Director Samee Zafar, "The link between a prepaid product and the mobile device is crucial. A prepaid wallet on the mobile helps consumers send money to others, pay for goods and services, and also pay their bills. A linked branded prepaid card allows mobile wallet users to make in-store purchases and withdraw cash. If the card is scheme branded, Visa, MasterCard, or RuPay consumers will have the ability to make payments or withdraw cash wherever these brands are accepted."[17] This familiarity with prepaid cards for mobile applications indicates a high likelihood that rural Indian consumers will accept mobile phones as their e-wallet for money transfers or other types of electronic payment transactions.

Penetration Rates[5]

Banking Services	*Rural*	*Urban/Semi-urban*
POS:	24%	76%
ATMs:	5%	95%
Bank Branches:	30%	70%
Population:[8]	70%	30%

Sources: *"The Indian PrePaid Card Market."* Published by VRL Financial News Ltd 2010. *The Economist's The World in 2011.*

Figure 1: Unrealized Opportunity for M-banking in Rural Areas



FMCGs' Evolving Roadmap for Penetrating Rural Underserved Markets

FIs expanding their reach to rural populations could adapt frugal innovations and cross-industry collaborations deployed by India's leading FMCG companies. Poised to become a $100 billion category by 2025,[18] India's FMCGs have adopted strategies and developed products, customer value propositions and distribution channels to address the host of challenges inherent in penetrating and serving the rural market segments. Led by industry giants such as Unilever, Proctor & Gamble (P&G), Imperial Tobacco Company (ITC), Reliance and the Tata Group, these global companies have successfully addressed India's market conditions that pose challenges in accessing remote rural villages. The success of FMCGs is attributed to growth driven by designing simpler products often offered in smaller formats, increased accessibility enabled through unique distribution channels, and the ability to offer products at lower price points and value — the key tenets of successful disruptive or frugal innovations.

Based on this premise, P&G recently launched the Gillette Guard Razor, a cheaper but effective alternative for men in rural India who lack indoor plumping and don't shave with regularity.[12] Unilever's Indian subsidiary, Hindustan Unilever Ltd. (HUL), devised an innovative rural distribution channel called Project Shakti.[19] HUL describes Project Shakti as a direct-to-consumer sales model relying on female micro-entrepreneurs. This rural sales model and distribution channel has infiltrated India's rural markets, driving positive social change, opening new markets and generating business from what HUL refers to as a "fast-growing global market of low-spending consumers."[20] Multi-sector partnerships could strengthen the distribution model. HUL, together with SBI, is piloting a program in which the HUL micro-entrepreneurs also serve as customer service providers (CSPs). "HUL's Shakti Ammas, women who sell HUL's consumer products in rural India, have doubled up as CSPs and opened around 1,000 [bank] accounts for rural folk."[21] The two key takeaways from FMCGs success include: (1) how to cost-effectively and successfully penetrate the rural customer segments with frugal innovations and (2) how FIs could leverage existing distribution channels — whether those of the FMCG or mobile operators — to extend the reach of electronic payment transactions and the acceptance of m-payments.

One potential approach would entail leveraging cross-industry collaboration. Specifically, this would be a unique opportunity for banks to integrate the rural supply chain with mobile payments — in essence, automating the distribution value chain with the potential to reduce administrative costs, control revenue leakage, speed data capture, and provide data for analyzing customer behavior and rural market trends. FIs, mobile operators and FMCGs hold a common interest in serving India's rural customer segments in a viable manner while also creating a positive social impact. As FMCG's customer segments become more comfortable operating within the formal banking sector, consumers' increased lines of credit will allow for the purchase of larger product formats for family use or in micro-entrepreneurial pursuits. Further establishing partnerships among FIs, mobile carriers and FMCGs would allow FIs to leverage FMCGs' consumer mind share, as well as their proven and unique rural distribution model, to create awareness and educate these customer segments on the benefits of m-payments. Rural markets are ripe for electronic transactions, but a key factor for gaining momentum entails making a concerted and significant effort to increase customer awareness, incentivizing them to activate accounts and adopt new payment behaviors.

Two Key Takeaways from FMCGs Success:

1. How to cost-effectively and successfully penetrate the rural market customer segments with frugal innovations
2. How FIs could leverage existing distribution channels—whether those of the FMCG or mobile operators—to extend the reach of electronic payment transactions and the acceptance of m-payments

While FMCG products achieve penetration through innovative package formats, attractive price and value propositions or distribution channels, FIs and mobile operators must seek industry innovations relevant to their own market challenges and objectives. The margins and growth projections will vary across industries, but the micro-transactions defining the rural banking market will be driven by the sheer volume of customers and their usage frequency. Even so, the overarching concept of extending electronic payment transactions into rural markets by way of a viable, cost-effective and scalable model may be most effectively achieved through cross-industry collaboration.

