

# Mobile payments

## *Three winning strategies for banks*



*Seize the opportunity*

### Highlights

- Mobile payments are a top priority
- There is competition from non-banks
- Banks can use mobile payments to get closer to customers
- In particular for mobile money transfers, banks should collaborate to develop a global service

### Executive summary

Mobile payments are a hot topic in the financial industry and a top priority for banks, because:

- The ever growing ubiquity of the mobile phone: on a world population of 7 billion, there are 5 billion mobile phones, but only 2 billion people have a bank account;
  - Consumers are using their mobile phones to make payments in over 130 deployments with a 100 more planned and several new initiatives announced each week;
  - It is a growing market predicted to increase to 900 million users and USD 1 trillion in transaction value by 2015.
- Many banks have launched a mobile payments service or wallet, but this opportunity also brings specific challenges:
- There are many new entrants investing heavily in mobile payments: mobile network operators like Vodafone, e-commerce companies like Google, retailers like Carrefour, payment service providers like PayPal, as well as money transfer operators and card companies;
  - It is still an immature business where only a few initiatives have succeeded in attracting a significant user base;
  - It is an unclear business case for many banks who wonder what is the up-sell when a payment becomes mobile and who may see little value in a telco-led model;
  - It is a complex matter where legal frameworks are not yet harmonised,

technology is evolving with a need for partnerships, and where banks may feel they lack the expertise.

This competitive and fast evolving landscape creates doubt. Many banks wonder what to do: just stand by and watch or respond more pro-actively? What is our bank's mobile payments strategy?

Our recommendation to banks regarding mobile payments is two-fold:

1. Play to your strengths. Double-guessing under these circumstances can be costly. The path to success is to use clear criteria: respond to an obvious customer demand, use technologies that satisfy that need, and decide based on a clear business case.
2. Use mobile payments to bring your customers closer to your bank, in a new "experience banking model" (cf. SWIFT's white paper on Correspondent Banking 3.0).<sup>1</sup>

We see three areas of strategic opportunity for banks:

- Mobile banking: using a mobile phone to access a bank account and make payments - can provide more convenience to customers. Banks should actively invest and expand this channel now, in particular for corporate treasurers;
- Mobile commerce: using a mobile phone to buy products. This is driven by e-commerce companies looking to uplift their product sales and generate revenue from advertising. This is more a 3-5 year play as the customer/retailer value still needs to mature. Banks should

partner with these companies to learn and offer their financial services as part of that shopping experience;

- Mobile money transfers: using a mobile phone to send money to someone. This can provide a basic payments service to the un/under-banked in a developing country by converting cash to electronic transactions. Such services are currently often run on a domestic basis by mobile network operators, but they are now interconnecting to capture the higher margin international person-to-person remittances. Here, banks should consider bolder moves, individually set up a joint venture with a telco, as well as collaborate to launch their own global mobile money transfer service.

Each area may present opportunities for collaborative solutions: offer a serviced platform for mobile banking connectivity, provide a hosted application to distribute payments services onto a mobile commerce wallet or develop a mobile payments service for international money transfers.

In conclusion, mobile payments are a strategic opportunity for banks, both as a defensive play against new entrants, as well as a growth prospect to convert cash into electronic transactions.

## A top priority

Mobile payments are a top investment priority for banks.

In fact, the world's biggest banks continue to focus most of their announced IT initiatives on mobile financial services (including payments) and online banking.<sup>2</sup>

This is not surprising given the ever-growing ubiquity of the mobile phone. Out of a world population of 7 billion, over 5 billion or 70% have a mobile phone, whereas only 2 billion or 30% have a bank account. Take India: on a population of 1.2 billion over 800 million have a mobile phone and only 250 million have a bank account.

Consumers are increasingly using their mobile phones to make payments. A global inventory lists over 130 live mobile money deployments and nearly 100 more are planned.<sup>3</sup> Several new initiatives are announced every week.



Figure 1: Non-banks leading innovation in mobile payments

This is a growing market. Mobile is the payment technology that will have the greatest growth over the next five years.<sup>4</sup> Growth predictions for mobile payments vary from 350 to 900 million users generating USD 430 billion to 1 trillion in transaction value by 2015.<sup>5</sup>

## Specific challenges for banks

Many banks have launched a mobile payment service or wallet.

