

The Mobile Banking and Payment Revolution

By Sunil Gupta

Mobile technology is revolutionizing the global banking and payment industry. It offers new opportunities for banks to provide added convenience to their existing customers in developed countries, and reach a large population of unbanked customers in emerging markets. However, banks face significant challenges as new players enter these markets and change the ecosystem of the industry. Although no single model has been successfully imported from one country to another due to significant country-specific differences in the regulatory financial infrastructure, and customer needs; financial service firms can learn some lessons from the limited success of current approaches to design their strategy in this exciting area.

The Internet has changed the way we search for information and shop for products. This has transformed many industries ranging from music and travel to advertising and retail. Now mobile technology is poised to have an even more far-reaching impact on the banking and payment industry across the world. By 2015, over 900 million people are expected to transact \$1 trillion in the global mobile payment market.¹

Due to significant country-specific differences in banking regulations, income distribution, customer needs, and mobile usage, this revolution is going to be complex as multiple players jostle for position. While any bank or new player will need to examine its own country or market in detail, some common themes are unfolding in the developed and emerging markets.

The Changing Dynamics in Developed Markets

Almost everyone in the developed countries has a mobile phone and some consumers have multiple mobile subscriptions. Mobile penetration is 105% in the U.S. and France and it is even higher in the U.K. and Germany at 130%.² However, mobile banking is relatively new in many of these markets and its usage is still low in most countries (Figure 1).

Figure 1: Mobile Banking Usage in Developed Markets (2012)

% Respondents who had a mobile banking transaction in the last three months



Source: Adapted from "Customer Loyalty in Retail Banking", Bain & Company, December 2012



Banks Go Mobile

Banks are already investing in mobile technology and security, developing smartphone apps, adding new features such as remote deposit of checks, and educating consumers. Consequently mobile banking adoption among consumers has been much faster than the adoption of online banking more than a decade ago.³

Most banks believe that the mobile channel will help them reduce transaction costs as well as increase customer engagement and retention. This is similar to the intended benefits of online banking several years ago. However, a Harvard study shows that while online banking improved customer retention and reduced cost per transaction, it led to an increase in the total number of online and offline transactions that resulted in an increase in the total transaction cost.⁴

More importantly, banks will be myopic if they view mobile as just another channel for doing business. Mobile technology is changing the ecosystem of the banking industry as new players with innovative solutions enter this market. While some players such as Google Wallet are working with existing credit card companies like MasterCard and Visa, others such as PayPal or Square are emerging as strong competitors that could undermine the traditional partnership between credit card companies and banks.

New Players

In the U.S., PayPal has emerged as a dominant player for online and mobile payments. PayPal started in 1998 as a person-to-person (P2P) electronic payment network that grew rapidly after eBay acquired it to allow its buyers to pay sellers through PayPal. Soon the company grew beyond eBay users and by the third quarter of 2012, PayPal has 117 million active registered users across 190 markets with quarterly revenue of \$1.37 billion.⁵

Emergence of these new players in the mobile payment market makes it evident that banks and credit card companies need to take an active role in this revolution.

Square, founded in the U.S. in 2009 by Jack Dorsey, the co-founder of Twitter, provides an attachment for mobile phones and tablets that merchants can use to process credit cards. Due to its quick approval process for merchants (90% of applications are approved within seconds), no hardware cost (square card reader is given free to merchants), and simple and transparent fee structure; Square has found a rapid acceptance among small merchants in the U.S. By the end of 2012, it is used by two million merchants in the U.S. and the company is on track to process \$6 billions in payments. In August 2012, Starbucks decided to use Square in all its 7,000 U.S. stores and invested \$25 million in the company.⁶

About a dozen big U.S. merchants including Wal-Mart, Target and 7-Eleven, with combined annual sales of over \$1 trillion, are jointly developing a mobile payment network called Merchant Customer Exchange or MCX. Since credit card payments are a significant cost for these retailers, they view the new mobile platform as a way to reduce these costs and gather customer information.

Mobile network operators (MNOs) see an obvious opportunity in mobile payments, as they own the wireless networks and relationship with their customers. Three of the largest MNOs in the U.S. are forging an alliance to create a mobile payment company Isis. In the U.K., the three largest MNOs that cover 80% of the U.K. mobile customers have formed a joint venture, Weve, that will start operation in 2013. The French Cityzi, formed by four French MNOs, has sold more than 1 million smartphones with Near Field Communication (NFC) capabilities. In late 2012, four MNOs in Denmark announced the launch of a common mobile payment platform.