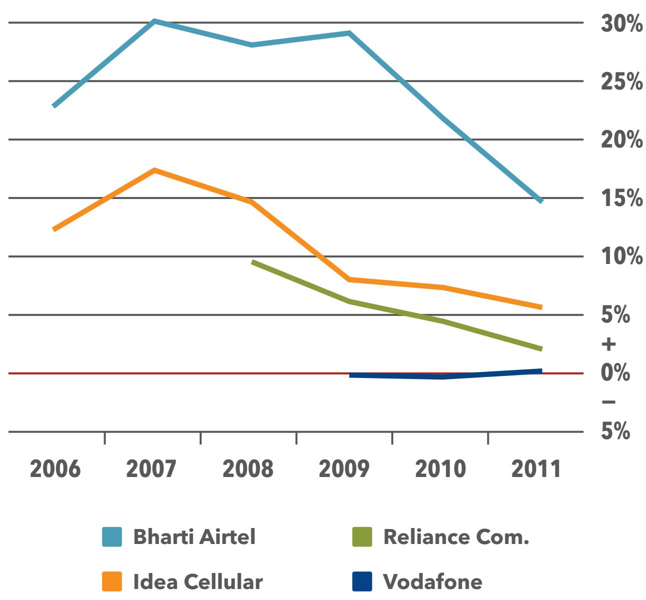
New Connections Signal Promise of M-Payments

Unlike the U.S. market where mobile payment transactions threaten FIs' traditional revenue models, the potential to create a financial ecosystem that leverages mobile phones in India offers scale beyond any other distribution channel and new revenue streams. Competition among handset manufacturers has spurred falling prices for mobile handsets, calling rates, data plans and launch of faster 3G services. All are advantageous for Indian consumers, but place immense downward pressure on mobile operators' operating and profit margins as shown in figure 2. Tethering to FI's payments initiatives offers Indian mobile operators potential relief through incremental revenue streams derived from enabling m-payment transactions while offering FIs a cost-effective approach to reaching rural markets.

Partnerships between mobile operators and FIs are forming with more likely to follow. The most notable joint venture is between the country's largest commercial bank, State Bank of India (SBI), and its largest telecom provider, Bharti Airtel, which is perceived as a world-class operator. This partnership represents one of the boldest efforts to bring the unbanked into the formal financial sector. In lieu of bank branches, the venture designates Bharti Airtel's retail outlets as Customer Service Points, physical locations where customers can open SBI bank accounts and handle basic banking needs. This would be a model most similar to reloading prepaid cards or mobile minutes at a convenience store or other outlet. As stated by Airtel's Chairman, "This historic collaboration between SBI and Airtel will create a scalable operation that will address the banking requirements of millions of Indians through the mobile platform."[22] According to Noel Gordon of Accenture, "They [SBI] are using the unbanked as a big laboratory to pilot new ways of banking. The phone really is the branch, extraordinary though it may seem, and it is taking SBI into 100,000 villages that have no other banks."[3] While the public sector banks are connecting with mobile operators, the private sector banks are also pursuing similar partnerships. One such venture is between Vodafone Essar, the second largest mobile operator, and ICICI, the country's largest private bank. According to ICICI, the partnership "offers a range of services in a simple, consolidated menu. Now you can carry out banking transactions like funds transfer, bill payment, balance enquiry, locate a branch, view last five transactions and much more through your mobile phone."[23]

As India's public sector, and, to a lesser degree, private sector domestic banks set the foundation for m-banking and m-payment services in rural markets, their efforts are developing this market's category and spurring competition. This presents an opportunity for other private sector and foreign banks to complement or directly compete in the rural markets. Already, international banks are piloting programs — in 2009, for example, Citibank launched Citi Mobile. According to N. Rajashekaran, Country Business Manager, Global Consumer Group, Citi India, said, "Given

Figure 2: Indian Mobile-operators' Percent Return On Capital



Source: "Happy customers, no profits: India's mobile industry is magnificent but also a mess." *economist.com.* 16 June 2011.

the recent growth trends in mobile phone usage in India, we expect this to grow into a significant channel for customer service and contact."[24]