This is a very competitive and fast evolving battlefield with specific challenges for banks.

## New entrants

Many non-banks have entered the mobile payments market, often with innovative solutions. Mobile network operators like Vodafone, MTN, Orange and airtel have deployed mobile payments services in several countries or have set up joint ventures between them, like Isis in the US or project Oscar in the UK. Money transfer operators like Western Union and MoneyGram, as well as card companies like Visa, MasterCard and Amex all have multiple mobile payments initiatives. Payment service providers like PayPal are throwing their full weight into mobile. E-commerce companies like Google are deploying wallets for contactless payments using NFC (Near Field Communications).

## An immature business

Only a handful of these mobile payments services have succeeded in attracting a significant user base (over 1 million users). New initiatives may fail to go beyond pilot trials and some services (like Nokia Money

in India) have ended altogether.

## Unclear business case

For many banks the business case to do mobile payments is not clear. Mobile payments and linked commerce will represent USD 20-25 billion in revenue by 2016 from new revenue opportunities and potential loss mitigation.<sup>6</sup> But this is a very different kind of payments opportunity for banks to pursue as most of the revenue may be advertising related. Banks will need to compete for these new mobile value-added services and revenue streams. In addition, banks need to determine which role to play in these new value chains. In a telco-centric model for example, the bank's revenue share from providing the trust account function may be limited to 10% whilst 55% goes to the mobile network operator and 35% to the distributor.<sup>7</sup>

## A complex matter

Deploying a mobile payments service is not straightforward as legal frameworks across countries are not harmonised, technology is still evolving, there is a need for multiple partnerships, and in general banks may feel they lack the expertise.

## Three strategic opportunities

For many banks this competitive and fast evolving landscape creates doubt. They wonder what to do: just stand by and watch or respond more pro-actively?

We see three strategic areas of opportunity and actions for banks to use the mobile phone to forge closer relationships with their customers in a new "experience banking model" (cf SWIFT's white paper on

Correspondent Banking 3.0)<sup>1</sup>:

- Mobile banking: using a mobile phone to access a bank account and make payments;
- Mobile commerce: using a mobile phone to buy products;
- Mobile money transfers: using a mobile phone to send money to someone.

Let's examine this in more detail as each area comes with its own opportunities and challenges.

### Mobile banking

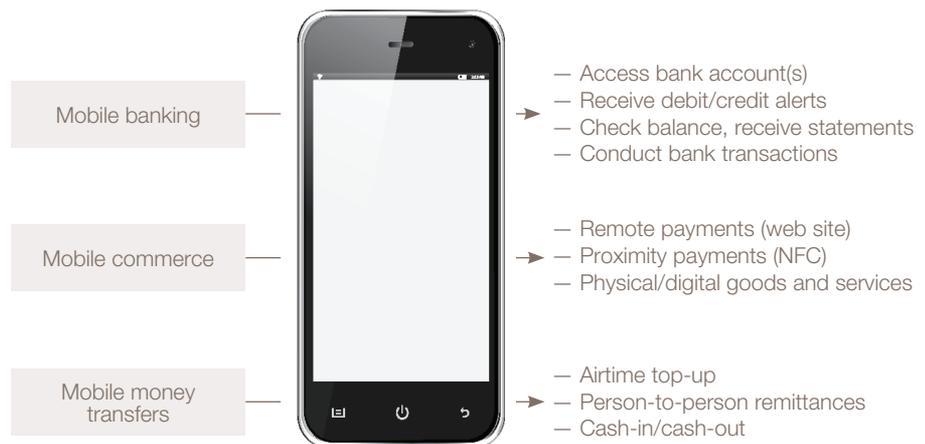
Mobile banking is using your mobile phone to access your bank account; receive debit/credit alerts and statements via SMS; check balances and recent transactions by browsing a simple mobile-enabled website; conduct basic operations via a menu; or transfer funds and pay bills using an application on a smart phone (see box 1). Many banks offer one or more of these options, like ICICI for example.