Emergence of these new players in the mobile payment market makes it evident that banks and credit card companies need to take an active role in this revolution. The incumbents have significant advantages – banks have consumers’ trust and the infrastructure and knowledge of financial transactions; and credit card companies have the merchant network and the capability of processing billions of transactions every day. However they will need to forge partnership with some of these new players, share portion of the mobile revenues, and develop new capabilities in the mobile arena.

The Mobile Revolution in Emerging Markets

The 7 billion people in the world have 6 billion mobile phones but only 2 billion bank accounts. Emerging markets are in a unique situation with low penetration of bank accounts but high adoption of mobile phones. In Bangladesh, 57% of its 150 million inhabitants have a mobile phone, but only 13% have a bank account.⁷ India has a population of 1.2 billion with 900 million mobile phones but only 250 million bank accounts.⁸

Governments see mobile technology as a vehicle to achieve financial inclusion, especially among the rural and poor

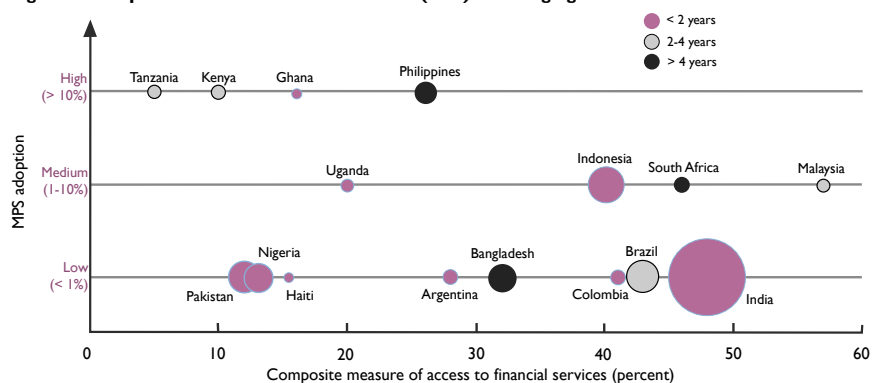
population of their countries; and for-profit firms view this as an opportunity to grow and reach new customers. New services typically involve using a mobile phone and its SIM card to store money, make P2P transfers to friends and family, and mobile payments to small merchants.

Innovative Services

The poster child of such an effort has been M-PESA of Kenya. Launched by Safaricom in 2007, M-PESA has over 15 million users (or 33% of Kenya’s population) and more than 45,000 agents by September 2012. The company now handles over \$1 billion payments per month that account for 31% of Kenya’s GDP.⁹ Recently M-PESA has launched a new banking service, M-Shwari, that allows its customers to open a bank account through their mobile phones without visiting a bank, save money and get interest on their savings, as well as obtain micro loans. Other examples of such successes include MTN in Uganda, Vodacom in Tanzania, FNB in South Africa, and GCash and SmartMoney in Philippines.¹⁰

These successes have prompted new players to launch similar services in many emerging markets. However, of the more than 130 such services, only a small number have been successful. A study by the World Economic Forum shows that only four countries – Kenya, Tanzania, Ghana, and Philippines – have achieved more than 10% adoption of mobile financial services among its population (Figure 2).

Figure 2: Adoption of Mobile Financial Services (MFS) in Emerging Markets



Note: Size of the bubble indicates population size, and colour indicates market maturity in years. Source: The Mobile Financial Services Development Report 2011, World Economic Forum, Geneva.

Differences in countries' economic, regulatory and banking infrastructure are among some of the reasons for the varied adoption across markets. Kenya, Tanzania and Ghana have limited infrastructure for banking and payments that made mobile payments a great value added to consumers. In contrast, banking infrastructure is well established in countries like India. Governments in Kenya and Philippines have adopted MNO-friendly regulations that allow MNOs to take on many of the banking operations. However, South Africa, India, Bangladesh, Tanzania and Uganda require a bank's involvement in any banking transaction.¹¹

Finally, there are more than 10 major MNOs in India that make interoperability of payments among them a challenge. In contrast, Safaricom in Kenya had a dominant market share that made it a de facto monopoly making it easier to establish its payment service as a standard in the country. As a result of these differences, there have been almost no successful imports of payment models from one country to another.