These banks are competing for the business of rural customers, offering consumers choices while opening previously inaccessible markets. This is a win-win for all—FIs, mobile operators, customers, merchants and the government. For FIs, offering these value-added services grows the revenue pie for the entire industry and their organizations, while mobile carriers benefit from a new revenue stream. For mobile operators incremental revenue streams improve their ability to generate a positive return on costly investments in building a network. Currently, as figure 2 shows, "only one of the big four firms was close to recouping its cost of capital last year as the price war hit margins and an expensive 3G spectrum auction in 2010 bloated balance-sheets."[25] The win for the government is the fruition of its financial inclusion vision and the additional tax revenue created by drawing people out of the gray and informal markets and into the formal banking sector. The win for consumers, particularly the underserved BOP, is the convenience of mobile payments and the expanded access to basic banking services, such as checking and savings, money transfers and credit-based services that integrate them into the formal economy. With more consumers participating in the formal markets, merchants can grow transaction volumes and revenues.

The Challenges Ahead for M-Payments: Syncing Capabilities with the Market Need

Even though market indicators for the adoption of m-payments are both strong and promising, obstacles do exist. From the consumer perspective, adoption of electronic transactions could face similar hurdles as card payments in rural India—low awareness, lack of merchant acceptance capability and overall security concerns. From a technology perspective, the current m-payment capabilities present limitations requiring increased collaboration between FIs and mobile carriers. The simplicity of mobile phones—like those offered by MicroMax or Karbon—has allowed for a reasonable price point as low as $20. These stripped down smart phones still enable basic features and access to applications like Facebook or Twitter. However, in order to handle electronic payment transactions safely and securely, the handsets will require more robust security and fraud detection, data storage and processing capability. From a merchant perspective, further engineering would bring down the cost of using mobile handsets to accept in-store payments. Another problem is the lack of interoperability standards for mobile wallet payments across banks and mobile operators. A street vendor selling fruits and vegetables via mobile terminals would need to be compliant with PCI standards to allow for printing or electronically transmitting customer transaction receipts. Currently, the cost of payment acceptance via mobile devices could more than double the cost of a fixed point-of-sale terminal. Even with current limitations, electronic transactions are an exciting reality for providing hundreds of millions of consumers with banking and payment services in a low-cost and convenient manner as a realistic and compelling alternative compared to cash or kitchen utensil transactions.

Beyond identifying and articulating the significance of mobile phones as a delivery channel, the government is addressing three key areas important to the development of this market: the expansion of POS infrastructure, the proliferation of business correspondents and the creation of a national identification method.

Creating the M-Payment Foundation: Areas the Government is Addressing

RBI's mandate for FIs to provide banking services that are both affordable and accessible to all underscores the significance of mobile phones as a delivery channel. Beyond identifying and articulating the significance of mobile phones as a delivery channel, the Indian government is addressing key areas important to the development of this market: the expansion of POS infrastructure, the proliferation of business correspondents and the creation of a national identification method.

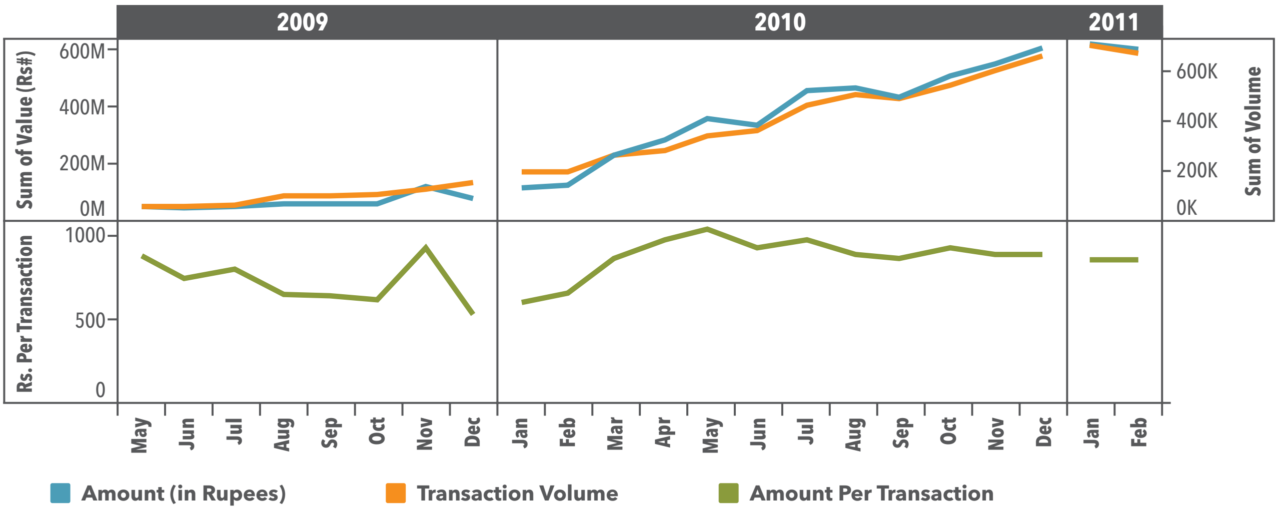
Expansion of POS infrastructure and Role of Business Correspondents