#### Box 1: Technology options

- SMS: communicate with payments services via short messages; can work with short codes. If a menu is required, access from a SIM card (after replacement) or an application folder (loaded from Micro SD card).
- USSD (Unstructured Supplementary Services Data): conversation-like telecom protocol to access menu on server by sending short code (e.g. dial \*525#).
- WAP (Wireless Application Protocol): to access simple text-only web page (online).
- IVR (Interactive Voice Response): menu accessed by calling toll-free number ("to transfer money, press 1").
- Application on smartphone typically downloaded.

Mobile can fundamentally change the retail banking experience and strengthen customer-bank relationships.

Some banks also have mobile banking services for corporate treasurers<sup>8</sup>, but these are often basic services to initiate and approve payments, receive transaction alerts and view account balances.



▲ Figure 2: Three strategic opportunities for banks in mobile payments

The good thing here is that the bank is in total control: the mobile phone purely acts as a channel to access the financial application that is owned by and runs at the bank.

Our recommendation: Banks should actively expand their mobile banking offering, which today is often still underdeveloped particularly toward corporates. A unique value proposition can turn mobile banking into a cost saving (instead of contacting a call centre) and revenue generating channel (increase loyalty, target marketing to cross-sell core banking services). This means banks should invest more in resources: a survey of 150 banks across Europe indicates that 70% are planning to add more functionality, but the majority have fewer than 10 people dedicated to mobile.<sup>9</sup>

Collaborative opportunity? Many smaller and medium-sized banks will be looking to deploy a mobile banking channel to connect their customers. Rather than build one, they are more likely to buy a product. In that case, it could make sense to provide a serviced mobile platform that can be white labelled.

### Mobile commerce

Mobile commerce is using your mobile phone to buy digital or physical goods and services, remotely from a website or in proximity like a shop, metro station or vending machine.

Not considered here as mobile payments are:

1. Direct carrier billing, where purchase of e.g. digital content like ringtones is charged to a mobile phone bill and

that bill is paid by a traditional payment method like credit transfer or direct debit. This practice is very successful however. Examples of companies that facilitate this are boku, Zong, mopay and PaymentOne, each servicing 200 million to 3 billion customers for 250-300 carriers in 60-80 countries;

2. Mobile point of sale, where a card reader is attached to a mobile phone or tablet to swipe a credit card. Whilst it has the potential to significantly increase the number of points of sale, the resulting payment is a traditional credit card transaction. Such card readers are provided by companies like Square, Intuit and iZettle;
3. Mobile product scanning, where a mobile phone is used to scan a product's bar code at an Apple store for example and links it to your iTunes account. In that case, your iTunes bill is settled by a credit card payment.

There is currently a buzz around NFC payments (see box 2). Used for example in Japan: 65 million enabled handsets, 15 million customers initiating 30-50 million transactions/month with 750,000 merchants; excluding transit.<sup>10</sup> Several projects have been launched in some 35 countries in Europe, the US and China<sup>11</sup>, but many have a long way to go to reach a mass market. Google Wallet is one example.

Here, consumer and e-commerce companies are better placed than banks to develop these solutions since they own the product or can enhance the shopping experience: browse the web to find and compare products, locate a store nearby, select the product from a smart poster,

receive a discount, and pay for it –all with a mobile phone, in one experience. Their interest is in generating an uplift in business from a higher average ticket spend and visitor frequency or from selling advertising, rather than in the payment itself.

#### Box 2: NFC

(Near Field Communications)

- Two-way contactless communication over short distance (few centimetres), between NFC-enabled phone and reader (e.g. POS terminal or smart poster).
- To enable a phone: 1) embed NFC chip, 2) glue NFC sticker at back, 3) insert Micro SD card (for iPhone e.g. Wireless Dynamics or DeviceFidelity provide a case).
- NFC vendors: e.g. Innovision/ Broadcom, NXP Semiconductors, INSIDESecure, Gemalto, VIVOTech
- NFC itself does not make a payment, still need to load virtual credit card(s) on phone.
- NFC-enabled phones to grow from 7 million in 2011 to 203 million in 2015 (Yankee Group),
- More in developed markets as emerging markets generally have basic handsets.
- More resources: Wikipedia NFC page, NFC forum.