Reaching the Unbanked

Bank-MNO Partnership

Reaching the unbanked population in a large and diverse country like India is a challenge. Banks find it uneconomical to open even a no-frill branch in many of the remote and rural locations. High penetration of mobile phones and the existing MNOs' distribution system of mom-and-pop stores who act as airtime resellers provides a low cost opportunity.

As a result many banks are forging partnerships with MNOs. A bank-MNO partnership could potentially benefit both parties – banks could reach a large and untapped market at low cost, and MNOs could improve retention rates of their customers, most of whom are typically prepaid customers with very high churn rate.

However, experience in many countries has shown that this seemingly attractive partnership has not worked well. MNO agents do not find mobile financial services attractive since they provide lower commission than airtime sales. These agents are also worried that mobile money may cannibalize their airtime business – after all consumers with a mobile wallet would be able to buy airtime on their phones without going to the agents. MNOs also need to retrain these agents on legal issues and financial operations.

Banks and MNOs have different objectives and their existing organization and operational structures make it hard for any partnership to flourish. Finally, most mobile payment services are closed loop systems where a customer cannot send money to another customer in a different system. However, most countries have multiple banks and MNOs that make it extremely hard to create a system which allows for interoperability across banks and MNOs.

Business Correspondents

To extend the reach of banks, India's central bank, Reserve Bank of India, has relaxed its regulations to allow banks to

appoint agents, called business correspondents (BC), who can act on behalf of banks to provide financial services to customers. These agents could be individuals, non-governmental organizations (NGOs) or for-profit start-ups. By the end of 2012, over 95,000 BCs are working all over India.

EKO India Financial Services is an example of a BC that is using mobile technology to allow migrant workers to send money to their families in villages. EKO has built a network of mom-and-pop stores that act as Customer Service Points (CSPs) and conduct cash-in and cash-out operations for customers. Commenting on the EKO model, Bill Gates, Chairman of Microsoft, said, "By taking existing infrastructure and spare capacity among mobile networks, EKO model could dramatically reduce costs for service providers and customers alike."¹²

The BC model is going through growing pains as well. Increasing competition among BCs and their desire to scale quickly to gain market share has encouraged many BCs to expand rapidly by appointing a large number of stores as CSPs. This has led to relatively low number of transactions and poor economics for a CSP. A typical EKO CSP does about 300-400 transactions per month. In contrast, Safaricom grew its network of agents to match the growth of its customer base to ensure a steady 1,000 transactions per agent per month. The Gates Foundation suggests that agents should do at least 30 to 50 transactions per day for their business to be economically viable.

Prepaid Cards

Credit, debit and store card penetration in Brazil is 3.5 per capita compared to 0.25 cards in India. Consumers' familiarity with the cards and a well-established card infrastructure led the Brazilian government to introduce a prepaid and reloadable card for the unbanked for disbursing *Bolsa Familia* social benefits to over 12 million households.¹³

Each of these three distribution systems has its own unique challenges and no system works in all markets. Development of any network will require painstaking execution and negotiation among multiple parties. Prevalence of multiple banks and MNOs also suggests that there is a need for a global consortium, similar to Swift in banking, which makes interoperability feasible.

Customer Needs

As banks, MNOs, NGOs, and for-profit firms build new services to seize the opportunity to reach the large unbanked population, they must take time to understand the needs of customers. Even within a country, there are distinct differences in customer needs in urban and rural areas as well as across various segments.

Urban areas have a large number of migrant workers who need to send money to their families in remote villages. Globally, over 200 million migrant workers send more than \$300 billion a year to their home countries.¹⁴ The domestic

remittance market is large as well. Currently available options for remittance to these workers are either illegal and unreliable or expensive and slow. A low cost remittance product using mobile technology is an ideal product for this group of customers.

Rural customers need help in managing their money and cash flow. Farmers are flush with cash at the time of harvest – money that they store at home and that is gradually used for discretionary purchases. Without proper saving vehicles or cash management skills, farmers typically find themselves short of funds when the time comes to buy seeds for the next season. They get trapped in a vicious cycle as they turn to informal lending sources that are unreliable and expensive.


Government-to-person (G2P) payments is yet another segment of opportunity. Worldwide G2P payments in the form of subsidies to the financially excluded are expected to grow to almost \$1 trillion by 2015.¹⁵ In many countries, such as India, these subsidies are paid in cash through a complex network of government agencies. A study by the Finance Ministry of India estimated the cost of cash to the economy as 5-7% of the GDP.¹⁶ Payments through electronic and mobile channels have the potential to reduce these costs by a third and also avoid leakage due to corruption. While consumers and governments are keen to adopt mobile technology for G2P payments, intermediaries are creating barriers as they end up losing a good source of income. Any new product for the G2P market needs to consider the incentives and motivations of all parties involved in the current value chain.