The demand for POS and ATMs outpaces current acceptance points; however, growth is trending upward.[26] The SBI plans to install more than 500,000 POS terminals with a percentage destined for rural markets. The lack of access to banking and payment services affects consumers' purchase behaviors whereas electronic payment transactions and credit-based services should accelerate the volume and value of services and goods exchanged across rural India. According to C.K. Prahalad, "Often, the decision to buy for Bottom of the Pyramid consumers is based on the cash they have on hand at a given point in time."[4] The current banking infrastructure and alternative distribution channels are not yet capable of meeting consumer demand. RBI has fostered a regulatory environment amenable to the proliferation of business correspondents who can promote financial inclusion by extending the reach of basic banking services into rural environments. These bank-endorsed and supervised correspondents act as intermediaries that handle basic banking services, such as remittances, withdrawals and new account openings in markets without adequate penetration of bank branches, ATMs, POS terminals or kiosks. As described in *The Economist*, "To reach remote villages, SBI is appointing agents equipped with mobile phones attached to card readers. Customers swipe their savings card on the phone and hand their deposit to the agent, who pockets the money. When they wish to make a withdrawal, he reaches into his pocket for the cash."[3] The one caveat is that this payment mechanism highlights the need for equipping individuals with a method for identity authentication.

National Proof of Identity Positions Individuals for Formal Banking Eco-system

Identification, in a legal or verifiable format, is a critical infrastructure element for conducting transactions in the formal banking market. In a recent online PYMNTS.com forum, one participant stated, "Who wants to carry a cell phone and a wallet around if just your cell phone will do? Eventually everything will be on there, your cards, your cash, your ID."[27] For consumers in developing markets like India, where cash still trumps payment cards, legal identity documents and address proof documents — ration cards, passport or driver's licenses—aren't held by many people operating outside of the formal markets, thereby preventing their access to banking and payment services. Lagging card issuance and card payment adoption rates most likely are attributed to consumers' overall security concerns, generally

Figure 3: Mobile Banking Transaction Trends: Amount vs. Volume Analysis for All Banks



Source: "Mobile Banking Transactions In India – 2009 To 2011." *charts.medianama.com*.[29]

low awareness levels and a lack of legal proof of identity. Clearly, lack of positive identification hampers organizations' customer acquisition ability, customers' transaction ability and ultimately impacts the overall growth of the payments market.

The Indian government's implementation of a unique identification number for *every* citizen based on demographics and biometrics is essential for fulfilling the financial inclusion vision by enabling "residents to easily verify their identity to public and private agencies across the country."[14] This enables customers to open bank accounts, establish credit histories and transact safely, all of which is instrumental for the growth of payment services across the country. Connecting the UID to a mobile subscribers' phone number facilitates the security and convenience of m-payment transactions. The first 12-digit UID number was assigned to a villager on September 29, 2010.[28] The eventual plan is that UID numbers will be assigned to everyone residing in India. The UID might not be the critical trigger ushering the rural unbanked into the formal banking eco-system, but it will be a key accelerator for electronic payment transactions reaching their tipping point.