Several telecom companies have started mobile wallet initiatives, but some have had to open up to reach a larger audience, ask for regulatory approval or delay projects<sup>12</sup>. Handset manufacturers may play a leading role by embedding their NFC chip in the phone.

However, there is a large degree of uncertainty about wide-scale adoption. Retailers and users need to be convinced of its value over existing payments alternatives. There are concerns about security: we must make sure that account and credit card details will be safe if the mobile phone is lost or stolen. And there is a high degree of technology evolution: where, for example, does the secure element sit to NFC-enable the handset and store the financial application? A whole new business has emerged for banks to distribute their payment and

credit card services over the air onto the mobile phone via a Trusted Service Manager.<sup>13</sup>

Our recommendation: A few banks have engaged in mobile commerce, but in general banks should remain realistic. This is not an easy area to get into as it requires a considerable investment that may not produce immediate returns. On the other hand, early involvement can develop a good understanding of how this all works. Banks should therefore look to partner with e-commerce companies to gain experience, insert their financial services in the commerce transaction, and then enhance the business of their payments products with better consumer insights. Another strategy for a large transaction bank can be to provide the back-end payments infrastructure to these e-commerce companies.

Collaborative opportunity? If this business further develops, many banks will need to use a Trusted Service Manager. Instead of each bank operating such a system, it could make sense to deploy a set of such applications as a hosted service in the cloud to provide more choice and reduce the total cost of ownership.

#### Mobile money transfers

In developing countries with a low banking and high mobile phone penetration, mobile wallets<sup>14</sup> can bring basic payments services to the un/under-banked. Often starting with money transfers, these services become more sophisticated over time to include paying for bills and goods, pre-paid debit cards, ATM withdrawals, salary disbursements, etc.

These are typically provided by mobile network operators using a mobile wallet (see box 3). Two examples are SMART Money in the Philippines (launched by SMART in 2000, over 9 million wallets, connected to 9,000 ATMs, over 4,000 cash-in/cash-out centers, 15 partner banks and 95,000 agents) and M-Pesa in Kenya (launched by Safaricom in 2007, 30,000 agents, 14 million users, 70% of all electronic transfers in Kenya, USD 1 billion transferred/month).

Mobile network operators see this as an up-sell, a value-added service. Their business case comes from transaction or subscription revenues, reducing mobile subscription top-up distribution costs and

increasing customer retention. They have a large agency network that can be re-used. They also have a better marketing and consumer deployment experience than many banks.

Whilst successful in some developing countries, these cannot be replicated as such in developed markets because of specific success factors: 1) a strong, latent demand for remittances; 2) in a country with low banking, high mobile penetration; 3) with a legal framework that enables easy customer registration and is in proportion to the risk of very low value payments; 4) starting with domestic remittances and mobile top-up; 5) by a dominant player, motivated to establish a leading position in a closed system; and 6) supported by a large agent network<sup>15</sup>.

This agent network is key for people to pay cash into their mobile wallet and to cash money out. The service provider must make sure the agents support its product and that there is sufficient

#### Box 3: Key mobile wallet/platform vendors

- Comviva: Ex-Bharti Telesoft; provides value added services to mobile operators; deployments with Orange in Africa, Tigo in Africa and Latin Americas, and South East Asia.
- Fundamo: HQ in South Africa, acquired by VISA; mobile financial services provider; deployments with MTN in Africa.
- Gemalto: HQ in Amsterdam; provides digital security solutions, incl. for NFC; platform for mobile money transfers.
- Monetise: HQ in London; delivers mobile banking, payments and commerce networks; VISA partnership.
- Oberthur: HQ in France; provides smart cards; partnership with Utiba; deployed by e.g. airtel in Africa.
- Sybase 365: HQ in the US; SAP company; provides mobile messaging and commerce including remittances; bought paybox.
- Utiba: HQ in Singapore; pioneer in mobile financial services with G-Cash, deployments in Asia Pacific, Latin America.

liquidity in the network (if a person wants to cash out their salary, but the agent does not have any money, the SMS on their phone has no value, except to make other mobile purchases).