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Different products appeal to each of these customer segments and winning a segment requires unique capabilities. This suggests that firms need to carefully pick and choose their battleground since no single player is likely to dominate all these markets.

The Road Ahead

Mobile technology is transforming the global banking and payment industry by providing added convenience to existing bank customers in developed markets, and by offering new services to the unbanked customers in emerging markets. This has the potential to unlock a large untapped market. This opportunity has attracted several new players ranging from MNOs and start-ups to companies from adjacent industries such as retail, each trying its own business model to succeed in this new world. The influx of so many players and different services has created confusion for customers, lack of coordination among players, and limited scale for any single company.

This fragmentation and confusion is not unusual for an industry that is undergoing dramatic changes. History tells us that after the initial stage of confusion, the dust eventually settles down and a few winners emerge. The winners in the mobile banking and payment industry are likely to be those who have a deep understanding of local markets, its customers and regulations, who are willing to innovate and commit significant resources to the new initiatives, and who are unafraid to forge partnerships with new players. 

About the Author

Sunil Gupta is the Edward W. Carter Professor of Business Administration at the Harvard Business School. He is currently the Chairman of the Marketing Department at Harvard Business School and co-chair of Harvard's executive education program on Digital and Social Strategy. He has published many articles and cases on digital and mobile strategy and won several awards for his research. Sunil has conducted seminars and consulted with several companies in the U.S., Canada, Europe, Asia, and Latin America. As a business expert he has frequently appeared on several national and international television programs such as CNN and BBC, and has been quoted in the press including *The New York Times* and *The Washington Post*.

References

1. "Mobile Payments: Three Winning Strategies for Banks," *Swift White Paper*, 2012.
2. http://www.itu.int/ITU-D/ict/statistics/at_glance/KeyTelecom.html
3. Sunil Gupta and Kerry Herman, "Bank of America: Mobile Banking," *Harvard Business School Case*, 2012.
4. Dennis Campbell and Frances Frei (2010), "The Cost Structure, Customer Profitability, and Retention Implications of Self-Service Distribution Channels: Evidence from Customer Behavior in an Online Banking Channel," *Management Science*, 56, no. 1, p. 4-24.
5. https://www.paypal-media.com/assets/pdf/fact_sheet/PayPal_Q3_2012_Fast_Facts.pdf
6. Amir Efrati and Annie Gasparro, "Starbucks Invests in Square," *The Wall Street Journal*, August 8, 2012, <http://online.wsj.com/article/SB10000872396390444423704577575803898185594.html>
7. Population numbers are from World Bank, mobile phone penetration from International Telecommunication Unit, and bank account information from Forbes <http://www.forbes.com/sites/tomgroenfeldt/2012/01/11/emerging-markets-mobile-banking-runs-ahead-of-google-wallet/>
8. "Mobile Payments: Three Winning Strategies for Banks," *Swift White Paper*, 2012.
9. 2012-2013 Half Year Results of Safaricom, http://www.safaricom.co.ke/images/Downloads/Resources_Downloads/Half_Year_2012-2013_Results_Presentation.pdf
10. Beth Cobert, Brigit Helms, and Doug Parker, "Mobile Money: Getting to Scale in Emerging Markets," *McKinsey Quarterly*, February 2012.
11. "Mobile Payments: Three Winning Strategies for Banks," *Swift White Paper*, 2012.
12. Sunil Gupta and Rachna Tahilyani, "EKO: Mobile Banking and Payments in India," *Harvard Business School Case*, 2013.
13. <https://www.partnersinprepaid.com/topics/articles/rich-opportunities-for-prepaid-cards-in-brazil.html>
14. Neeraj Aggarwal, James Bilodeau, William Hoffman, and Sjoerd Nikkelen, "Untapped Potential: Mobile Banking for the Unbanked," *BCG Report*, August 2011.
15. Neeraj Aggarwal, Tijsbert Cremer-Chaturvedi, Andre Xavier, Achim Seyr, and Jorge Becerra, "Capturing Payment Opportunities in Rapidly Developing Economies: Lessons from Brazil and India," *BCG Report*, Oct 2012.
16. "Report of the Task Force on an Aadhaar-Enabled Unified Payment Infrastructure," *Ministry of Finance, Government of India*, February 2012.