Disbursement of Government Benefits Leveraging Mobile, Prepaid and UID

In India, dozens of government and social welfare schemes exist to cover food, education, health services, fertilizers, petroleum and transportation for the economic development of rural and underprivileged groups. According to a May 2011 World Bank report, "India spends over 2 percent of GDP [or $20 billion] on core safety net programs," including some of the schemes listed.[30] Total disbursements is believed to be up to three times what is spent on such core programs. One of the key catalysts of growth for mobile payments will come from leveraging mobile, prepaid and UID for distribution of these government benefits. This approach is an emerging trend that is being explored in BRIC countries. In fact, the Prepaid International Forum recently collaborated with leaders from India and Brazil to discuss the potential of prepaid, from which mobile is a clear and natural extension. As stated by Glaucon Pereira, CEO of ATIVI Telecomnet and Chairman of PIF Brazil, "It was interesting to note that for both markets [Brazil & India], the potential for prepaid to facilitate social inclusion is vast in that prepaid offers a secure, low-cost medium to distribute social benefits and pensions."[31]

> The lack of access to banking and payment services affects consumers' purchase behaviors whereas electronic payment transactions and credit-based services should accelerate the volume and value of services and goods exchanged across rural India.

For rural India, leveraging m-payments for social programs would allow a recipient to walk into a business correspondent's office and use their UID number to open an account connected to a reloadable prepaid card or a prepaid accessed via their mobile phone. Currently, the welfare schemes covering food are put on a ration card accepted only at certain food outlets catering to this program, such as the Fair Price Shops. Using m-payments as the disbursement channel would provide multiple benefits including securing fund distribution, streamlining the process, reducing leakages, decreasing the manual paperwork and reducing overall costs of disbursement. This proposition is attractive, as most of the recipients of subsidized social programs are not bank account holders but do have a mobile phone. Furthermore, this channel could limit usage of the funds in accordance with each of the schemes' rules, for example by limiting purchases to specific merchant category codes.

CONCLUSION

As summarized by *The Economist*, "India's mobile-phone industry inspires great hopes. Many see it as vital to the nation's development: a way of bypassing obstructive bureaucrats and bringing services to the masses, from mobile banking and payments to accurate crop prices. Already a third of subscribers are in rural areas. Mobiles bring the whole world to villages."[25] Global and domestic FIs can better leverage prepaid and no-frills bank accounts to fulfill RBI's vision for financial inclusion for all. Furthermore, FIs in partnership with mobile operators have the capability to develop a payment channel utilizing a more defined mobile network, a technological platform that is operationally scalable across the geography, culture and language, while at the same time addressing the imbalance of access between urban and rural markets. FIs that develop expertise and services for the rural unbanked market will influence positive social consequences and benefit economically. FIs that create and guide the growth of mobile payments are best positioned to reap the rewards, in this case the potential of ushering millions from the informal banking system into the formal one.

While this report does not predict when exactly mobile payments in India will meet their potential, it clearly outlines the key imperatives that will enable m-payments to fulfill their domestic promise and global role:

1. The financial industry's limited penetration in provisioning technology, banking and payments infrastructure in rural markets suggests it is imperative to leverage mobile telecom's existing distribution channel and networks' ability to scale and transcend boundaries.

2. Prepaid already fills a distinct market need for many Indian consumers. This familiarity with prepaid cards for mobile applications indicates a high likelihood that rural Indian consumers will accept mobile phones as their e-wallet for money transfers or other types of electronic payment transactions.

3. The government's vision for financial inclusion for all and its fundamental and proactive measures — supporting infrastructure expansion, deploying business correspondents and rolling out a national identity number — are imperative for facilitating the extension of formal financial systems to the rural markets.

4. Cross-industry collaboration among FIs, mobile operators and FMCGs is imperative to generate consumer awareness and pull consumers into organized banking and credit markets that are accessible, secure, convenient and rewarding to all market participants.

ABOUT TSYS

Amit Sethi is a 25-year veteran of the global payments industry. During his career, Mr. Sethi has been actively involved in the financial services, technology and outsourcing industries in the U.S. and India. He has held a series of executive positions with companies such as Bank of America, HSBC, Visa International, KPMG, Oracle Corporation and iGate. Mr. Sethi was Global Sales Head of Financial Services and Service Industries for Sutherland Global Services prior to joining TSYS, one of the world's largest companies for licensed and outsourced payment services, where he is now Managing Director of India and Southeast Asia. Mr. Sethi also serves as Co-Chairman of the India chapter of the Prepaid International Forum, whose members are the country's leading bank and non-bank issuers, global and national schemes and technology companies.

TSYS (www.tsys.com) is a leading global payment solutions provider connecting consumers, merchants, financial institutions, businesses and governments. Through unmatched customer service and industry insight, TSYS offers merchant payment-acceptance solutions as well as licensed and outsourced services in credit, debit, prepaid, mobile, chip, instalments, money transfer and more. TSYS makes it possible for those in the Indian and global marketplace to conduct safe and secure electronic transactions with trust and convenience.

CONTRIBUTORS

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