So where is the next big opportunity? Several readiness and condition frameworks, as well as detailed country analyses are available.<sup>16</sup> These, combined with population size (to develop a significant business), lead us for example to Nigeria, India, Pakistan, Brazil, Mexico and Colombia.

Our recommendation: Banks should consider making a bolder move in mobile money transfers. They should take an opportunistic approach and individually partner with a mobile network operator for a specific deployment in one country, as well as work together to deploy a global mobile payments service for international money transfers and remittances.

Collaborative opportunity? If banks are to develop a global mobile payments service, it could make sense to develop this collaboratively.

### Obstacles to growth in mobile money transfers

Let's have a closer look at mobile money transfers. Whilst there are several domestic deployments, many still need to build their customer base or create the basic service. We see three obstacles to further growth and global adoption:

#### Box 4: Differences in legal frameworks (examples)

- MNO friendly: Philippines (MNOs can perform banking functions), Kenya (wallet seen as transaction accounts), Nigeria, Malaysia, Thailand, Indonesia.
- Flexible: Europe (e-money directive – often taken as example, MNO can get PSD license), US (MNO to register at FinCEN as money service business), Japan (non-discriminatory rules, MNO to deposit money in bank account)
- Banks only: South Africa (bank-led except for agents, lower KYC/AML requirements), India, Bangladesh, Tanzania, Uganda.

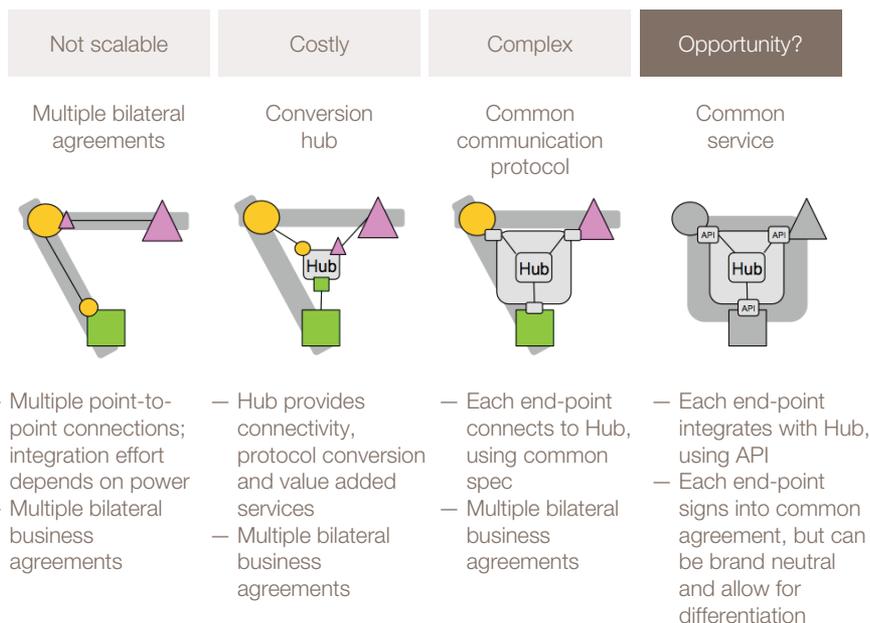


Figure 3: Options to achieve interoperability across mobile payments services

### Regulation

In several countries there is already a regulatory framework for e-money and mobile payments, while in others it is still evolving. Conditions vary between countries on who can operate such a service, the transaction and wallet size, and the type of transaction allowed (see box 4).

Regulators are concerned about mobile payments being used for money laundering and fraud. Several have adopted a proportionate approach, balancing advancing financial inclusion with ensuring the stability and soundness of the country's financial system.

### Cooperation

Not one single bank or mobile network operator covers the whole world, so there is a need for cooperation and partnerships.<sup>17</sup> Joint ventures between mobile network operators may not be obvious as they are very competitive on their core voice and data business. Joint ventures with banks may not be obvious as parties have different business objectives, different perspectives on revenue sharing, and different mind sets (mobile operators are more agile, banks focus on robustness).

Examples include Equity Bank with M-Pesa, State Bank of India with airtel, Banamex with América Móvil, Alfa-Bank

with VimpelCom, Garanti Bank with Turkcell and Avea.

### Interoperability

Today, most mobile payments services are closed-loop systems whereby one customer cannot send a payment to a customer in another system, even within one country. Interoperability is the metaphorical elephant in the room: all agree it can boost volumes, but with their own company's interests taking priority, nobody wants to let anyone in whilst expanding market share.

Still, interconnectivity is growing. For example: G-Cash has bilateral agreements with several other systems. Western Union links to M-Pesa; BICS' HomeSend is a hub that includes communication protocol as well as FX conversion; India's IMPS is multi-bank by design and underpinned by the country's ACH<sup>18</sup> and we also see this model in the UK supported by Vocalink. By and large however, mobile systems do not interconnect on a global basis.

## The ideal model for interoperability

Interoperability may be required, but what does it actually mean and how can it be achieved? For end-customers interoperability simply means that it works and is easy, fast, safe and cheap.

For service providers, interconnecting means a lot of acrobatics behind the scenes:

- Technical: establish secure real-time connectivity between service providers, conversion of communication protocols (from SMS in one system to USSD in the other);
- Customer product features: the cost of making a mobile payment, the maximum amount allowed, product types supported (just payments or also micro-credits), feature compatibility (send payment or also beneficiary initiated, possibility to include notification text, specific features present in one system but not another, possibility to create a viral wallet or not);
- Commercial conditions between service providers: split of revenues and costs, FX conversion, charges to customers (deducted from initial or received amount), providing transparency upfront of these charges, amounts and execution timeframes to customers;
- Legal: contractual agreements, responsibility and liability, ensure minimum level of KYC and AML by each party, recourse procedures;
- Clearing and settlement and related liquidity and risk management.

There are several options to achieve this, ranging from multiple bilateral agreements to a conversion hub, a common communication protocol, or a common service where companies adhere to the same set of rules.

It is not clear which model will prevail, but it is worth exploring the opportunity of a common service.

## The case for a global bank-owned service

Today, most domestic mobile money transfer services are run by mobile network operators that have begun to target the international remittance market. For example, Vodafone Money Transfer in Qatar, which has nearly 1.7 million expatriates, can send money transfers to 10 countries. Mobile network operators also link together or connect with money transfer operators and credit card companies: e.g. G-Cash and Maxis, MoneyGram and SMART Money, Western Union and M-Pesa, MTN and VISA. Card companies are also creating their own international P2P services: e.g. Visa acquired Fundamo, American Express created Serve.

Should banks stand by and watch? Aren't money transfers, mobile included, the business of banks?

### A sustainable business for telcos?

In the long run, mobile money transfers may not be as profitable as some mobile operators thought:

1. Not a core activity: mobile network operators see mobile payments as a value added service, whereas for banks it is a core service. This will impact resource allocation.
2. Limited revenues: the business case for a telecom company to deploy a mobile remittance corridor can have a quick and strong payback albeit with limited revenue. Only 10% of mobile operators see this service as accounting for more than 10% of their bottom line.<sup>19</sup>
3. Increasing costs: as volumes rise and become systemically important or go cross-border, regulators will impose higher KYC/AML checks, compliance conditions, business continuity, more frequent and detailed reporting, etc., thereby increasing the operator's cost and reducing margins. For banks, this cost is already part of their operating model.

4. Increasing competition: a regulator may initially facilitate one operator to thrive in order to develop a basic payments infrastructure, but before long the system will be opened up to other providers to avoid excessive market power, drive further financial inclusion and allow customers the choice of service provider. Over 70% of mobile network operators expect 3-5 competitors in their market in 3-5 years.<sup>20</sup> Some have applied for a bank or payment service provider licence, such as Rogers in Canada or O2 in the UK. They thereby become bank competitors.

5. Interoperability: to further grow volumes, telecom companies will have to interconnect their mobile payments services, but making them globally interoperable is quite complicated.

### A good business for banks?

International money transfers are a core business of many banks. Banks have reason to protect and grow that business with innovative services, mobile payments included:

1. This is a sizeable business for banks. Over 215 million people live outside their country of birth. Worldwide recorded remittance flows are expected to reach USD 536 billion by 2013; detailed information about top emigration countries and migration corridors is available.<sup>21</sup> Banks currently have 30% of this business; there is market share to be gained.
2. This is a high margin business, where willingness to pay is much greater than in domestic or face-to-face transactions at point of sale. In addition to person-to-person (P2P) payments, banks can use their existing relationships to attract additional volumes from businesses (B2P) and governments (G2P) for salary and social payments.
3. Instead of playing a secondary role in a telco-led model, banks can capture 65% of the value if they run the mobile payment service (still likely needing an agent network). For banks, the transactional payments business may not be the end-game, but a way to build relationships and up-sell more banking products, such as savings, credit and insurance.

4. Research shows financial institutions have the most trust, consideration and preference for mobile payments among consumers versus mobile network operators, hand manufacturers or mobile ecosystem/OS providers.<sup>22</sup>

### A bold yet pragmatic approach

Rather than trying to achieve interoperability between multiple mobile ecosystems, which will take forever and can be quite costly, banks should consider developing a global service for mobile person-to-person payments that each bank can plug into.

Key characteristics of such a service would be:

- Transparent and compelling. Not built on a platform that converts a patchwork of multiple bilateral systems, but a single and consistent offering;
- Open. An API allows banks to insert their mobile money transfer services, may be open to other providers as well;
- Simple to use. Money is sent to the receiver's mobile phone number, rather than to an account number and bank code;
- Work off existing bank accounts replenished via ACH or direct debit. This is similar to PayPal, but now the money is kept in the banking system;
- Brand neutral, allowing for differentiation. Whilst providing a common infrastructure, each bank can brand and differentiate the service for its customers;
- Include agency networks and cash out capabilities. In particular at the receiver's side, typically in a developing country without bank accounts but with mobiles (e.g. HDFC Bank in India's partnership with Vodafone). The mobile wallet can be combined with a pre-paid card to make a POS purchase or withdraw money at an ATM;
- Buy instead of build. The service does not need to be developed from scratch, as there are several wallet systems and providers out there to choose from;

- Adopt a pragmatic approach. Although bank-owned, the service could be run as a commercial company to have the necessary execution and deployment agility.

### Who can bring banks together?

"Let's just all use SWIFT, because it works". That was a proposal in the opening of a conference panel discussing the interconnectivity of mobile payments services.

There are some initiatives where banks collaborate on a domestic level, like clearXchange in the US or IMPS in India. Who can bring banks together to work on mobile payments on a global level?

- The mobile network operator community? The GSMA, for example, has global coverage and is actively driving mobile payments, but as it represents the interests of mobile operators, banks at large may not be willing to join.
- The interbank world? SWIFT, for example, operates globally and has a track record of interoperability. Mobile payments initiatives, however, tend to be driven by banks' retail organisations which are not very familiar with SWIFT-related transaction processes.
- A mobile payments association? Mobey Forum, for example, is bank-led, but can it gather a global execution capability?
- An international standards body? ISO, for example, has a global, cross-industry representation, but as they are chiefly concerned with standardisation, could they drive commercial adoption?
- A platform vendor? Can they ever be inclusive enough?

Banks can seize mobile payments as an opportunity, provided they define a clear strategy and invest accordingly. To that purpose, we recommend a series of actions for banks to pursue in mobile banking, mobile commerce and mobile money transfers.

In particular regarding mobile money transfers, banks should look to make a bolder move and develop a global person-to-person payments service that is mobile-enabled.

In doing so, banks will pro-actively shape the future of mobile payments.

### A shaping role for the banking industry

In conclusion, mobile payments have a strong growth potential.

Many banks have developed a mobile payments service or wallet. But many non-banks have also entered the mobile payments market, often with innovative solutions.

### Some additional resources

- Global M-Payment Report Update – 2009, Arthur D. Little (a bit dated but still a good read)
- Mobile Payments: How can banks seize the opportunity, 2011, Capgemini
- White Paper Mobile Payments, 2nd edition, February 2012, EPC (on mobile payments in SEPA)
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### Contact

Wim Raymaekers  
Head of Banking Market  
+ 32 2 655 33 29  
[wim.raymaekers@swift.com](mailto:wim.raymaekers@swift.com)